

## Spirituality in Serious Illness and Health

Tracy A. Balboni, MD, MPH; Tyler J. VanderWeele, PhD; Stephanie D. Doan-Soares, DrPH; Katelyn N. G. Long, DrPH, MSc; Betty R. Ferrell, PhD, RN; George Fitchett, DMin, PhD; Harold G. Koenig, MD, MHSc; Paul A. Bain, PhD, MLS; Christina Puchalski, MD, MS; Karen E. Steinhauser, PhD; Daniel P. Sulmasy, MD, PhD; Howard K. Koh, MD, MPH

**IMPORTANCE** Despite growing evidence, the role of spirituality in serious illness and health has not been systematically assessed.

**OBJECTIVE** To review evidence concerning spirituality in serious illness and health and to identify implications for patient care and health outcomes.

**EVIDENCE REVIEW** Searches of PubMed, PsycINFO, and Web of Science identified articles with evidence addressing spirituality in serious illness or health, published January 2000 to April 2022. Independent reviewers screened, summarized, and graded articles that met eligibility criteria. Eligible serious illness studies included 100 or more participants; were prospective cohort studies, cross-sectional descriptive studies, meta-analyses, or randomized clinical trials; and included validated spirituality measures. Eligible health outcome studies prospectively examined associations with spirituality as cohort studies, case-control studies, or meta-analyses with samples of at least 1000 or were randomized trials with samples of at least 100 and used validated spirituality measures. Applying Cochrane criteria, studies were graded as having low, moderate, serious, or critical risk of bias, and studies with serious and critical risk of bias were excluded. Multidisciplinary Delphi panels consisting of clinicians, public health personnel, researchers, health systems leaders, and medical ethicists qualitatively synthesized and assessed the evidence and offered implications for health care. Evidence-synthesis statements and implications were derived from panelists' qualitative input; panelists rated the former on a 9-point scale (from "inconclusive" to "strongest evidence") and ranked the latter by order of priority.

**FINDINGS** Of 8946 articles identified, 371 articles met inclusion criteria for serious illness; of these, 76.9% had low to moderate risk of bias. The Delphi panel review yielded 8 evidence statements supported by evidence categorized as strong and proposed 3 top-ranked implications of this evidence for serious illness: (1) incorporate spiritual care into care for patients with serious illness; (2) incorporate spiritual care education into training of interdisciplinary teams caring for persons with serious illness; and (3) include specialty practitioners of spiritual care in care of patients with serious illness. Of 6485 health outcomes articles, 215 met inclusion criteria; of these, 66.0% had low to moderate risk of bias. The Delphi panel review yielded 8 evidence statements supported by evidence categorized as strong and proposed 3 top-ranked implications of this evidence for health outcomes: (1) incorporate patient-centered and evidence-based approaches regarding associations of spiritual community with improved patient and population health outcomes; (2) increase awareness among health professionals of evidence for protective health associations of spiritual community; and (3) recognize spirituality as a social factor associated with health in research, community assessments, and program implementation.

**CONCLUSIONS AND RELEVANCE** This systematic review, analysis, and process, based on highest-quality evidence available and expert consensus, provided suggested implications for addressing spirituality in serious illness and health outcomes as part of person-centered, value-sensitive care.

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 Supplemental content

**Author Affiliations:** Author affiliations are listed at the end of this article.

**Corresponding Authors:** Howard K. Koh, MD, MPH, Harvard T.H. Chan School of Public Health and John F. Kennedy School of Government, Harvard University, 677 Huntington Ave, Boston, MA 02115 ([hkoh@hsph.harvard.edu](mailto:hkoh@hsph.harvard.edu)); Tracy A. Balboni, MD, MPH, Harvard Medical School, Brigham and Women's Hospital, 75 Francis St, Amory L2, Boston, MA 02115 ([tbalboni@bwh.harvard.edu](mailto:tbalboni@bwh.harvard.edu)).

**S**pirituality, the way persons seek and experience ultimate “meaning, purpose, and transcendence...and the significant or sacred,”<sup>1</sup> has over millennia been viewed as central to health as well as personal, interpersonal, or transcendent beliefs and values.<sup>2</sup> According to a 2014 Pew survey of 35 071 US adults,<sup>3</sup> most identified with a faith tradition, reported regular experiences of spiritual peace, or reported that they attended religious services a few times a year or more. A 2021 Gallup survey of 1837 US adults<sup>4</sup> reported similar themes, although religious expressions of spirituality, such as service attendance, were decreasing. Spirituality, while encompassing beliefs and practices of religious communities, extends beyond religion to include how ultimate meaning, purpose, and transcendence can arise through, for example, vocation, family, or nature<sup>5</sup> (see **Box** for definitions). Any individual may thus experience spirituality.

Over the past 2 centuries, deep historical connections between health and spirituality have fragmented.<sup>2</sup> Despite increasing data linking spirituality with improved health outcomes, including among groups for whom spirituality has a salient role, such as US older persons and Black and Latinx populations,<sup>3</sup> such issues remain largely outside standard considerations regarding health. Failure to consider these aspects may have potential adverse effects, including undermining person-centered care. Attention to spirituality—a source of personal meaning and value—is a requisite component of person-centered care, defined by the Institute of Medicine as “care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions.”<sup>9</sup>

To clarify the role of spirituality, (1) a systematic review was performed of the available evidence regarding spirituality in serious illness and health outcomes; (2) data from these studies were interpreted and synthesized by a multidisciplinary, expert Delphi panel; and (3) implications for integrating spirituality into health care were suggested.

## Methods

The RAND/UCLA Appropriateness Method,<sup>10</sup> used to synthesize the highest-quality evidence available and identify evidence-based implications for health care, was established for situations in which randomized clinical trials are “either not available or cannot provide sufficient detail...to guide everyday clinical practice.” Using this method, the research team coordinated a 5-step process that summarized the relatively contemporary evidence available in spirituality and health and used a multidisciplinary, expert Delphi panel to synthesize the data into concise evidence statements and to yield top-3 implications for health care in serious illness and health (**Figure**). The research team consisted of 17 trained persons (T.A.B., T.J.V., S.D.D.-S., K.N.G.L., P.A.B., H.K., and 11 research assistants with training in research methods) who participated in regular meetings from March 2020 to May 2022 regarding methodological procedures. The study protocol was approved by the Dana-Farber/Harvard Cancer Center Institutional Review Board as exempted research given that survey responses were disconnected from panelists’ identifying information; formal written, informed consent was waived.

### Step 1: Research Team Conducted Systematic Review to Identify and Summarize the Available Evidence

The systematic review was performed by searching the electronic databases PubMed (National Center for Biotechnology Information), Psy-

## Key Points

**Question** How can considerations of spirituality guide health care and health outcomes?

**Findings** A systematic review and a multidisciplinary Delphi panel assessed the evidence regarding spirituality and health, developed 16 evidence statements, and offered 6 implications regarding incorporation of spirituality in the care of patients with serious illness and in health outcomes.

**Meaning** This systematic review and process, based on the highest-quality evidence available and expert review, led to consensus-suggested implications for how to address spirituality in serious illness and health outcomes.

cinFO (EBSCO), and Web of Science (Clarivate Analytics) for studies that (1) considered spirituality during serious medical illness (ie, terminal, late-stage, or catastrophic illness) or during end-of-life or palliative care (eAppendix 1A in the **Supplement**) and (2) considered associations of spirituality and health outcomes, including mental illness, substance use, suicide, quality of life (eg, life satisfaction), health behaviors, and mortality (eAppendix 1B in the **Supplement**). Searches were conducted in April 2020 by a medical librarian (P.A.B.) and, when available, included appropriate controlled vocabulary terms. Follow-up systematic reviews in serious illness and health outcomes were performed in May 2022 using identically performed searches of the literature from April 2020 to April 2022 to update the evidence (eAppendixes 1A and 1B in the **Supplement**).

Using Covidence (Veritas Health Innovation), an online systematic review tool, 2 trained reviewers independently screened each study and included those for which both agreed that the article met eligibility criteria; differing assessments of inclusion were arbitrated by a third trained reviewer, by group discussion, or both. Although studies could focus on populations worldwide, eligible studies for “serious illness” and “health outcomes” reviews had to be in English and published from January 2000 to April 2020 in a peer-reviewed journal. This time frame, later updated to April 2022, was chosen to prioritize up-to-date research while permitting sufficient breadth and quantity of literature to identify evidence themes. For studies of serious illness, eligible studies met the following criteria: (1) examined populations of 100 or more persons with serious illness; (2) were prospective cohort studies, cross-sectional descriptive studies, meta-analyses (containing data not otherwise included), or randomized clinical trials; and (3) included validated measures of spirituality. Retrospective and scale validation studies were excluded.

For health outcomes, eligible studies met the following criteria: (1) prospectively examined the relationship between spirituality and health; (2) used data from prospective cohort studies, case-control studies, or meta-analyses (containing data not otherwise included) with sample sizes of 1000 or more or were randomized clinical trials (eg, public health interventions) with sample sizes of 100 or more; and (3) used validated measures of spirituality. Retrospective or cross-sectional studies were excluded. There were differing exclusion criteria for cross-sectional studies in the serious illness and health outcomes sections; for serious illness, studies were included to provide descriptive assessments of spirituality in illness, whereas for health outcomes, such studies were excluded to

**Box. Definitions of Terms in Spirituality in Health Research and Practice<sup>a</sup>**

**Spirituality (spiritual):** Spirituality is a dynamic and intrinsic aspect of humanity through which persons seek ultimate meaning, purpose, and transcendence and experience relationship to self, family, others, community, society, nature, and the significant or sacred. Spirituality is expressed through beliefs, values, traditions, and practices (International Conference on Improving the Spiritual Dimension of Whole Person Care definition).<sup>1</sup>

**Religion (religiosity):** Religion is the search for significance that occurs within the context of established institutions that are designed to facilitate spirituality.<sup>6</sup>

**Spiritual needs (spiritual concerns, spiritual distress, spiritual struggle, spiritual pain, existential distress):** Needs related to a person's spirituality, including spiritual questions, concerns, practices, and struggles.<sup>7</sup>

**Spiritual care:** Recognition of and attention to spirituality within health care. Spiritual care relies on a multidisciplinary team (eg, chaplains, physicians, nurses, social workers) and requires standard inclusion of a spiritual history as part of a comprehensive medical history.<sup>1,8</sup>

<sup>a</sup> These definitions were used throughout this study and provided to Delphi panelists.

focus on how spirituality was associated with subsequent health, requiring large longitudinal designs.

An initial trained reviewer extracted information from all articles that met inclusion criteria, including study population and location(s), methods, assessment of spirituality, assessment of outcomes, study findings, and risk of bias. Risk-of-bias judgments (low, moderate, serious, or critical) were based on adapted Cochrane criteria (eAppendix 2 in the [Supplement](#)).<sup>11</sup> A second trained reviewer checked the extraction and independently judged risk of bias. Differing bias assessments were arbitrated by a third reviewer, by group discussion, or both. The research team synthesized and tabulated the data and developed initial evidence summaries and tables (eAppendix 3 in the [Supplement](#)). Even though standard Cochrane review procedures exclude only studies with critical risk of bias, for this review, to maximize rigor, data evaluation excluded studies with serious or critical risk of bias. Studies on spirituality and serious illness were categorized into 1 or more of 5 content areas: (1) role of spirituality in illness; (2) spiritual needs; (3) spiritual care; (4) spirituality in medical decision-making; and (5) spiritual interventions. Studies on spirituality and health outcomes were categorized into 1 or more of (1) all-cause mortality; (2) physical health; (3) health behaviors; (4) mental health; and (5) quality of life.

### Step 2: Delphi Panel Assessed (Qualitative) Systematic Review Results, Generated Initial Evidence Statements, and Suggested Implications

Using the Delphi expert panel process,<sup>10,12</sup> a multidisciplinary group of experts (eAppendix 4 in the [Supplement](#)) assessed the evidence and generated evidence-based suggested implications for health care. The panel was divided into 2 subpanels (n = 13 for serious illness and n = 15 for health outcomes; total = 27; 1 participated in both). Twenty-three panelists responded to an optional, anonymous survey on spiritual characteristics (response rate = 85%). Pan-

elists represented a diversity of spiritual viewpoints and/or traditions, including those who self-identified as atheist (n = 1 [4.3%]), Anglican (n = 2 [8.7%]), Baptist (n = 3 [13.0%]), Catholic (n = 4 [26.1%]), Jewish (n = 2 [8.7%]), Hindu (n = 1 [4.3%]), mainline Protestant (n = 2 [8.7%]), Muslim (n = 1 [4.3%]), nondenominational Christian (n = 2 [8.7%]), Quaker (n = 2 [8.7%]), and spiritual, not religious (n = 1 [4.3%]). Additionally, 3 (13%) indicated spiritual, not religious as a secondary viewpoint. Furthermore, 24 panelists' self-identified minority group representations included Asian (n = 3 [16.7%]), Black (n = 2 [8.3%]), Latinx (n = 1 [4.2%]), LGBTQ+ (n = 2 [8.3%]), and persons with disability (n = 1 [4.2%]). Panelists typically contributed more than 1 health expertise area and included physicians (n = 11; primary care, pediatrics, palliative care, emergency medicine, psychiatry, oncology); nurses (n = 3); spiritual care professionals (n = 4; chaplains, community clergy); a social worker (n = 1); mental health care practitioners (n = 4); health care systems experts (n = 9); public health experts (n = 14); health policy experts (n = 10); a patient and family advocate (n = 1); and medical ethicists (n = 3). Panel discussions were moderated by 2 nonvoting members. Panelists received an honorarium on Delphi process completion.

On March 4, 2021, the research team convened the Delphi panel virtually for an initial meeting; introduced the project; provided relevant definitions (see Box); explained the systematic literature review process, data tables, and data syntheses; and coordinated group discussion. Over the next 2 months, panelists independently reviewed the data tables and literature summaries and provided qualitative feedback on the content of the literature review, including suggestions on missing studies. Additionally, using studies with low to moderate risk of bias only, the Delphi panelists qualitatively summarized the literature into evidence statements and provided implications for health care.

### Step 3: Research Team Analyzed Qualitative Delphi Panel Feedback to Create a Portfolio of Evidence Statements and Suggested Implications

Using an online qualitative data repository and data analysis application (Dovetail), the research team conducted a qualitative analysis of all feedback, evidence statements, and suggested implications from the Delphi panelists. The standard qualitative methodology<sup>13</sup> included independent review of qualitative responses by 2 trained reviewers each for the serious illness and health outcomes sections, independent development of preliminary coding themes for each section, and finalization of coding themes using an iterative comparison process by the research team. Using the final set of themes, 2 reviewers independently coded qualitative responses, with discrepancies resolved through research team meetings. Applying the thematically analyzed data from the Delphi panelists, the research team revised the data summaries and tables and created the final portfolio of evidence statements and suggested implications for serious illness and health outcomes.

### Step 4: Delphi Panel Evaluated (Quantitative) Strength of Data Supporting Evidence Statements and Ranked Suggested Implications

On May 28, 2021, panelists were provided with revised (based on panelists' prior input) data tables and summaries and the evidence

**Figure. Methodological Procedures From Systematic Reviews of the Evidence to Suggested Implications for Spirituality in Serious Illness and Health Outcomes**

Methodological procedure	Spirituality and serious illness	Spirituality and health outcomes
<p><b>STEP 1</b></p> <p>Research team conducts systematic review to identify and summarize the strongest data available.<sup>a</sup></p>	<p>Systematic review of spirituality in serious illness evidence, 2000-2020, with grading and tabulation of eligible data into data tables.<sup>b</sup> Updated literature review to include 2020-2022 was performed in May 2022.<sup>c</sup></p>	<p>Systematic review of spirituality in health outcomes evidence, 2000-2020, with grading and tabulation of eligible data into data tables.<sup>b</sup> Updated literature review to include 2020-2022 was performed in May 2022.<sup>c</sup></p>
<p><b>STEP 2</b></p> <p>Delphi panel assesses (qualitative) systematic review results and generates initial evidence statements and suggested implications for health care.</p>	<p>Delphi panel review of the evidence. Each reviewer produced qualitative evidence statements and qualitative recommendations for the practice of medicine based on review of low to moderate risk of bias evidence from the systematic review.</p>	<p>Delphi panel review of the evidence. Each reviewer produced qualitative evidence statements and qualitative recommendations for health promotion based on review of low to moderate risk of bias evidence from the systematic review.</p>
<p><b>STEP 3</b></p> <p>Research team analyzes qualitative Delphi panel feedback to create a portfolio of evidence statements and implications for health care.</p>	<p>Qualitative analysis of Delphi panelists' evidence statements and recommendations for practice of health care in serious illness resulting in qualitatively derived evidence statements and suggested implications for health care in serious illness.</p>	<p>Qualitative analysis of Delphi panelists' evidence statements and recommendations for health promotion resulting in qualitatively derived evidence statements and suggested implications for health promotion.</p>
<p><b>STEP 4</b></p> <p>Delphi panel evaluates (quantitative) strength of data supporting evidence statements and ranks suggested implications for health care.</p>	<p>Delphi panelists quantitatively assessed the qualitatively derived evidence statements using RAND/UCLA-adopted assessment and methods<sup>d</sup> and quantitatively assessed suggested implications by ranking them in order of priority for practice of health care in serious illness.</p>	<p>Delphi panelists quantitatively assessed the qualitatively derived evidence statements using RAND/UCLA-adopted assessment and methods<sup>d</sup> and quantitatively assessed suggested implications by ranking them in order of priority for health promotion.</p>
<p><b>STEP 5</b></p> <p>Based on Delphi panel quantitative data, research team identifies evidence statements supported by strong evidence and top 3 implications for health care.</p>	<p>RAND/UCLA quantitative assessment used, including interpercentile degree of agreement and medians/means indicating strength of evidence. Consensus ratings as strong evidence were reported. For suggested implications in serious illness, proportion ranking the implication in the top 3, confirmed by rank-order statistics, yielded the top 3.<sup>e</sup></p>	<p>RAND/UCLA quantitative assessment used, including interpercentile degree of agreement and medians/means indicating strength of evidence. Consensus ratings as strong evidence were reported. For suggested implications for health promotion, proportion ranking the implication in the top 3, confirmed by rank-order statistics, yielded the top 3.<sup>e</sup></p>

<sup>a</sup> See eAppendix 1 in the Supplement for systematic review procedures, including eligibility and ineligibility criteria.

<sup>b</sup> See eAppendixes 2A and 2B in the Supplement for Cochrane evidence grading criteria, and see eAppendixes 3A and 3B in the Supplement for the tabulated data.

<sup>c</sup> See eAppendixes 7A and 7B in the Supplement for the a summary of the updated research literature from 2020-2022.

<sup>d</sup> See eAppendix 5 in the Supplement for the RAND/UCLA method for determining Delphi panel consensus.

<sup>e</sup> See eAppendixes 6A and 6B in the Supplement for a full list of recommendations in order of their ranking.

synthesis statements and suggested implications, together with a summary presentation (presented virtually and provided electronically). Using revised data tables and summaries based on studies with low to moderate risk of bias, from May 29, 2021, to July 23, 2021, panelists assessed the evidence synthesis statements quantitatively using the 9-point RAND/UCLA assessment of appropriateness adapted to the current project—an ordinal scale of integers from 1 to 9, grouped into 3 categories: inconclusive to weak evidence (1-3), moderate-strength evidence (4-6), and strong evidence (7-9). Panelists ranked suggested implications for serious illness and health outcomes.

**Step 5: Based on Delphi Panel Quantitative Data, Research Team Identified Evidence Statements Supported by Synthesized Evidence and 3 Top-Ranked Implications**

The research team next used descriptive statistics to quantitatively analyze Delphi panelists' quantitative assessments of the evidence statements, including medians, interquartile ranges, means, and standard deviations. Using the RAND/UCLA Appropriateness Method,<sup>10</sup> the location of the median established the

category grouping (inconclusive to weak, moderate, or strong evidence) into which the evidence rating fell. The degree of rater agreement was considered, with agreement vs disagreement assessed using the interpercentile range adjusted for asymmetry<sup>10</sup> (IPRAS; see eAppendix 5 in the Supplement). When data medians and means were within the strong evidence category (strong category defined as median of 7 or greater; mean of 7 or greater after rounding) and the calculated IPRAS indicated panel agreement, the evidence statement was deemed to be supported by evidence categorized as strong.

For each suggested implication, the proportion of individual rankings for which the implication was 1 of any individual's top-3 ranked implications was assessed. Rank-order statistics based on the sum of the ranks were used to confirm the 3 top-ranked suggested implications for serious illness and health outcomes. All qualitative and quantitative data from panelists were anonymized. Proportions of non-North American studies in the initial (2000-2020) vs the updated (2020-2022) literature were compared with a  $\chi^2$  test;  $P < .05$  was considered statistically significant.

## Results

### Literature Reviews

The database search initially yielded 13 203 original research articles pertaining to spirituality in serious illness; 8946 remained after duplicates were removed. After applying eligibility criteria, including for 16 additional studies recommended by the Delphi panel, 371 studies were identified. **Table 1** summarizes these findings (see eAppendix 3A in the **Supplement** for full data tables). Studies deemed to have low to moderate risk of bias (76.9%) informed Delphi panelists' evidence assessments in 5 topic categories (studies could inform multiple areas). Proportions of studies that were deemed to have low to moderate risk of bias in the following categories were as follows: role of spirituality, 128/173 (74.0%); spiritual needs, 37/47 (78.7%); spiritual care, 82/112 (73.2%); medical decision-making, 32/38 (84.2%); and interventions, 30/32 (93.8%).

The database search initially yielded 10 133 original research articles pertaining to spirituality and health outcomes; 6485 remained after duplicates were removed. After applying eligibility criteria, including for 40 additional studies recommended by the Delphi panel, 215 studies were identified. **Table 2** summarizes these findings (see eAppendix 3B in the **Supplement** for full data tables). Studies deemed to have low to moderate risk of bias (66.0%) informed Delphi panelists' evidence assessments in 5 topic categories (studies could inform multiple areas). Proportions of studies that were deemed to have low to moderate risk of bias in the following categories were as follows: all-cause mortality, 26/32 (81.3%); physical health, 21/32 (65.6%); health behaviors, 42/66 (63.6%); mental health, 47/73 (64.4%); and quality of life, 31/50 (62.0%).

### Evidence Synthesis Statements and Strength-of-Evidence Ratings

From the qualitative statements summarizing the evidence, evidence synthesis statements were derived, including 12 for serious illness and 28 for health outcomes. Delphi panelists' quantitative assessments of the data supporting each evidence statement are shown in **Table 3** and **Table 4**.

Spirituality in serious illness yielded 8 evidence synthesis statements (of 12 statements) for which panel ratings met criteria for agreement as supported by evidence categorized as strong, including the following: (1) spirituality is important for most patients; (2) spiritual needs are common; (3) spiritual care is frequently desired by patients; (4) spiritual needs are infrequently addressed in medical care; (5) spirituality can play a role in medical decision-making; (6) spiritual care is infrequent in medical care; (7) unaddressed spiritual needs are associated with poorer patient quality of life; and (8) provision of spiritual care is associated with better patient end-of-life outcomes.

Spirituality and health outcomes yielded 8 evidence synthesis statements (of 28 statements; the most frequent rating was moderate) that met criteria for panel agreement as supported by evidence categorized as strong, including the following: (1) frequent religious/spiritual service attendance is associated with a lower risk of mortality; (2) frequent attendance is associated with subsequent less smoking and use of alcohol, marijuana, and illicit drugs; (3) frequent attendance is associated with subsequent better quality of life; (4) frequent attendance is associated with subsequent better men-

tal health outcomes; (5) there is a dose-response relationship between frequent attendance and lower risk of mortality; (6) frequent attendance is associated with subsequent less smoking, risky sexual behaviors, and use of alcohol, marijuana, and illicit drugs in adolescents; (7) frequent attendance is associated with fewer subsequent depressive symptoms; and (8) frequent attendance is associated with subsequent fewer suicidal behaviors. See eAppendix 3B in the **Supplement** for effect size ranges. For 2 outcomes, available meta-analyses of longitudinal studies with control for baseline outcome (**Table 2**) indicated that religious/spiritual service attendance was associated with lower all-cause mortality (hazard ratio, 0.73; 95% CI, 0.63-0.84)<sup>15</sup> and incidence of depression (odds ratio, 0.67; 95% CI, 0.58-0.81).<sup>16,17</sup>

### Ranked Suggested Implications for Spirituality and Health Outcomes

After the research team thematically compiled suggested implications for serious illness (n = 4) and health outcomes (n = 14) proposed by the Delphi panelists, the implications were presented to the Delphi panelists for ranking by priority. **Table 5** shows the 3 top-ranked suggested implications for serious illness and for health outcomes; eAppendixes 6A and 6B in the **Supplement** provide the full lists.

For serious illness, the 3 top-ranked suggested implications were (1) routinely incorporate spiritual care into the medical care of patients with serious illness (92.5% ranked in the top 3); (2) include spiritual-care education in the training of members of the interdisciplinary medical team (76.9% ranked in the top 3); and (3) include specialty practitioners of spiritual care (eg, chaplains) in the care of patients with serious illness (69.2% ranked in the top 3).

For health outcomes, the 3 top-ranked suggested implications were (1) explicitly recognize and consider evidence-based protective and beneficial associations of religious/spiritual community participation as part of efforts to improve patient-centered care and population health (80.0% ranked in the top 3); (2) increase awareness of public health professionals and students about the evidence regarding the protective and beneficial associations of religious/spiritual community participation (73.3% ranked in the top 3); (3) recognize spirituality as a social factor associated with health in research, community assessments, and program implementation (66.7% ranked in the top 3).

An updated systematic review (April 2020 to April 2022) in serious illness resulted in 1460 original research articles. After applying eligibility criteria, 70 remained; 57 had low to moderate risk of bias. In health outcomes, 1536 articles were reviewed, resulting in 61 eligible articles; 32 had low to moderate risk of bias. Findings, summarized in eAppendixes 7A and 7B in the **Supplement**, corroborate the 2000-2020 evidence themes. Notable additions include an increasing proportion of research in serious illness among non-North American populations; 93 of 284 (32.7%) studies were from non-North American populations in 2000-2020, compared with 36 of 57 (63.2%) in 2020-2022 ( $P < .001$ ). Furthermore, some 2020-2022 research in serious illness and health outcomes addressed the role of spirituality during the COVID-19 pandemic.<sup>18-20</sup> Two studies conducted during the pandemic demonstrated frequent spiritual needs for cancer patients in India<sup>18</sup> and for COVID-19-positive patients in Turkey.<sup>19</sup> A UK cohort study of healthy adults<sup>20</sup> found that more frequent online religious/spiritual service attendance was associated with reduced thoughts of self-harm.

Table 1. Spirituality in Serious Illness Literature Summary

Evidence category	Studies with low to moderate risk of bias/total studies <sup>a</sup>	Continents or regions (No. of studies) <sup>a</sup>	Sample size, median (IQR) <sup>a</sup>	Spiritual measures (No. of studies) <sup>b,c</sup>	Summary of findings <sup>a,c</sup>
Role of spirituality in serious illness	128/173	North America (86); South America (1); Europe (14); Asia (19 [9 in Middle East, 10 in rest of Asia]); Africa (1); Australia (1); intercontinental (6)	278 (177–496)	FACT-SP (45); RCOPE Scale (16); Multidimensional Measure of Religiousness/Spirituality (9); Duke University Religion Index (6); Spiritual Well-being Scale (5); Idler Index of Religiosity (2); Spiritual Beliefs and Perspective Scale (2); Systems of Belief Inventory (2); meta-analysis, ie, multiple spirituality measures (2); other spirituality measures (75)	<ul style="list-style-type: none"> <li>Spirituality is important to most patients with serious illnesses, with 71% to 99% of seriously ill patients viewing spirituality as important.<sup>c</sup></li> <li>Measures of spirituality (eg, spiritual well-being, spiritual salience) are associated with better measures of quality of life in serious illness.</li> </ul>
Spiritual needs in serious illness	37/47	North America (22); South America (2); Europe (6); Asia (3 [1 in Middle East, 2 in rest of Asia]); Africa (3); intercontinental (1)	292 (170–600)	RCOPE Scale-NRC (10); Edmonton Symptom Assessment Scale–Spiritual Pain (7); Spiritual Needs Questionnaire (2); Spiritual Needs Assessment Tool (2); Spiritual Distress Assessment Tool (1); other spiritual needs measures (27); other spirituality measures: RCOPE Scale-PRC (7), FACT-SP (3), Duke University Religion Index (1)	<ul style="list-style-type: none"> <li>Spiritual needs are common in serious illness, with estimates of frequencies of patient spiritual needs ranging from 23% to 98%.<sup>c</sup></li> <li>Studies suggest that spiritual needs are associated with worse quality-of-life outcomes.</li> </ul>
Spiritual care in serious illness	82/112	North America (55); South America (1); Europe (10); Asia (11 [4 in Middle East, 7 in rest of Asia]); Africa (1); Australia (2); intercontinental (2)	356 (205–598)	Spiritual Care Provision and Receipt Questionnaire (8); Multidimensional Measure of Religiousness and Spirituality–Spiritual Care (7); other spiritual care measures (62); other spirituality measures: RCOPE Scale-PRC (4), RCOPE Scale-NRC (4), FACT-SP (2), Brief Multidimensional Measure of Religiousness and Spirituality (2)	<ul style="list-style-type: none"> <li>Spiritual care is frequently desired by patients in serious illness as part of medical care, with estimates ranging from 50% to 96% of patients wanting spiritual care.<sup>c</sup></li> <li>Spiritual needs are infrequently addressed in medical care of seriously ill patients, with patient-reported spiritual care from medical teams ranging from 9% to 51%.<sup>c</sup></li> <li>Interventions to improve spiritual care by medical teams show early evidence of associations with improved spiritual care provision.</li> </ul>
Spirituality and patient medical decision-making in serious illness	32/38	North America (26); Europe (2); Asia (2 [1 in Middle East, 1 in rest of Asia]); intercontinental (2)	317 (202–426)	Multidimensional Measure of Religiousness and Spirituality (11); RCOPE Scale-PRC (4); RCOPE Scale-NRC (4); Religious/Spiritual Beliefs in End-of-Life Care Scale (3); FACT-SP (2); Duke University Religion Scale (2); other spirituality measures (16)	<ul style="list-style-type: none"> <li>Spirituality can play a role in patient medical decision-making in serious illness.</li> </ul>
Spiritual interventions in serious illness	30/32	North America (20); Europe (1); Asia (2 [1 in Middle East, 2 in rest of Asia]); Africa (1); Australia (1); intercontinental (5)	196 (118–433)	FACT-SP (15); Spiritual Well-being Scale (4); McGill Quality of Life (4); meta-analyses, ie, multiple spirituality measures (3); Hopelessness Assessment in Illness (2); other spirituality measures (11)	<ul style="list-style-type: none"> <li>Spiritual interventions are associated with improved quality-of-life outcomes in seriously ill patients.</li> </ul>

Abbreviations: FACT-SP, Functional Assessment of Chronic Illness Therapy–Spiritual Well-being; NRC, Negative Religious Coping Subscale; PRC, Positive Religious Coping Subscale; RCOPE, Religious Coping Scale.

<sup>a</sup> Studies included were those meeting the eligibility criteria outlined in eAppendix 1A in the Supplement; risk-of-bias ratings were based on the modified Cochrane criteria outlined in eAppendix 2A of the Supplement. Only studies with low to moderate (vs serious or critical) risk of bias were included in the study detail columns. Studies could inform more than 1 of the 5 topic areas.

<sup>b</sup> Studies used 1 or more spirituality measures (see eAppendix 3A in the Supplement). Scale parameters are summarized in Seiman et al.<sup>14</sup>

<sup>c</sup> See eAppendix 3A in the Supplement for quantitative results of each study.

**Table 2. Spirituality in Health Outcomes Literature Summary**

Evidence category	Studies with low to moderate risk of bias/total studies <sup>a</sup>	Continents or regions (No. of studies) <sup>a</sup>	Study type <sup>a</sup>	Sample size, median (IQR) <sup>a</sup>	Spiritual measures (No. of studies) <sup>a,b</sup>	Outcome measures (No. of studies) <sup>a</sup>	Summary of findings <sup>a,c</sup>
All-cause mortality	26/32	North America (20); Asia (6 [1 in Middle East, 5 in East Asia])	Survival analysis (26)	11 453 (4421–28 794)	Service attendance (26); other measures (8), including importance	All-cause mortality	<ul style="list-style-type: none"> <li>All but 1 study identified a statistically significant and beneficial association between frequent religious service attendance and all-cause mortality. A meta-analysis of longitudinal studies indicated that service attendance was associated with reduction in all-cause mortality (hazard ratio, 0.73; 95% CI, 0.63–0.84).<sup>13</sup></li> <li>Some studies identified mediators and variation among subpopulations for this association, but findings varied.</li> <li>There were mixed beneficial and null findings when examining the association between other measures of spirituality and all-cause mortality.</li> </ul>
Physical health	21/32	North America (18); Asia (3 [1 in South Asia, 2 in East Asia])	Prospective cohort (11); survival analysis (8); RCT (2)	6323 (2642–59 408)	Service attendance (13); other measures (12), including prayer, spiritual coping, spiritual practice, etc; spiritual-enhanced intervention (2)	Cardiovascular outcomes and risk factors (18); cancer mortality (4); other health problems (5), including diabetes, obesity and lung function	<ul style="list-style-type: none"> <li>The associations between spirituality measures and physical health measures were mixed in all outcome categories. For example, among studies examining cardiovascular disease mortality, 3 found a significant beneficial association; 3 found a null association, and 1 found an inverse, harmful association.</li> <li>A majority of studies found a beneficial and significant association between spirituality and several measures of substance use, including use, recovery, and initiation.</li> <li>Similarly, spirituality appears to be associated with delayed sexual initiation and lower number of lifetime sexual partners, as well as increased physical activity.</li> </ul>
Health behaviors	42/66	North America (34); Australia (1); Europe (4); Asia (2 [1 in East Asia, 1 in Southeast Asia]); Central America (1)	Prospective cohort (42)	2903 (1738–7761)	Service attendance (20); composite (17); other measures (20), including importance, prayer, salience, etc	Substance use (39), including alcohol (21), smoking (20), marijuana and drug use (20); physical activity (2); sexual behaviors (6); use of preventive health care (1)	<ul style="list-style-type: none"> <li>77% of studies evaluating religious service attendance found a statistically significant, beneficial association with measures of depression. Other measures of spirituality had more mixed results.</li> <li>A meta-analysis of longitudinal studies with control for baseline confounding indicated that service attendance was associated with reduction in odds of depression incidence (odds ratio, 0.67; 95% CI, 0.58–0.81).<sup>16,17</sup></li> <li>Spiritual-enhanced interventions appeared to be associated with reduced depression outcomes.</li> <li>With fewer studies for identifying trends, other outcomes found mixed associations of spirituality on other mental health outcomes, with the strongest evidence for protective associations with suicide.</li> </ul>
Mental health	47/73	North America (29); Asia (6, all in East Asia); Australia/Western Pacific (2); Europe (6); Africa (1); intercontinental (3)	Prospective cohort (40); RCT (3); meta-analysis (2); survival analysis (2)	4785 (2530–10 588)	Service attendance (27); composite (10); other measures (21), including importance, prayer, practices, etc	Depression (32); suicidal behaviors (7); anxiety/stress (4); distress (3); posttraumatic stress disorder (2); eating disorders (2); general mental health (3)	<ul style="list-style-type: none"> <li>Most studies found a significant and beneficial association between spirituality and measures of well-being, quality of life, and life satisfaction.</li> <li>Similarly, most studies found significant and beneficial associations between spirituality and both physical and cognitive functioning.</li> </ul>
Quality of life	31/50	North America (21); Asia (5 [3 in East Asia, 1 in South Asia, 1 in Middle East]); Europe (4); intercontinental (1)	Prospective cohort (28); RCT (2); meta-analysis (1)	2548 (1135–4129)	Service attendance (21); other measures (16) including importance, practice, salience, etc; composite (3); spirituality-enhanced interventions (2)	Well-being, quality of life, and life satisfaction and components (17); self-rated health (3); physical functioning (5); cognitive functioning (6)	<ul style="list-style-type: none"> <li>Most studies found a significant and beneficial association between spirituality and measures of well-being, quality of life, and life satisfaction.</li> <li>Similarly, most studies found significant and beneficial associations between spirituality and both physical and cognitive functioning.</li> </ul>

Abbreviation: RCT, randomized clinical trial.

<sup>a</sup> Studies included were those meeting the eligibility criteria outlined in eAppendix 1B in the Supplement; risk-of-bias ratings were based on the modified Cochrane criteria outlined in eAppendix 2B of the Supplement. Only studies with low to moderate risk of bias (vs serious or critical) were included in the study detail columns. Studies could inform more than 1 of the 5 topic areas.

<sup>b</sup> Studies used 1 or more spirituality measures (see eAppendix 3B in the Supplement).

<sup>c</sup> See eAppendix 3B in the Supplement for quantitative results of each study.

**Table 3. Delphi Panel on Spirituality in Serious Illness (N = 13): Evidence Statements and Strength Ratings**

	Ratings by RAND/UCLA assessment of appropriateness score, No.									Descriptive statistics	IPRAS, agreement vs disagreement <sup>a</sup>	Met strength criteria <sup>b</sup>
	Inconclusive to weak evidence			Moderate evidence			Strong evidence					
	1	2	3	4	5	6	7	8	9	Median (IQR)		
Spirituality in serious illness evidence statements	1	2	3	4	5	6	7	8	9	Mean (SD)		
Religion and/or spirituality are important for most patients with serious illness.	0	0	0	0	0	0	4	6	3	7.9 (0.8)	Agreement	Yes
Spiritual needs are common for patients with serious illness.	0	0	0	1	0	0	0	9	3	7.9 (1.3)	Agreement	Yes
Spiritual care within medical care is frequently desired by seriously ill patients.	0	0	0	0	3	0	3	5	2	7.2 (1.4)	Agreement	Yes
Spiritual needs are frequently unaddressed within medical care for seriously ill patients.	0	0	0	0	3	1	2	5	2	7.2 (1.5)	Agreement	Yes
Religion/spirituality can play a role in medical decision-making for patients with serious illness.	0	0	0	1	0	1	6	5	0	7.1 (1.1)	Agreement	Yes
Spiritual care is infrequent in the medical care of patients with serious illness.	0	0	0	1	1	2	4	4	1	7 (6-8)	Agreement	Yes
Provision of spiritual care to patients with serious illness is associated with better end-of-life outcomes (eg, quality-of-life and medical care outcomes).	0	0	2	0	1	1	7	0	2	6.5 (1.6)	Agreement	Yes
Unaddressed spiritual needs are associated with poorer patient quality-of-life outcomes.	0	0	1	2	1	1	4	2	2	7 (5-8)	Agreement	Yes
Greater spirituality is associated with better quality of life in patients with serious illness.	0	0	2	1	1	1	3	4	1	7 (5-8)	Disagreement	No
Spiritual care interventions often improve quality of life for patients with serious illness.	1	1	0	1	0	3	5	2	0	5.8 (2.2)	Agreement	No
Religion and/or spirituality are more frequently important in serious illness for Black and Hispanic patients in the US compared with White patients.	0	0	1	0	4	2	3	3	0	6.2 (1.5)	Agreement	No
Interventions aiming to improve clinician-provided spiritual care show evidence of success.	1	0	1	0	4	5	2	0	0	5.2 (1.6)	Agreement	No

<sup>a</sup> An interpercentile range adjusted for symmetry (IPRAS) was used to assess rater agreement vs disagreement (see eAppendix 5 in the Supplement). The IPRAS is determined by the following equation:  $IPRAS = 2.35 + (\text{asymmetry index} \times 1.5)$ . Where the interpercentile range (IPR) of the data (from the 25th to the 75th percentile of ratings) is less than the IPRAS, raters are considered to be in agreement; where the IPR is greater than the IPRAS, raters are deemed in disagreement.

<sup>b</sup> Criteria for Delphi panel assessment of rating evidence as strong, and with agreement, are met when both (1) the median and mean ( $\geq 6.5$ ) fall within the strong evidence category and (2) the IPRAS indicates agreement.



Table 4. Delphi Panel on Spirituality and Health Outcomes (N = 15): Evidence Statements and Strength Ratings

Spirituality in health outcomes evidence statements	Ratings by RAND/UCLA assessment of appropriateness score, No.									Descriptive statistics	IPRAS, agreement vs disagreement <sup>a</sup>	Met strength criteria <sup>b</sup>	
	Inconclusive to weak evidence			Moderate evidence			Strong evidence						Median (IQR)
	1	2	3	4	5	6	7	8	9				
Frequent service attendance is associated with lower risk of mortality.	0	0	0	2	1	1	1	8	2	8 (6.5-8)	7.2 (1.7)	Agreement	Yes
Frequent service attendance is associated with subsequently less smoking and use of alcohol, marijuana, and illicit drugs among adults.	0	0	0	0	0	1	7	5	2	7 (7-8)	7.5 (0.8)	Agreement	Yes
Frequent service attendance is positively associated with subsequently higher quality of life (eg, well-being, life satisfaction, happiness, self-rated health).	0	0	0	2	2	2	4	3	2	7 (5.5-8)	6.7 (1.7)	Agreement	Yes
Frequent service attendance is associated with subsequently better mental health outcomes.	0	0	0	1	4	0	5	3	2	7 (5-8)	6.7 (1.6)	Agreement	Yes
There is a dose-response association between service attendance and lower risk of mortality, with larger magnitudes of associations with more frequent attendance.	0	0	0	1	5	0	3	4	2	7 (5-8)	6.7 (1.7)	Agreement	Yes
Frequent service attendance is associated with subsequently less smoking, risky sexual behaviors, and use of alcohol, marijuana, and illicit drugs among adolescents.	0	0	1	1	2	1	5	3	2	7 (5.5-8)	6.7 (1.8)	Agreement	Yes
Frequent service attendance is associated with fewer subsequent depressive symptoms.	0	1	0	1	0	4	5	4	0	7 (6-7.5)	6.5 (1.6)	Agreement	Yes
Frequent service attendance is associated with subsequently fewer suicidal behaviors.	0	0	1	2	1	3	2	5	1	7 (5.5-8)	6.5 (1.8)	Agreement	Yes
Using measures other than service attendance, religion and/or spirituality is associated with subsequently less smoking and use of alcohol, marijuana, and illicit drugs among adults.	0	0	3	1	1	1	5	3	1	7 (4.5-7.5)	6.1 (2.0)	Disagreement	No
Using measures other than service attendance, religion and/or spirituality is associated with subsequently less smoking, risky sexual behaviors, and use of alcohol, marijuana, and illicit drugs among adolescents.	0	0	3	0	2	3	5	1	1	6 (5-7)	5.9 (1.8)	Agreement	No
Using measures other than service attendance, religion and/or spirituality is positively associated with subsequently higher quality of life (eg, well-being, life satisfaction, happiness, and self-rated health).	0	0	1	2	5	0	3	4	0	5 (5-7.5)	5.9 (1.7)	Agreement	No
Using measures other than service attendance, religion and/or spirituality is associated with subsequently less anxiety.	0	2	1	3	2	0	5	2	0	5 (4-7)	5.3 (2.1)	Disagreement	No
Using measures other than service attendance, religion and/or spirituality is associated with subsequently fewer suicidal behaviors.	0	1	5	1	2	0	2	3	1	5 (3-7.5)	5.2 (2.4)	Disagreement	No
Frequent service attendance is associated with lower mortality due to cardiovascular disease.	0	0	3	2	5	3	0	1	1	5 (4-6)	5.1 (1.7)	Disagreement	No

(continued)

Table 4. Delphi Panel on Spirituality and Health Outcomes (N = 15): Evidence Statements and Strength Ratings (continued)

Spirituality in health outcomes statements	Ratings by RAND/UCLA assessment of appropriateness score, No.									Descriptive statistics	IPRAS, agreement vs disagreement <sup>a</sup>	Met strength criteria <sup>b</sup>	
	Inconclusive to weak evidence			Moderate evidence			Strong evidence						Median (IQR)
	1	2	3	4	5	6	7	8	9				
Frequent service attendance is associated with lower mortality due to cancer.	0	0	3	3	4	3	1	0	1	5 (4-6)	5.0 (1.6)	Disagreement	No
Frequent service attendance is associated with subsequently less cognitive decline in older adults.	1	2	1	2	2	2	1	4	0	5 (3.5-7.5)	5.1 (2.4)	Disagreement	No
Frequent service attendance is associated with subsequent development of fewer functional limitations (ADLs/IADLs) in older adults.	1	1	2	1	4	1	5	0	0	5 (3.5-7)	4.9 (2.0)	Disagreement	No
Frequent service attendance is associated with subsequently less anxiety.	0	4	1	0	4	1	3	2	0	5 (2.5-7)	4.9 (2.3)	Disagreement	No
Frequent service attendance is associated with having a healthier diet and doing more physical exercise.	0	2	2	2	5	2	1	0	1	5 (3.5-5.5)	4.7 (1.9)	Agreement	No
Frequent service attendance is associated with subsequently fewer PTSD symptoms.	2	0	1	2	4	4	2	0	0	5 (4-6)	4.7 (1.9)	Agreement	No
Using measures other than service attendance, religion and/or spirituality is associated with subsequently better mental health outcomes.	1	2	2	2	2	2	2	2	0	5 (3-6.5)	4.7 (2.3)	Disagreement	No
Using measures other than service attendance, religion and/or spirituality is associated with subsequently fewer PTSD symptoms.	1	2	0	4	4	0	4	0	0	5 (4-6)	4.6 (1.9)	Disagreement	No
There is little or no association between service attendance and other religious/spiritual measures with the incidence of physical disease.	1	2	2	1	5	2	2	0	0	5 (3-5.5)	4.4 (1.8)	Agreement	No
Using measures other than service attendance, religion and/or spirituality is associated with having a healthier diet and doing more physical exercise.	1	3	1	2	5	1	1	1	0	5 (2.5-5)	4.3 (2.0)	Agreement	No
Using measures other than service attendance, religion and/or spirituality is associated with having a healthier diet and doing more physical exercise.	0	1	2	5	1	2	3	1	0	4 (4-6.5)	4.9 (1.8)	Disagreement	No
There is an association between other measures of religion/spirituality (not service attendance) and lower risk of mortality.	0	3	3	3	1	2	3	0	0	4 (3-5.5)	4.3 (1.8)	Agreement	No
Using measures other than service attendance, religion and/or spirituality is associated with subsequently less cognitive decline in older adults.	2	4	1	3	2	1	1	1	0	4 (2-5)	3.7 (2.2)	Agreement	No
Using measures other than service attendance, religion and/or spirituality is associated with subsequent development of fewer functional limitations (ADLs/IADLs) in older adults.	3	3	2	2	1	1	3	0	0	3 (2-5.5)	3.7 (2.3)	Disagreement	No

Abbreviations: ADL, activities of daily living; IADL, instrumental activities of daily living; PTSD, posttraumatic stress disorder.

<sup>a</sup> An interpercentile range adjusted for symmetry (IPRAS) was used to assess rater agreement vs disagreement (see eAppendix 5 in the Supplement). The IPRAS is determined by the following equation: IPRAS = 2.35 + (asymmetry index × 1.5). Where the interpercentile range (IPR) of the data (from the 25th to the 75th percentile

of ratings) is less than the IPRAS, raters are considered to be in agreement; where the IPR is greater than the IPRAS, raters are deemed in disagreement.

<sup>b</sup> Criteria for Delphi panel assessment of rating evidence as strong, and with agreement, are met when both (1) the median and mean (≥6.5) fall within the strong evidence category and (2) the IPRAS indicates agreement.

**Table 5. Spirituality in Health: Multidisciplinary Delphi Expert Panel 3 Top-Ranked Suggested Implications for Serious Illness and Health Outcomes<sup>a</sup>**

Ranking of suggested implication	Suggested implication	
	Serious illness	Health outcomes
Highest ranking	Routinely incorporate spiritual care into the medical care of patients with serious illness.	Incorporate patient-centered and evidence-based approaches regarding the beneficial associations of religious/spiritual community participation to improve medical care and population health.
Second highest ranking	Include spiritual care education in the training of all members of the interdisciplinary medical team caring for seriously ill patients.	Increase awareness among public health professionals of evidence of protective health associations of religious/spiritual community participation.
Third highest ranking	Include specialty practitioners of spiritual care (eg, chaplains) in the care of patients with serious illness.	Recognize spirituality as a social factor associated with health in research, community assessments, and program implementation.

<sup>a</sup> The full lists of ranked suggested implications are available in eAppendixes 6A and 6B in the [Supplement](#).

## Discussion

This study synthesized evidence over the past 2 decades regarding spirituality in serious illness and health outcomes and provided suggested implications for health care. Based on a systematic review of the highest-quality studies available, a Delphi panel of experts supported 16 evidence statements (8 each for serious illness and health outcomes) and determined 3 top-ranked suggested implications in each area.

### Spirituality in Serious Illness: Evidence and Suggested Implications

The serious illness Delphi expert panel review identified 8 findings, as enumerated: (1) spirituality is important to most patients with serious illness (eg, literature estimates ranged from 71%-99%); (2) spiritual needs are common in that setting (eg, estimates ranged from 23%-98%); (3) spiritual care is frequently desired by patients with serious illness (eg, estimates ranged from 50%-96%); and (4) spirituality can influence medical decision-making in serious illness. Despite these findings, (5) spiritual needs of patients with serious illness are frequently unaddressed within medical care, especially since (6) spiritual care is infrequent in the care of such patients (eg, estimates of patients not receiving spiritual care ranged from 49%-91%). Findings noted that (7) the provision of spiritual care in the medical care of patients with serious illness was associated with better end-of-life outcomes, while (8) unaddressed spiritual needs can be associated with poorer patient quality of life.

These findings prompted the Delphi panel to set forth the standard inclusion of spiritual care as its top-rank suggested implication in serious illness. Doing so could improve the quality of life of patients<sup>21</sup> and their families<sup>22</sup> and may also influence medical decision-making to advance patient-centered care.<sup>21</sup> Conversely, although patient spirituality is often associated with better quality of life among patients with serious illness, unmet spiritual needs are also frequent in this setting and can be associated with reduced patient well-being.<sup>23</sup> Raising issues of spirituality can also be a source of distress in serious illness. For example, a patient who has experienced past spiritual harms—such as rejection from spiritual community—may experience the resurfacing of past harms or distress related to spirituality as they face serious illness. Attention to both the positive and negative associations of spirituality can shape person-centered, quality-of-life-focused care in serious illness.

This suggested implication is consistent with guidelines of the National Consensus Project for Quality Palliative Care,<sup>24</sup> the qual-

ity standard-setting body for specialty palliative care. Since the standard inclusion of spiritual care may be of greatest benefit for those who particularly value spirituality,<sup>25</sup> including patients from under-represented racial and ethnic groups and older patients,<sup>3</sup> such care could serve as a potential mechanism to help address health care disparities for patients with high disease burdens. Nonetheless, the infrequency of spiritual care for patients with serious illness<sup>26</sup> reflects, at least in part, the lack of attention to patient spirituality by care team members. In a generalist-specialist model for multidisciplinary care, spiritual care<sup>1,8</sup> involves clinicians carrying out initial screenings through a short (<2 minutes) spiritual history<sup>27,28</sup>; this can lead to referrals to a spiritual care specialist, as needed. Such screening is often omitted, perhaps because clinicians do not have time, do not consider attention to spiritual needs as their responsibility, or are uncomfortable discussing spirituality with patients.<sup>29</sup> However, simple spiritual history questions such as “Are spirituality or faith important to you in thinking about your health and illness?” and “Do you have, or would you like to have, someone to talk to about spiritual or faith matters?” signal respect for patient spirituality, are not time consuming, and do not require patients and clinicians to have similar views on spirituality.<sup>30</sup>

The second highest-ranked suggested implication is that all members of the multidisciplinary care team should receive training in spiritual care provision. Achieving competence in history taking in accordance with the generalist-specialist model<sup>1,8</sup> requires only time-limited training and resources; guides for integrating validated spiritual history tools are readily available for clinicians.<sup>31-33</sup> Although spiritual care training is one of the strongest predictors of subsequent provision of spiritual care, most clinicians report having never received it.<sup>29</sup> Medical schools have increasingly integrated brief education in spirituality at least as electives within curricula.<sup>34</sup> Instruction, reinforcement, or both, of spiritual care skills during clinical training and continuing education, through short 1- or 2-session spiritual care or spiritual history training modules, could readily advance care provision. Studies (Table 1) suggest that training interventions could help standardize spiritual care, such as spiritual history taking.<sup>35</sup>

The Delphi panel's third highest-ranked suggested implication highlights the need to involve spiritual care professionals (eg, chaplains) in the care of patients with serious illness. Such professionals, trained to address spiritual needs in a manner sensitive to the patient's particular spirituality—ranging from “spiritual, not religious” to myriad religious traditions—can administer more in-depth spiritual assessments and interventions and also serve as a liaison, as necessary, to patients' spiritual communities. Although further study is needed, the extant data highlight that their involvement is

associated with improved patient quality of life<sup>21</sup> and family satisfaction with medical care.<sup>22</sup>

### Spirituality and Health Outcomes: Evidence and Suggested Implications

The Delphi panel review of spirituality and health outcome evidence yielded 8 evidence statements supported by the data, as enumerated: (1) frequent service attendance was associated with lower risk of mortality, with a (2) dose-response association between attendance and lower risk of mortality. Additionally, frequent attendance was associated with (3) less smoking and less alcohol, marijuana, and illicit drug use compared with adults with less frequent or no attendance; (4) better measures of quality of life (eg, life satisfaction); (5) better mental health; (6) fewer depressive symptoms; and (7) fewer suicidal behaviors. Furthermore, (8) among adolescents, frequent attendance was associated with less risky sexual behaviors, less smoking, and reduced use of alcohol, marijuana, and illicit drugs.

The evidence synthesized related to health outcomes addressed how an array of aspects of spirituality, ranging from community involvement to prayer, might be related to health outcomes. Of all the measures of spirituality (eg, frequency of prayer, spiritual salience), a prominent theme was the consistent association of frequency of service attendance with beneficial prospective outcomes, such as all-cause mortality risk (27% reduction in longitudinal meta-analysis<sup>15</sup>), depression incidence (33% reduction in odds in longitudinal meta-analysis<sup>16,17</sup>), lower suicide risk, and less substance use. This theme suggests that among relatively healthy populations, the community elements of spirituality relate to health most measurably,<sup>36</sup> although other factors may be involved.<sup>37</sup> This salient role of religious/spiritual communities in health is notable given a 2021 Gallup poll<sup>4</sup> demonstrating declines in community affiliation and attendance over time, including during the COVID-19 pandemic. Further study of nontraditional forms of spiritual community and other aspects of spirituality merit attention.

Based on this evidence, the Delphi panel's top-ranked suggested implication for health outcomes was that health care professionals recognize and consider the benefits of spiritual community as a part of efforts to improve well-being. For example, a primary care clinician might, after taking a spiritual history, raise the topic of spiritual community engagement for patients who already positively self-identify as spiritual or religious.<sup>30</sup> However, this consideration needs to be highly individualized and delivered with respect for each person's values and beliefs. For patients who may have experienced harm by a spiritual community, a spiritual history may help uncover distress that should be addressed through counseling and appropriate referrals to specialists. For patients who do not identify with a religious/spiritual tradition, other forms of community involvement could be suggested.

The panel's second highest-ranked suggested implication was for education of public health professionals and students regarding spirituality and health outcomes, especially given the evidence concerning community participation in health and the frequency of such participation in the US and many other countries. Training, which could take many forms, could involve incorporating discussion of the role of spirituality and spiritual communities into curricula at universities and other institutions. Despite developments in recent years,<sup>38</sup> many educational programs do not address the topic.

The Delphi panel's third highest-ranked suggested implication was to recognize spirituality as a social factor associated with health<sup>39</sup>—joining other social factors such as social integration, healthy work conditions, economic supports, protection from discrimination, access to healthy foods, and safe environments. Although it is not possible to reach causal conclusions regarding associations between spiritual engagement and health outcomes, sufficiently strong unmeasured confounding to negate the associations seems unlikely. For example, prior sensitivity analysis<sup>30,40</sup> suggested that to shift the meta-analytic estimate for all-cause mortality to a hazard ratio of 1,<sup>15</sup> an unmeasured confounder associated with both attendance and reduced mortality by risk ratios of 2.08-fold each, above and beyond the measured covariates, could suffice,<sup>30</sup> but weaker joint confounder associations could not; and to shift the confidence interval for the estimate to include no association, unmeasured confounding risk ratios for attendance and reduced mortality of 1.67-fold each could suffice, but weaker confounder associations could not.<sup>30</sup> Similarly strong unmeasured confounding would be needed to attenuate the meta-analytic estimate, or confidence interval, for the association of attendance with depression to an odds ratio of 1.<sup>17,30</sup> For these reasons, spirituality might reasonably be recognized as a potentially important social factor associated with health, opening collaborations leveraging the strengths of spiritual communities in addressing health needs, particularly for the communities most vulnerable and at risk of chronic health challenges.<sup>41</sup>

The updated literature from 2020-2022 in serious illness and health outcomes underscore the 2000-2020 findings. The increase in studies within non-North American populations provides increasing support for the role of spirituality in illness within diverse cultural settings. In addition, although the few studies of spirituality in COVID-19 suggest that spirituality may have had some similar roles in the pandemic as in other illnesses and health settings, data are insufficient and further study is needed to characterize the role of spirituality in the COVID-19 global health crisis.

These suggested implications for serious illness and health outcomes could aid in furthering the National Academy of Medicine's goals for improving health care quality in the 21st century, calling for more attention to patients' values, often shaped by spiritual views, in health care.<sup>9</sup> While research and ethical reflection is needed to determine their practical application in clinical and other health settings, these suggested implications suggest a potential to improve well-being for patients and other populations, including vulnerable groups and those with the highest burden of disease.<sup>41</sup> Furthermore, potential implications may apply to a range of important outcomes including overall mortality, quality of life, mental health, and substance use. However, attention to matters of spirituality in health care should be individualized, patient-centered, and respectful of beliefs and preferences.

Further research should explore the dimensions of and mechanisms by which spirituality may influence health and well-being. Moreover, standardized measures are needed to move the field toward more consistent, multidimensional assessment of spirituality, a shift that requires multidisciplinary insights. Additionally, research must inform best practices, as well as potential harms, to ensure optimal person- and community-centered attention to spiritual health.

## Limitations

This study has several limitations. First, as evidenced in the definitions (Box), spirituality is a multidimensional construct with dimensions that are variably assessed across studies, complicating comparability among findings. Second, the methods in some studies addressed some, but not all, aspects of the relationship between spirituality and health, leaving unanswered questions about potential mechanisms of action. Third, studies that addressed the role of spiritual communities in providing health care and promoting health were largely excluded from this review because they were not large, population based, or prospective. Fourth, most of the studies in this review were based on observational data and few were randomized trials,

typically because such trials are not feasible or ethical. Fifth, the weight of evidence was largely driven by North American samples, although studies from other areas were included and growing cultural diversity of the evidence is demonstrated in the updated literature.

## Conclusions

This systematic review, analysis, and process, based on highest-quality evidence available and expert consensus, provided suggested implications for addressing spirituality in serious illness and health outcomes as part of person-centered, value-sensitive care.

### ARTICLE INFORMATION

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**Correction:** This article was corrected on August 23, 2022, for an author affiliation.

**Author Affiliations:** Departments of Radiation Oncology and Psychosocial Oncology and Palliative Care, Brigham and Women's Hospital, Dana-Farber Cancer Institute, Boston, Massachusetts (Balboni); Harvard Medical School, Boston, Massachusetts (Balboni, Bain); Departments of Epidemiology and Biostatistics, Harvard T.H. Chan School of Public Health, Boston, Massachusetts (VanderWeele, Long); Human Flourishing Program, Institute for Quantitative Social Science, Harvard University, Cambridge, Massachusetts (VanderWeele, Long); Department of Health Policy and Management, Harvard T.H. Chan School of Public Health, Boston, Massachusetts (Doan-Soares, Koh); Division of Nursing Research and Education, Department of Population Sciences, City of Hope, Duarte, California (Ferrell); Department of Religion, Health, and Human Values, Rush University Medical Center, Chicago, Illinois (Fitchett); Departments of Psychiatry and Behavioral Sciences and Medicine, Duke University Medical Center, Duke University, Durham, North Carolina (Koenig); Department of Medicine, King Abdulaziz University, Jeddah, Saudi Arabia (Koenig); The George Washington Institute for Spirituality and Health, Departments of Medicine and Health Care Sciences, George Washington University, Washington, DC (Puchalski); Division of Palliative Medicine, Department of Medicine, Duke University Medical Center, Duke University, Durham, North Carolina (Steinhauser); Center of Innovation to Accelerate Discovery and Practice Transformation, Durham VA Health Care System, Durham, North Carolina (Steinhauser); Kennedy Institute of Ethics, Departments of Medicine and Philosophy and the Pellegrino Center for Clinical Bioethics, Georgetown University, Washington, DC (Sulmasy); John F. Kennedy School of Government, Harvard University, Boston, Massachusetts (Koh).

**Author Contributions:** Dr Balboni had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

**Concept and design:** Balboni, VanderWeele, Ferrell, Koenig, Bain, Puchalski, Koh.

**Acquisition, analysis, or interpretation of data:** Balboni, VanderWeele, Doan-Soares, Long, Fitchett, Koenig, Bain, Puchalski, Steinhauser, Sulmasy.

**Drafting of the manuscript:** Balboni, VanderWeele, Doan-Soares, Koenig, Steinhauser, Koh.

**Critical revision of the manuscript for important**

**intellectual content:** Balboni, VanderWeele, Doan-Soares, Long, Ferrell, Fitchett, Koenig, Bain, Puchalski, Sulmasy, Koh.

**Statistical analysis:** Balboni, VanderWeele, Doan-Soares, Ferrell.

**Administrative, technical, or material support:** Balboni, Doan-Soares, Long.

**Supervision:** Balboni, VanderWeele, Doan-Soares, Koenig, Koh.

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### REFERENCES

- Puchalski CM, Vitillo R, Hull SK, Reller N. Improving the spiritual dimension of whole person care: reaching national and international consensus. *J Palliat Med*. 2014;17(6):642-656. doi:10.1089/jpm.2014.9427
- Ferngren GB. *Medicine and Religion: A Historical Introduction*. Johns Hopkins University Press; 2014.
- Pew Research Center. Religious Landscape Study. Accessed August 4, 2021. <https://www.pewforum.org/religious-landscape-study>
- Gallup. How religious are Americans? Published December 23, 2021. Accessed February 4, 2022. <https://news.gallup.com/poll/358364/religious-americans.aspx>
- Oman D. Defining religion and spirituality. In: Paloutzian RF, Park CL, eds. *Handbook of the Psychology of Religion and Spirituality*. Guilford Press; 2013:23-47.
- Hill PC, Pargament KI, Hood RW Jr, et al. Conceptualizing religion and spirituality: points of commonality, points of departure. *J Theory Soc Behav*. 2000;30(1):51-77. doi:10.1111/1468-5914.00119
- Bussing A, ed. *Spiritual Needs in Research and Practice: The Spiritual Needs Questionnaire as a Resource for Health and Social Care*. Palgrave MacMillan; 2021:1-5. doi:10.1007/978-3-030-70139-0
- Puchalski C, Ferrell B, Virani R, et al. Improving the quality of spiritual care as a dimension of palliative care: the report of the Consensus

- Conference. *J Palliat Med*. 2009;12(10):885-904. doi:10.1089/jpm.2009.0142
9. Institute of Medicine Committee on Quality of Health Care in America. *Crossing the Quality Chasm: A New Health System for the 21st Century*. National Academies Press; 2001.
10. Fitch K, Bernstein SJ, Aguilar MD, et al. *The RAND/UCLA Appropriateness Method User's Manual*. RAND Corp; 2001.
11. Sterne JAC, Hernan MA, McAleenan A, Reeves BC, Higgins JPT. Assessing risk of bias in a non-randomized study. In: Higgins JPT, Thomas J, Chandler J, et al, eds. *Cochrane Handbook for Systematic Reviews of Interventions Version 6.2*. Cochrane; February 2021:chap 25. <http://www.training.cochrane.org/handbook/>
12. Murphy MK, Black NA, Lamping DL, et al. Consensus development methods, and their use in clinical guideline development. *Health Technol Assess*. 1998;2(3):i-iv, 1-88. doi:10.3310/hta2030
13. Malterud K. Qualitative research: standards, challenges, and guidelines. *Lancet*. 2001;358(9280):483-488. doi:10.1016/S0140-6736(01)05627-6
14. Selman L, Harding R, Gysels M, Speck P, Higginson IJ. The measurement of spirituality in palliative care and the content of tools validated cross-culturally: a systematic review. *J Pain Symptom Manage*. 2011;41(4):728-753. doi:10.1016/j.jpainsymman.2010.06.023
15. Chida Y, Steptoe A, Powell LH. Religiosity/spirituality and mortality: a systematic quantitative review. *Psychother Psychosom*. 2009;78(2):81-90. doi:10.1159/000190791
16. Garssen B, Visser A, Pool G. Does spirituality or religion positively affect mental health? meta-analysis of longitudinal studies. *Int J Psychol Relig*. 2021;31(1):4-20. doi:10.1080/10508619.2020.1729570
17. VanderWeele TJ. Effects of religious service attendance and religious importance on depression: examining the meta-analytic evidence. *Int J Psychol Relig*. 2021;31(1):21-26. doi:10.1080/10508619.2020.1748932
18. Mishra S, Gupta R, Bhatnagar S, et al. The COVID-19 pandemic: a new epoch and fresh challenges for cancer patients and caregivers—a descriptive cross-sectional study. *Support Care Cancer*. 2022;30(2):1547-1555. doi:10.1007/s00520-021-06564-4
19. Şahan S, Yıldız A. Determining the spiritual care requirements and death anxiety levels of patients diagnosed with COVID-19 in Turkey. *J Relig Health*. 2022;61(1):786-797. doi:10.1007/s10943-021-01454-9
20. Shiba K, Cowden RG, Gonzalez N, et al. Associations of online religious participation during COVID-19 lockdown with subsequent health and well-being among UK adults. *Psychol Med*. Published online February 22, 2022. doi:10.1017/S0033291722000551
21. Balboni TA, Paulk ME, Balboni MJ, et al. Provision of spiritual care to patients with advanced cancer: associations with medical care and quality of life near death. *J Clin Oncol*. 2010;28(3):445-452. doi:10.1200/JCO.2009.24.8005
22. Johnson JR, Engelberg RA, Nielsen EL, et al. The association of spiritual care providers' activities with family members' satisfaction with care after a death in the ICU. *Crit Care Med*. 2014;42(9):1991-2000. doi:10.1097/CCM.0000000000000412
23. Delgado-Guay MO, Chisholm G, Williams J, Frisbee-Hume S, Ferguson AO, Bruera E. Frequency, intensity, and correlates of spiritual pain in advanced cancer patients assessed in a supportive/palliative care clinic. *Palliat Support Care*. 2016;14(4):341-348. doi:10.1017/S147895151500108X
24. National Consensus Project for Quality Palliative Care. *Clinical Practice Guidelines for Quality Palliative Care, 4th Edition*. Published 2018. Accessed July 20, 2021. <https://www.nationalcoalitionhpc.org/ncpl/>
25. Balboni TA, Balboni M, Enzinger AC, et al. Provision of spiritual support to patients with advanced cancer by religious communities and associations with medical care at the end of life. *JAMA Intern Med*. 2013;173(12):1109-1117. doi:10.1001/jamainternmed.2013.903
26. Balboni TA, Vanderwerker LC, Block SD, et al. Religiousness and spiritual support among advanced cancer patients and associations with end-of-life treatment preferences and quality of life. *J Clin Oncol*. 2007;25(5):555-560. doi:10.1200/JCO.2006.07.9046
27. Puchalski C, Romer AL. Taking a spiritual history allows clinicians to understand patients more fully. *J Palliat Med*. 2000;3(1):129-137. doi:10.1089/jpm.2000.3.129
28. Koenig HG. Religion, spirituality, and medicine: application to clinical practice. *JAMA*. 2000;284(13):1708. doi:10.1001/jama.284.13.1708-JMS1004-5-1
29. Balboni MJ, Sullivan A, Enzinger AC, et al. Nurse and physician barriers to spiritual care provision at the end of life. *J Pain Symptom Manage*. 2014;48(3):400-410. doi:10.1016/j.jpainsymman.2013.09.020
30. VanderWeele TJ, Balboni TA, Koh HK. Religious service attendance and implications for clinical care, community participation, and public health. *Am J Epidemiol*. 2022;191(1):31-35. doi:10.1093/aje/kwab134
31. Puchalski CM. The FICA Spiritual History Tool #274. *J Palliat Med*. 2014;17(1):105-106. doi:10.1089/jpm.2013.9458
32. Puchalski C, Jafari N, Buller H, Haythorn T, Jacobs C, Ferrell B. Interprofessional spiritual care education curriculum: a milestone toward the provision of spiritual care. *J Palliat Med*. 2020;23(6):777-784. doi:10.1089/jpm.2019.0375
33. Sulmasy DP. Spiritual issues in the care of dying patients: "...it's okay between me and God". *JAMA*. 2006;296(11):1385-1392. doi:10.1001/jama.296.11.1385
34. Koenig HG, Hooten EG, Lindsay-Calkins E, Meador KG. Spirituality in medical school curricula: findings from a national survey. *Int J Psychiatry Med*. 2010;40(4):391-398. doi:10.2190/PM.40.4.c
35. Koenig HG, Perno K, Erkanli A, Hamilton T. Effects of a 12-month educational intervention on clinicians' attitudes/practices regarding the screening spiritual history. *South Med J*. 2017;110(6):412-418. doi:10.14423/SMJ.0000000000000657
36. VanderWeele TJ. Religion and health: a synthesis. In: Balboni MJ, Peteet JR, eds. *Spirituality and Religion Within the Culture of Medicine: From Evidence to Practice*. Oxford University Press; 2017:357-401.
37. Koenig H, Koenig HG, King D, Carson VB. *Handbook of Religion and Health*. Oxford University Press; 2012.
38. Oman D, ed. *Why Religion and Spirituality Matter for Public Health: Evidence, Implications, and Resources*. Springer; 2018. doi:10.1007/978-3-319-73966-3
39. Idler EL, ed. *Religion as a Social Determinant of Public Health*. Oxford University Press; 2014. doi:10.1093/acprof:oso/9780199362202.001.0001
40. Haneuse S, VanderWeele TJ, Arterburn D. Using the E-value to assess the potential effect of unmeasured confounding in observational studies. *JAMA*. 2019;321(6):602-603. doi:10.1001/jama.2018.21554
41. United Health Foundation. *Health Disparities Report 2021*. Published 2021. Accessed June 16, 2022. [https://assets.americashealthrankings.org/app/uploads/2021\\_ahr\\_health-disparities-comprehensive-report\\_final.pdf](https://assets.americashealthrankings.org/app/uploads/2021_ahr_health-disparities-comprehensive-report_final.pdf)