

## Religious Involvement, Spirituality, and Medicine: Implications for Clinical Practice

PAUL S. MUELLER, MD; DAVID J. PLEVAK, MD; AND TERESA A. RUMMANS, MD

Surveys suggest that most patients have a spiritual life and regard their spiritual health and physical health as equally important. Furthermore, people may have greater spiritual needs during illness. We reviewed published studies, meta-analyses, systematic reviews, and subject reviews that examined the association between religious involvement and spirituality and physical health, mental health, health-related quality of life, and other health outcomes. We also reviewed articles that provided suggestions on how clinicians might assess and support the spiritual needs of patients. Most studies have shown that religious involvement and spirituality are associated with better health outcomes, including greater longevity, coping skills, and health-related quality of life (even during terminal illness) and less anxiety, depression, and suicide. Several stud-

ies have shown that addressing the spiritual needs of the patient may enhance recovery from illness. Discerning, acknowledging, and supporting the spiritual needs of patients can be done in a straightforward and noncontroversial manner. Furthermore, many sources of spiritual care (eg, chaplains) are available to clinicians to address the spiritual needs of patients.

*Mayo Clin Proc.* 2001;76:1225-1235

AA = Alcoholics Anonymous; CBT = cognitive-behavioral therapy; CHD = coronary heart disease; CI = confidence interval; HIV = human immunodeficiency virus; HRQOL = health-related quality of life; OR = odds ratio; TSF = 12-step facilitation

When people consult physicians to determine the cause and treatment of an illness, they may also seek answers to existential questions that medical science cannot answer (eg, “Why is this illness happening to me?”).<sup>1</sup> Many patients rely on a religious or spiritual framework and call on religious or spiritual care providers to help answer these questions. Indeed, throughout history, religion and spirituality and the practice of medicine have been intertwined. As a result, many religions embrace caring for the sick as a primary mission, and many of the world’s leading medical institutions have religious and spiritual roots.

The word *religion* is from the Latin *religare*, which means “to bind together.”<sup>2</sup> A religion organizes the collective spiritual experiences of a group of people into a system of beliefs and practices. *Religious involvement* or *religiosity* refers to the degree of participation in or adherence to the beliefs and practices of an organized religion. *Spirituality* is from the Latin *spiritualitas*, which means “breath.”<sup>2</sup> It is a broader concept than religion and is primarily a dynamic, personal, and experiential process. Features of spirituality include quest for meaning and purpose, transcen-

dence (ie, the sense that being human is more than simple material existence), connectedness (eg, with others, nature, or the divine), and values (eg, love, compassion, and justice).<sup>3</sup> Even though some people who regard themselves as spiritual do not endorse a formal religion, religious involvement and spirituality are overlapping concepts.<sup>4</sup> Experientially, both may involve a search for meaning and purpose, transcendence, connectedness, and values. In this light, religious involvement is similar to spirituality. Spirituality may also have communal or group expression; when this expression is formalized, spirituality is more like an organized religion.<sup>5</sup> Because of this overlap, religious involvement and spirituality are considered together in this article.

**For editorial comment, see page 1189.**

Religion and spirituality are among the most important cultural factors that give structure and meaning to human values, behaviors, and experiences.<sup>6</sup> In fact, most people report having a spiritual life. Surveys of the general population<sup>7</sup> and of patients<sup>8,9</sup> have consistently found that more than 90% of people believe in a Higher Being. Another survey<sup>8</sup> found that 94% of patients regard their spiritual health and their physical health as equally important. Most patients want their spiritual needs met and would welcome an inquiry regarding their religious and spiritual needs.<sup>8,10,11</sup> Finally, a survey of family physicians found that 96% believe spiritual well-being is an important factor in

From the Division of General Internal Medicine (P.S.M.), Department of Anesthesiology (D.J.P.), and Section of Adult Psychiatry (T.A.R.), Mayo Clinic, Rochester, Minn.

Address reprint requests and correspondence to Paul S. Mueller, MD, Division of General Internal Medicine, Mayo Clinic, 200 First St SW, Rochester, MN 55905.

health.<sup>12</sup> Despite these findings, the spiritual needs of patients are often ignored or not satisfied<sup>8,9,13</sup> (unpublished data, Mayo Patient Expectations Survey, 1994).

Physician interest in patient spirituality has increased because of a growing number of studies that have shown an association between increased religious involvement and spirituality and better health outcomes.<sup>14</sup> In this article, we review these studies and provide suggestions on how clinicians may assess and support the spiritual needs of patients.

## METHODS

We reviewed published studies, meta-analyses, systematic reviews, and subject reviews that examined the association between religious involvement and spirituality and physical health, mental health, health-related quality of life (HRQOL), and other outcomes. Studies selected used validated measures of religious involvement (eg, attendance at religious services) and spirituality (eg, scales of spiritual well-being) and statistical testing for significance. In addition, we reviewed articles that provided suggestions on how clinicians might ethically assess and support the spiritual needs of patients. Relevant articles were identified by conducting a MEDLINE search (1970-2000) and by using the following search terms: *religion*, *religiosity*, and *spirituality* each alone and each with *epidemiology*, *mortality*, *cardiovascular disease*, *cancer*, *depression*, *anxiety*, *substance abuse*, *suicide*, *coping*, and *quality of life*. The reference lists of identified articles were also reviewed for additional relevant studies, articles, textbooks, annotated bibliographies, and other sources.

## USE OF RELIGIOUS AND SPIRITUAL VARIABLES IN MEDICAL RESEARCH

Religious and spiritual variables are not widely used in medical research. For example, a review<sup>15</sup> of 2348 studies published in 4 major psychiatry journals between 1978 and 1982 revealed that only 59 (2.5%) used a religious or spiritual variable. A later review<sup>16</sup> of the same journals for 1991 to 1995 revealed that only 1.2% of studies used such a variable. Similar reviews have shown that only 3.5% of family practice studies,<sup>17</sup> 1.1% of internal medicine studies,<sup>18</sup> 11.8% of adolescent health studies,<sup>19</sup> 10% of nursing mental health studies,<sup>20</sup> and 3.6% of gerontology studies<sup>21</sup> used religious or spiritual variables. Neglect of religious and spiritual variables in medical research may be due, in part, to the reliance on the biomedical model in which physical evidence is paramount. While the biomedical model is excellent for describing certain disease mechanisms (eg, viral illnesses), it is reductionistic and has difficulty accounting for psychological, sociological, and spiritual factors that influence most, if not all, illnesses.<sup>22</sup>

Of the studies that have considered the effects of religious or spiritual factors on health, most have used measures of religious involvement (eg, frequency of attendance at religious services and scales of religiosity), not measures of spirituality. The main reason for this practice is the greater consensus on how to define and measure religious involvement as opposed to spirituality.

## RELIGIOUS INVOLVEMENT, SPIRITUALITY, AND PHYSICAL HEALTH

A majority of the nearly 350 studies of physical health and 850 studies of mental health that have used religious and spiritual variables have found that religious involvement and spirituality are associated with better health outcomes.<sup>23</sup>

## Mortality

During the past 3 decades, at least 18 prospective studies have shown that religiously involved persons live longer.<sup>24-41</sup> The populations examined in these studies include not only entire communities but also specific groups. The religious and spiritual variables used in these studies include membership in a religious congregation,<sup>27,29,32</sup> attendance at religious services,<sup>24-26,28,30,31,33,34,36-40</sup> living within a religious community,<sup>35</sup> and self-reported religiosity.<sup>41</sup> One study<sup>42</sup> of hospitalized veterans, however, found no relationship between religious involvement, religious coping, and mortality.

Recent prospective studies have carefully controlled for potential confounding variables.<sup>43</sup> A 28-year study<sup>36</sup> of 5286 adults (age, 21-65 years) found that frequent ( $\geq$ once a week) attenders of religious services were 23% less likely than nonattenders to die during the follow-up period (relative hazard, 0.77 [95% confidence interval (CI), 0.64-0.93]) adjusted for age, sex, ethnicity, education, baseline health status, body mass index, health practices, and social connections. Notably, this study also found that mobility-impaired persons were more likely to be frequent attenders than nonattenders. A 5-year study<sup>37</sup> examined the same relationship in 1931 adults (age,  $\geq$ 55 years). Frequent attenders were 24% less likely to die than nonattenders during the follow-up period (relative hazard, 0.76 [95% CI, 0.62-0.94]) adjusted for age, sex, marital status, income, education, employment status, ethnicity, baseline health status, physical functioning, health habits (eg, exercise, smoking), social functioning and support, and mental health status. A 6-year study<sup>40</sup> examined the same relationship in 3968 adults (age,  $\geq$ 65 years). Frequent attenders were 28% less likely than infrequent ( $\leq$ once a week) to die during the follow-up period (relative hazard, 0.72 [95% CI, 0.64-0.81]) adjusted for demographic factors, health conditions, social connections, and health practices. Finally, a

9-year study<sup>39</sup> of a nationally representative sample of 22,080 US adults (age,  $\geq 20$  years) found the risk of death for nonattenders to be 1.87 times the risk of death for frequent attenders ( $P < .01$ ) after controlling for numerous demographic, baseline health, behavioral, social, and economic variables.

A recent meta-analysis<sup>44</sup> of 42 studies of nearly 126,000 persons found that highly religious persons had a 29% higher odds of survival compared with less religious persons (odds ratio [OR], 1.29 [95% CI, 1.20-1.39]). The authors could not attribute the association to confounding variables or to publication bias.

### Cardiovascular Disease

Studies have found that religious involvement is associated with less cardiovascular disease. A case-control study<sup>45</sup> found that secular Jewish persons had significantly higher odds of first myocardial infarction compared with Orthodox Jewish patients (OR, 4.2 [95% CI, 2.6-6.6] for men, 7.3 [95% CI, 2.3-23.0] for women) adjusted for age, ethnicity, education, smoking, physical activity, and body mass index. A 23-year prospective study<sup>46</sup> of 10,059 male Israeli civil servants and municipal employees found that Orthodox Jewish men had a 20% decreased risk of fatal coronary heart disease (CHD) compared with nonreligious men adjusted for age, blood pressure, lipids, smoking, diabetes, body mass index, and baseline CHD. A prospective study<sup>47</sup> of 232 people (age,  $\geq 55$  years) undergoing elective heart surgery found that lack of participation in social groups and lack of strength or comfort from religion were the most consistent predictors of death adjusted for age, previous cardiac surgery, and preoperative functional status. Finally, of 16 studies examined in a recent review,<sup>48</sup> 12 found that religious involvement was associated with less cardiovascular disease or cardiovascular mortality.

### Hypertension

Studies have found that religious involvement is associated with lower blood pressure and less hypertension. A recent study<sup>49</sup> examined the relationship between religious activities and blood pressure in a sample of 3963 community-dwelling adults (age,  $\geq 65$  years) using data from 3 time periods. Adjusted for age, ethnicity, sex, education, functional status, body mass index, and previous blood pressure, frequent ( $\geq$  once a week) attenders of religious services had consistently lower systolic and diastolic blood pressures compared with infrequent attenders. Furthermore, frequent attenders who engaged in private religious activities (eg, prayer) were 40% less likely to have diastolic hypertension ( $>90$  mm Hg) compared with infrequent attenders or those who did not engage in private religious activities (OR, 0.60 [95% CI, 0.48-0.75]). Religiously in-

involved persons were also more likely to be compliant with their medicines. However, this difference did not account for the observed differences in blood pressures.

Other recent studies<sup>50,51</sup> have found that, after adjusting for known risk factors for hypertension, self-rated importance of religion, intrinsic religiosity, and religious coping were associated with reduced blood pressure and hypertension. Finally, of 16 studies examined in a recent review,<sup>48</sup> 14 found that religious involvement was associated with lower blood pressure. The same review also examined 13 clinical trials of the effects of religious or spiritual practices (eg, meditation) on blood pressure. Of these, 9 found that these practices significantly reduce blood pressure.

### Other Studies of Physical Health

Studies have shown that religious involvement is associated with health-promoting behaviors such as more exercise,<sup>52-54</sup> proper nutrition,<sup>52,53</sup> more seat belt use,<sup>52</sup> smoking cessation,<sup>54</sup> and greater use of preventive services.<sup>25</sup> In addition, religious involvement predicts greater functioning among disabled persons.<sup>55</sup> Finally, religious involvement is associated with fewer hospitalizations and shorter hospital stays.<sup>56</sup> Only a few inconclusive studies have been done of the relationship of religious involvement and spirituality with cancer risk and mortality.<sup>48</sup>

### RELIGIOUS INVOLVEMENT AND SPIRITUALITY IN TERMINALLY ILL PATIENTS

The World Health Organization definition of palliative medicine emphasizes the psychosocial and spiritual aspects of care.<sup>57</sup> End-of-life care addresses not only physical symptoms but also psychosocial and spiritual concerns. Terminally ill patients derive strength and hope from spiritual and religious beliefs.<sup>58,59</sup> Indeed, terminally ill adults report significantly greater religiousness<sup>60</sup> and depth of spiritual perspective<sup>61</sup> compared with healthy adults. Greater depth of spiritual perspective is associated with greater sense of well-being.<sup>61</sup> Studies<sup>58,62</sup> also suggest that religiously involved persons at the end of life are more accepting of death, unrelated to belief in an afterlife. Finally, intrinsic religiosity<sup>63,64</sup> and religious involvement<sup>65</sup> are associated with less death anxiety.

### RELIGIOUS INVOLVEMENT, SPIRITUALITY, AND MENTAL HEALTH

#### Depression

Depression is a common illness; 6% to 10% of the population experience notable depression during their lifetime.<sup>66</sup> Recent longitudinal studies have examined the relationship between religious involvement and spirituality and depression. One study<sup>67</sup> examined the effects of self-reported religious salience on the incidence and course of

depression in a community-based sample of 177 persons (age, 55-89 years) in 1 year. Religious salience was associated not only with less risk of depression but also with recovery from depression among those who were depressed at the start of the study (especially those in poor physical health). Another study<sup>68</sup> examined the association between intrinsic religiosity and remission of depression among 94 depressed medically ill men (age,  $\geq 60$  years) in 1 year. After adjustment for 27 potential confounding variables, intrinsic religiosity was significantly associated with a greater likelihood of remission and a more rapid remission from depression.

In a study<sup>69</sup> of the treatment of depressed religious persons, standard cognitive-behavioral therapy (CBT) was compared with standard CBT with religious content and with pastoral care alone. The patients who received CBT with religious content or pastoral care alone had significantly less posttreatment depression compared with those who received standard CBT. In a similar study,<sup>70</sup> investigators randomly assigned religious Muslim patients with depression to standard therapy (medications and supportive psychotherapy) or to standard therapy with religious psychotherapy. Those receiving religious psychotherapy experienced a significantly more rapid recovery than those receiving standard therapy alone.

A recent review<sup>71</sup> examined the relationship between religious involvement and depression. Of 29 studies that examined this relationship, 24 found that religiously involved persons had fewer depressive symptoms and less depression, whereas the remaining 5 studies found no association.

### Anxiety

Religious involvement has been shown to be associated with less anxiety. One study<sup>72</sup> examined the relationships between multiple religious variables (eg, attendance at religious services, self-rated importance of religion, and private religious activities) and recent and lifetime anxiety disorders among nearly 3000 adults. Controlled for sex, chronic illnesses, negative life events, and socioeconomic status, religious involvement was associated with decreased recent and lifetime anxiety among the youngest patients (age, 18-39 years), but not among the oldest (age, 60-79 years). Another study<sup>73</sup> examined the relationship between spiritual well-being and anxiety in 114 adults with newly diagnosed cancer. Patients with high levels of spiritual well-being had lower levels of anxiety regardless of sex, age, marital status, diagnosis, group participation, or time since diagnosis.

Notably, 2 randomized clinical trials<sup>70,74</sup> involving religious Muslim patients with anxiety disorder compared standard therapy (medications and supportive psychotherapy) with standard therapy and religious psycho-

therapy. Those who received religious psychotherapy experienced a significantly more rapid recovery than those receiving standard therapy alone.

A recent review<sup>48</sup> of nearly 70 cross-sectional and prospective studies found that religious involvement is associated with less anxiety or fear.

### Substance Abuse

Religious persons are less likely to use or abuse alcohol and other drugs.<sup>52,53,75</sup> A review<sup>76</sup> of 20 studies published before 1976 found that religious involvement was associated with less substance abuse, whether the study was prospective or retrospective and whether the measure of religious involvement was defined as membership, active participation, religious upbringing, or self-reported religious salience. More recent reviews<sup>48,77</sup> have found similar results.

Longitudinal studies of religious involvement and substance abuse have been done. One prospective study<sup>78</sup> of 1014 male medical students found that religiously involved students were much less likely to abuse alcohol than their nonreligious colleagues during a 20-year follow-up period. One randomized trial<sup>79</sup> compared spiritually based 12-step facilitation (TSF) therapy with CBT and motivational enhancement therapy for alcoholism. The TSF was designed to engage patients in Alcoholics Anonymous (AA) and to assist patients through the first steps of the AA spiritual program. Compared with the other groups, TSF patients were significantly more likely to achieve complete abstinence.

A recent review<sup>80</sup> concluded that there is strong evidence that religious or spiritual involvement is associated with decreased risk of substance abuse, persons with addictions are more likely to report a lack of religious affiliation and involvement, and spiritually focused interventions (ie, focused on meaning and purpose, not necessarily on specific religious beliefs) and practices (eg, prayer) may facilitate recovery.

### Suicide

The inverse relationship between religious involvement and suicide was first reported in 1897.<sup>81</sup> Since then, a number of studies have confirmed this inverse relationship. Self-reported religiosity<sup>82</sup> and attendance at religious services<sup>82-84</sup> have been shown to be inversely associated with suicidal ideation. Two large ecological studies<sup>85,86</sup> of Western countries and a cross-sectional study<sup>87</sup> of a representative sample of Americans found inverse relationships between religious involvement and acceptance of suicide. One study<sup>88</sup> found that religious detachment was associated with increased suicide risk among Canadian youth. Several large ecological studies have found that belief in God,<sup>89</sup> attendance at religious services,<sup>90</sup> self-reported religiosity-

ity,<sup>86,90</sup> and religious upbringing<sup>90</sup> were inversely related to national suicide rates. Finally, several prospective studies<sup>26,35</sup> have found that the risk of completed suicide among religiously involved persons is less than the risk among nonreligiously involved individuals. Despite these findings, most scales currently used by researchers and clinicians to assess suicide risk do not assess patient religiosity or spirituality.<sup>91</sup>

### RELIGIOUS INVOLVEMENT, SPIRITUALITY, AND COPING WITH ILLNESS

Illnesses may interrupt routines, drain finances, separate families, create situations of dependency, and lead to existential and spiritual concerns.<sup>57</sup> Not only do many people rely on their religious beliefs and spirituality to cope with illness, but these people may also cope with illness more effectively than persons without such beliefs.<sup>75</sup> Religious and spiritual coping are common among persons with asthma,<sup>92</sup> human immunodeficiency virus (HIV) disease,<sup>93</sup> chronic pain,<sup>94,95</sup> coronary artery disease,<sup>96,97</sup> end-stage renal disease,<sup>96,98</sup> multiple sclerosis,<sup>96</sup> burns,<sup>99</sup> hip fracture,<sup>100</sup> and cancer.<sup>101-109</sup> Religious and spiritual coping are also common among nursing home residents<sup>110</sup> and the elderly population.<sup>111,112</sup> In a study of 157 hospitalized adults with moderate to high levels of pain, prayer was second only to pain medications (76% vs 82%) as the most common self-reported means of controlling pain.<sup>94</sup>

Religious and spiritual coping may have important prognostic implications. Cross-sectional and longitudinal studies have shown that religious and spiritual coping are associated with less depression during illness.<sup>100,112-115</sup> One study<sup>113</sup> examined the relationship between religious coping and depression among 850 men (age, >65 years) who had no history of mental illness and were hospitalized for a medical illness. After adjustment for sociodemographic and baseline health variables, depressive symptoms were inversely related to religious coping. In addition, religious coping was the only baseline variable that predicted less depression 6 months later.

Religious and spiritual coping have also been shown to lessen the negative impact physical illness has on functional status.<sup>75,113</sup> The greater the religious and spiritual coping, the greater the level of physical illness needed to produce a given level of disability. Finally, religious and spiritual coping have been shown to buffer the noxious effects of stressful life events (eg, death of spouse, divorce) among the elderly population.<sup>116</sup>

### RELIGIOUS INVOLVEMENT, SPIRITUALITY, AND HRQOL

The terms *quality of life* and more specifically *health-related quality of life* refer to the distinct physical, psycho-

logical, social, and spiritual domains of health that are influenced by a person's experiences, beliefs, expectations, and perceptions.<sup>117</sup> Studies have shown that religious involvement and spiritual well-being are associated with high levels of HRQOL in persons with cancer,<sup>65,118-121</sup> HIV disease,<sup>118,121</sup> heart disease,<sup>65</sup> limb amputation,<sup>119</sup> and spinal cord injury.<sup>119</sup> This direct relationship between spirituality and HRQOL persists despite declines in physical functioning.<sup>118,121</sup> One study<sup>121</sup> of 1620 persons with cancer and HIV disease found that spiritual well-being predicted higher HRQOL independent of physical, emotional, and social well-being.

### POSSIBLE BENEFICIAL MEDIATORS ASSOCIATED WITH RELIGIOUS INVOLVEMENT AND SPIRITUALITY

Like other factors that promote health (eg, exercise), religious involvement and spirituality likely enhance resistance to disease through the interaction of multiple beneficial mediators. As noted previously, religiously involved persons are more likely to embrace health-promoting behaviors such as eating a proper diet, eschewing risky behaviors such as smoking, seeking preventive services, and being compliant with treatments. Members of a religious group may have a shared genetic ancestry that promotes health.<sup>122</sup> Religiously involved persons often have strong social support systems, the physical and mental health benefits of which are well known.<sup>54,122-124</sup> However, these factors do not account for all the health benefits of religious involvement and spirituality. Recent large prospective studies have adjusted for these factors and still have found a significant relationship between religious involvement and spirituality and positive health outcomes.<sup>43</sup>

Hence, other factors likely contribute to the health benefits of religious involvement and spirituality. Religious and spiritual practices (eg, meditation, prayer, and worship) engender positive emotions such as hope, love, contentment, and forgiveness and limit negative emotions such as hostility. Positive emotions, in turn, can lead to decreased activation of the sympathetic branch of the autonomic nervous system and the hypothalamic-pituitary-adrenal axis (and decreased release of stress hormones such as norepinephrine and cortisol). This response has psychological effects (eg, less anxiety) and physiological effects (eg, decreased blood pressure, heart rate, and oxygen consumption) that may lead to better health.<sup>123,124</sup> Compared with uninvolved persons, religiously involved persons have enhanced immune function.<sup>48</sup> The placebo effect is a commonly observed phenomenon in medical research and practice. Religiously involved persons may have greater optimism and expectation for better health outcomes and hence benefit from the placebo effect.<sup>122</sup>

Table 1. **Religious Involvement, Spirituality, and Health Outcomes\***

What the research shows
Most persons have a spiritual life
Most patients want their spiritual needs assessed and addressed
Most studies have found a direct relationship between religious involvement and spirituality and better health outcomes
Supporting a patient's spirituality may enhance coping and recovery from illness
What the research does not show
Religious people don't get sick
Illness is due to lack of religious faith
Spirituality is the most important health factor
Doctors should prescribe religious activities
Other factors explain the association between religious involvement and spirituality and better health outcomes

\*Adapted from Levin.<sup>122</sup>

Nevertheless, not all the mechanisms by which religious involvement and spirituality affect health are understood, and more studies are needed to define them better. These mechanisms undoubtedly involve complex interactions of psychosocial-behavioral and biological processes.<sup>48</sup> Of note, this article does not account for the religious beliefs (eg, regarding the supernatural) of individuals about the effects of religious involvement and spirituality on health.

### NEGATIVE EFFECTS OF RELIGIOUS INVOLVEMENT AND SPIRITUALITY

Few systematic population-based studies have shown that religious involvement and spirituality are associated with negative physical and mental health outcomes. However, like any factor that may affect health (eg, lifestyle choices), religious involvement and spirituality may adversely affect an individual. For example, religious beliefs may adversely affect a person's health by encouraging avoidance or discontinuance of traditional treatments, failure to seek timely medical care, avoidance of effective preventive health measures (eg, childhood immunizations and prenatal care), and religious abuse (eg, allowing for physical abuse of children). Religiously involved persons may have unrealistically high expectations for themselves leading to isolation, stress, and anxiety, or they may alienate themselves from others who do not share their beliefs. Finally, it is well known that unhealthy belief systems (eg, religious fanaticism and cults) can adversely affect health.<sup>48</sup>

Notably, Sigmund Freud and Albert Ellis regarded religious involvement as suggestive of psychopathology.<sup>125</sup> This opinion, however, was not derived from research. In fact, investigators have tested the hypothesis that religious

involvement is associated with mental illness. A meta-analysis<sup>126</sup> of 24 such studies found no association between religious involvement and psychopathology.

### WHAT CONCLUSIONS CAN BE DRAWN FROM THE RESEARCH?

According to Levin,<sup>127</sup> to verify a causal relationship between a variable (eg, religious involvement) and a health outcome (eg, mortality), 3 questions must be answered. Is there an association? If so, is the relationship valid? If so, is it causal? Regarding the first question, a majority of nearly 850 studies of mental health and 350 studies of physical health have found a direct relationship between religious involvement and spirituality and better health outcomes.<sup>23</sup>

The association between religious involvement and spirituality and better health outcomes seems valid. This association has been found regardless of the study design (eg, prospective, retrospective) and the population studied. In addition, religious and spiritual variables were not the primary ones or the only ones used in most studies. These study design features limit bias. Furthermore, recent well-designed studies have shown a direct relationship between religious involvement and spirituality and better health outcomes even after adjustment for potential confounding variables.<sup>43</sup>

Whether religious involvement and spirituality cause better health outcomes is more difficult to determine. Levin<sup>127</sup> describes 9 features of a causal epidemiologic association: strength, consistency, specificity, temporality, biological gradient, plausibility, coherence, experiment, and analogy; for some of these features (strength, consistency, temporality, plausibility, analogy), the published studies support causality, whereas for the others, the evidence is insufficient.

Even though the association between religious involvement and spirituality and better health outcomes appears valid, clinicians should be careful not to draw erroneous conclusions from the research findings (Table 1). For example, the research does not tell us that religious people do not get sick or that illness is due to lack of religious faith.

### IMPLICATIONS OF RELIGIOUS INVOLVEMENT AND SPIRITUALITY FOR CLINICAL PRACTICE

#### Practical Aspects

The results of the surveys and the studies we reviewed suggest that acknowledging and supporting patient spirituality may enhance patient care. Indeed, William Osler<sup>128</sup> called faith "an unfailing stream of energy," whereas William Mayo<sup>129</sup> said, "[T]here is a spiritual as well as a material quality in the care of sick people, and too great efficiency in material details may hamper progress." To-

day, the US Joint Commission on the Accreditation of Healthcare Organizations<sup>80</sup> recommends and requires the routine assessment of patient spiritual needs, and the American Psychiatric Association<sup>130</sup> recommends that physicians inquire about the religious and spiritual orientation of patients “so that they may properly attend to them in the course of treatment.” The premise of these comments is that patient care is much more than disease management; it involves addressing the needs of the whole person.

There are specific reasons for the clinician to acknowledge and support a patient’s spirituality. First, patients regard their spiritual health and physical health as equally important.<sup>8</sup> Second, research suggests that a patient’s spirituality enhances coping and quality of life during illness; it can be a source of identity, meaning, purpose, hope, reassurance, and transcendence, and it can mitigate the uncertainties of illness.<sup>5,131</sup> Third, acknowledging and addressing a patient’s spirituality may enhance cultural sensitivity.<sup>5</sup> Fourth, supporting a patient’s spirituality may enrich the patient-physician relationship.<sup>5,131</sup> Finally, because the goals of medicine are to cure disease when possible and to relieve suffering always,<sup>132</sup> including spirituality in clinical practice should be within the purview of the physician. Supporting a patient’s spirituality should be viewed in the same light as addressing other psychosocial factors (eg, family discord) that influence the delivery of care and the outcomes of illness.

However, a number of barriers prevent support of patient spirituality. First, many clinicians practice in the biomedical model in which spiritual matters seem less relevant. Second, fewer physicians than patients describe themselves as religious or maintain spiritual orientations.<sup>9,133,134</sup> Hence, the importance of spiritual matters to patients may be underestimated or unrecognized. Third, the effect of religious involvement and spirituality on health outcomes is taught infrequently in medical training.<sup>133</sup> Fourth, some patients (eg, children) may have complex or daunting spiritual needs that may discourage physician involvement.<sup>135</sup> Finally, the spiritual concerns of patients may not be addressed because of time constraints, lack of confidence in the effectiveness of spiritual care, and role uncertainty (eg, with chaplains).<sup>136</sup>

### Ethical Issues

Ethical issues are raised when one includes patient spirituality in clinical practice. Nonmaleficence (“do no harm”) requires that physicians not proselytize. In addition, the results of the studies we reviewed do not justify a physician’s prescription for patients to engage in religious activities.<sup>137</sup> The ethical physician would not make such recommendations just as she or he would not recommend that patients marry or have children even though these

activities are associated with health benefits.<sup>137</sup> Finally, religious and spiritual practices should not replace effective allopathic treatments.<sup>23</sup>

On the other hand, the beneficent physician acknowledges and supports a patient’s spirituality. Some authors, however, claim that the religious and spiritual concerns of patients are private and that physicians should not inquire about them.<sup>137</sup> However, a similar case could be made regarding inquiries about patient sexuality, substance abuse, and other sensitive matters. These matters, formerly shunned by physicians, are now discussed openly because of their potential effect on health. The physician’s duty is not to judge a patient’s private attitudes and behaviors but to understand their clinical importance.<sup>43,138</sup> Hence, physicians should inquire about and support a patient’s spiritual beliefs and needs, especially during severe and terminal illnesses, when they are most likely to affect clinical decisions. Indeed, lack of appropriate spiritual care may constitute a form of negligence.<sup>131</sup>

Some authors suggest that physicians ignore patient spirituality because they may not have the knowledge or skills to engage religiously diverse patients in meaningful discussions about their spiritual needs without offending them.<sup>137</sup> Autonomy, however, requires that physicians respect the decisions of competent patients, which are often based on religious and spiritual beliefs. Furthermore, unrelated to medical decisions, patients often spontaneously raise spiritual issues and concerns with their physicians. Hence, it is difficult for physicians to ignore or avoid patient spirituality.

### Taking a Spiritual History

Discerning the spiritual needs of patients can be done by taking a spiritual history. Similar to the social history, the spiritual history informs the physician of the importance of spiritual matters in the life of the patient and how the patient’s spirituality can be used as a source of strength and coping. For terminally ill patients, the spiritual history is regarded as a crucial component of palliative medicine.<sup>139-141</sup>

Several formats for taking a spiritual history have been suggested.<sup>23,133,142</sup> One easy-to-use and practical questionnaire<sup>143</sup> is shown in Table 2. Additional questions might be: “What helps you get through tough times?”; “To whom do you turn when you need support?”; “What meaning does this illness have for you?”; and “What are your hopes (expectations, fears) for the future?”<sup>131,144</sup> To our knowledge, there have been no prospective studies of the utility of these questionnaires.

A spiritual history is not necessary for every clinical encounter (eg, patients with mild illnesses such as viral pharyngitis). Some patients, regardless of the severity of their illness, may not welcome in-depth discussion of spiri-

Table 2. The FICA Spiritual History\*

---

<b>Faith:</b> Do you consider yourself spiritual? Do you have a religious faith?
<b>Importance:</b> How important are your religious beliefs and spirituality, and how might they influence decisions related to your health?
<b>Community:</b> Are you part of a religious or spiritual or other community? If so, how does this community support you?
<b>Address:</b> How might I address your spiritual needs?

---

\*Modified from Puchalski and Romer<sup>143</sup> and used by permission of Christina Puchalski, MD.

tual matters. However, as noted previously, surveys suggest most patients would welcome such inquiries. Furthermore, some patients, especially those with life-threatening or terminal illnesses, may be preoccupied with existential and spiritual concerns such as questioning of faith, lack of meaning and purpose, and mystical and near-death experiences.<sup>6,145</sup> The spiritual history helps discern these concerns. Finally, the spiritual history may help determine if a patient is open to faith-based interventions (eg, working with a parish nurse).

### Sources of Spiritual Care

On its own, the spiritual history can be a form of spiritual care. Allowing patients to voice their spiritual doubts, needs, and concerns may be reassuring and comforting to them.<sup>146</sup> Informing patients of and making available other sources of spiritual care may also be reassuring, limit the isolation caused by illness, and facilitate recovery. Chaplains are an important source of spiritual care. Many medical centers have pastoral care departments staffed by chaplains who represent many religious faiths and denominations. Chaplains can provide patients support, perform spiritual counseling, and meet sacramental needs. They can also provide clinicians advice and guidance about patients who have potentially challenging spiritual issues (eg, children, minorities, and recent immigrants). Pastoral care departments have access to community resources such as local congregations, spiritual care providers representing minority faiths, support groups, and parish nurses. Other important sources of spiritual care include family and

Table 3. Sources of Spiritual Care

---

Physician and other health care provider acknowledgment and support of a patient's spiritual needs
Chaplains
Family and friends
Community resources (eg, clergy, parish nurses, support groups)
Readily available religious texts and artifacts
Chapels
Quiet rooms, meditation rooms

---

friends, readily available religious texts, artifacts, hospital chapels, and special rooms devoted to prayer and meditation (Table 3).

### CONCLUSIONS

Most patients have a spiritual life and regard their spiritual health and physical health as equally important. Furthermore, people may have greater spiritual needs during illness. Surveys suggest, however, that these needs are not met.

A large and growing number of studies have shown a direct relationship between religious involvement and spirituality and positive health outcomes, including mortality, physical illnesses, mental illness, HRQOL, and coping with illness (including terminal illness). Studies also suggest that addressing the spiritual needs of patients may facilitate recovery from illness.

Although the relationship between religious involvement and spirituality and health outcomes seems valid, it is difficult to establish causality. While religiously involved persons embrace health-promoting behaviors, eschew risky behaviors, and have strong support networks, these factors do not account for all the benefits of religious involvement and spirituality. Rather, these benefits are likely conveyed through complex psychosocial-behavioral and biological processes that are incompletely understood.

Discerning, acknowledging, and supporting the spiritual needs of patients can be done in a straightforward, ethical, and noncontroversial manner and may relieve suffering and facilitate recovery from illness. The spiritual history helps the physician discern the spiritual needs of patients. Furthermore, such inquiry is a form of spiritual care in that it allows patients to voice their spiritual and existential concerns. In addition, many other sources of spiritual care, especially chaplains, are available to clinicians to address the spiritual needs of patients.

### REFERENCES

1. Barnard D, Dayringer R, Cassel CK. Toward a person-centered medicine: religious studies in the medical curriculum. *Acad Med.* 1995;70:806-813.
2. Gove PB, Merriam-Webster Editorial Staff. *Webster's Third New International Dictionary of the English Language, Unabridged.* Springfield, Mass: G & C Merriam Co; 1961.
3. Emblen JD. Religion and spirituality defined according to current use in nursing literature. *J Prof Nurs.* 1992;8:41-47.
4. Holland JC, Kash KM, Passik S, et al. A brief spiritual beliefs inventory for use in quality of life research in life-threatening illness. *Psychooncology.* 1998;7:460-469.
5. Fallot RD. The place of spirituality and religion in mental health services. *New Dir Ment Health Serv.* 1998;80:3-12.
6. Lukoff D, Lu FG, Turner R. Cultural considerations in the assessment and treatment of religious and spiritual problems. *Psychiatr Clin North Am.* 1995;18:467-485.
7. Gallup G. *Religion in America: 1990.* Princeton, NJ: Princeton Religious Research Center; 1990. Cited by Matthews DA,



- McCullough ME, Larson DB, Koenig HG, Swyers JP, Milano MG. Religious commitment and health status: a review of the research and implications for family medicine. *Arch Fam Med*. 1998;7:118-124.
8. King DE, Bushwick B. Beliefs and attitudes of hospital inpatients about faith healing and prayer. *J Fam Pract*. 1994;39:349-352.
  9. Maugans TA, Wadland WC. Religion and family medicine: a survey of physicians and patients. *J Fam Pract*. 1991;32:210-213.
  10. Ehman JW, Ott BB, Short TH, Ciampa RC, Hansen-Flaschen J. Do patients want physicians to inquire about their spiritual or religious beliefs if they become gravely ill? *Arch Intern Med*. 1999;159:1803-1806.
  11. Daaleman TP, Nease DE Jr. Patient attitudes regarding physician inquiry into spiritual and religious issues. *J Fam Pract*. 1994;39:564-568.
  12. Ellis MR, Vinson DC, Ewigman B. Addressing spiritual concerns of patients: family physicians' attitudes and practices. *J Fam Pract*. 1999;48:105-109.
  13. Fitchett G, Burton LA, Sivan AB. The religious needs and resources of psychiatric inpatients. *J Nerv Ment Dis*. 1997;185:320-326.
  14. Gundersen L. Faith and healing. *Ann Intern Med*. 2000;132:169-172.
  15. Larson DB, Pattison EM, Blazer DG, Omran AR, Kaplan BH. Systematic analysis of research on religious variables in four major psychiatric journals, 1978-1982. *Am J Psychiatry*. 1986;143:329-334.
  16. Weaver AJ, Samford JA, Larson DB, Lucas LA, Koenig HG, Patrick V. A systematic review of research on religion in four major psychiatric journals: 1991-1995. *J Nerv Ment Dis*. 1998;186:187-190.
  17. Craigie FC Jr, Liu IY, Larson DB, Lyons JS. A systematic analysis of religious variables in the *Journal of Family Practice*, 1976-1986. *J Fam Pract*. 1988;27:509-513.
  18. Orr RD, Isaac G. Religious variables are infrequently reported in clinical research. *Fam Med*. 1992;24:602-606.
  19. Weaver AJ, Samford JA, Morgan VJ, Lichton AI, Larson DB, Garbarino J. Research on religious variables in five major adolescent research journals: 1992 to 1996. *J Nerv Ment Dis*. 2000;188:36-44.
  20. Weaver AJ, Flannelly LT, Flannelly KJ, Koenig HG, Larson DB. An analysis of research on religious and spiritual variables in three major mental health nursing journals, 1991-1995. *Issues Ment Health Nurs*. 1998;19:263-276.
  21. Sherrill KA, Larson DB, Greenwold M. Is religion taboo in gerontology? systematic review of research on religion in three major gerontology journals. *Am J Geriatr Psychiatry*. 1993;1:109-117.
  22. Engel GL. The clinical application of the biopsychosocial model. *Am J Psychiatry*. 1980;137:535-544.
  23. Koenig HG. Religion, spirituality, and medicine: application to clinical practice. *JAMA*. 2000;284:1708.
  24. Comstock GW. Fatal arteriosclerotic heart disease, water hardness at home, and socioeconomic characteristics. *Am J Epidemiol*. 1971;94:1-10.
  25. Comstock GW, Partridge KB. Church attendance and health. *J Chronic Dis*. 1972;25:665-672.
  26. Comstock GW, Tonascia JA. Education and mortality in Washington County, Maryland. *J Health Soc Behav*. 1977;18:54-61.
  27. Berkman LF, Syme SL. Social networks, host resistance, and mortality: a nine-year follow-up study of Alameda County residents. *Am J Epidemiol*. 1979;109:186-204.
  28. House JS, Robbins C, Metzner HL. The association of social relationships and activities with mortality: prospective evidence from the Tecumseh Community Health Study. *Am J Epidemiol*. 1982;116:123-140.
  29. Wingard DL. The sex differential in mortality rates: demographic and behavioral factors. *Am J Epidemiol*. 1982;115:205-216.
  30. Zuckerman DM, Kasl SV, Ostfeld AM. Psychosocial predictors of mortality among the elderly poor: the role of religion, well-being, and social contacts. *Am J Epidemiol*. 1984;119:410-423.
  31. Schoenbach VJ, Kaplan BH, Fredman L, Kleinbaum DG. Social ties and mortality in Evans County, Georgia. *Am J Epidemiol*. 1986;123:577-591.
  32. Seeman TE, Kaplan GA, Knudsen L, Cohen R, Guralnik J. Social network ties and mortality among the elderly in the Alameda County Study. *Am J Epidemiol*. 1987;126:714-723.
  33. Bryant S, Rakowski W. Predictors of mortality among elderly African-Americans. *Res Aging*. 1992;14:50-67.
  34. Goldman N, Korenman S, Weinstein R. Marital status and health among the elderly. *Soc Sci Med*. 1995;40:1717-1730.
  35. Kark JD, Shemi G, Friedlander Y, Martin O, Manor O, Blondheim SH. Does religious observance promote health? mortality in secular vs religious kabbuzim in Israel. *Am J Public Health*. 1996;86:341-346.
  36. Strawbridge WJ, Cohen RD, Shema SJ, Kaplan GA. Frequent attendance at religious services and mortality over 28 years. *Am J Public Health*. 1997;87:957-961.
  37. Oman D, Reed D. Religion and mortality among the community-dwelling elderly. *Am J Public Health*. 1998;88:1469-1475.
  38. Glass TA, de Leon CM, Morotolli RA, Berkman LF. Population based study of social and productive activities as predictors of survival among elderly Americans. *BMJ*. 1999;319:478-483.
  39. Hummer RA, Rogers RG, Nam CB, Ellison CG. Religious involvement and U.S. adult mortality. *Demography*. 1999;36:273-285.
  40. Koenig HG, Hays JC, Larson DB, et al. Does religious attendance prolong survival? a six-year follow-up study of 3,968 older adults. *J Gerontol A Biol Sci Med Sci*. 1999;54A:M370-M376.
  41. Clark KM, Friedman HS, Martin LR. A longitudinal study of religiosity and mortality risk. *J Health Psychol*. 1999;4:381-391.
  42. Koenig HG, Larson DB, Hays JC, et al. Religion and the survival of 1010 hospitalized veterans. *J Religion Health*. 1998;37:15-29.
  43. Koenig HG, Idler E, Kasl S, et al. Religion, spirituality, and medicine: a rebuttal to skeptics. *Int J Psychiatry Med*. 1999;29:123-131.
  44. McCullough ME, Hoyt WT, Larson DB, Koenig HG, Thoresen C. Religious involvement and mortality: a meta-analytic review. *Health Psychol*. 2000;19:211-222.
  45. Friedlander Y, Kark JD, Stein Y. Religious orthodoxy and myocardial infarction in Jerusalem—a case control study. *Int J Cardiol*. 1986;10:33-41.
  46. Goldbourt U, Yaari S, Medalie JH. Factors predictive of long-term coronary heart disease mortality among 10,059 male Israeli civil servants and municipal employees: a 23-year mortality follow-up in the Israeli Ischemic Heart Disease Study. *Cardiology*. 1993;82:100-121.
  47. Oxman TE, Freeman DH Jr, Manheimer ED. Lack of social participation or religious strength and comfort as risk factors for death after cardiac surgery in the elderly. *Psychosom Med*. 1995;57:5-15.
  48. Koenig HG, McCullough ME, Larson DB. *Handbook of Religion and Health*. New York, NY: Oxford University Press; 2001.
  49. Koenig HG, George LK, Hays JC, Larson DB, Cohen HJ, Blazer DG. The relationship between religious activities and blood pressure in older adults. *Int J Psychiatry Med*. 1998;28:189-213.
  50. Walsh A. Religion and hypertension: testing alternative explanations among immigrants. *Behav Med*. 1998;24:122-130.
  51. Hixson KA, Gruchow HW, Morgan DW. The relation between religiosity, selected health behaviors, and blood pressure among adult females. *Prev Med*. 1998;27:545-552.
  52. Oleckno WA, Blacconiere MJ. Relationship of religiosity to wellness and other health-related behaviors and outcomes. *Psychol Rep*. 1991;68:819-826.
  53. Wallace JM Jr, Forman TA. Religion's role in promoting health and reducing risk among American youth. *Health Educ Behav*. 1998;25:721-741.
  54. Strawbridge WJ, Shema SJ, Cohen RD, Kaplan GA. Religious attendance increases survival by improving and maintaining good health behaviors, mental health, and social relationships. *Ann Behav Med*. 2001;23:68-74.

55. Idler EL, Kasl SV. Religion among disabled and nondisabled persons, II: attendance at religious services as a predictor of the course of disability. *J Gerontol B Psychol Sci Soc Sci.* 1997;52:S306-S316.
56. Koenig HG, Larson DB. Use of hospital services, religious attendance, and religious affiliation. *South Med J.* 1998;91:925-932.
57. Dein S, Stygall J. Does being religious help or hinder coping with chronic illness? a critical literature review. *Palliat Med.* 1997;11:291-298.
58. Cartwright A. Is religion a help around the time of death? *Public Health.* 1991;105:79-87.
59. Roberts JA, Brown D, Elkins T, Larson DB. Factors influencing views of patients with gynecologic cancer about end-of-life decisions. *Am J Obstet Gynecol.* 1997;176:166-172.
60. Reed PG. Religiousness among terminally ill and healthy adults. *Res Nurs Health.* 1986;9:35-41.
61. Reed PG. Spirituality and well-being in terminally ill hospitalized adults. *Res Nurs Health.* 1987;10:335-344.
62. Kaldjian LC, Jekel JF, Friedland G. End-of-life decisions in HIV-positive patients: the role of spiritual beliefs. *AIDS.* 1998;12:103-107.
63. Thorson JA, Powell FC. Meanings of death and intrinsic religiosity. *J Clin Psychol.* 1990;46:379-391.
64. Alvarado KA, Templer DI, Bresler C, Thomas-Dobson S. The relationship of religious variables to death depression and death anxiety. *J Clin Psychol.* 1995;51:202-204.
65. Matthews DA, Larson DB, Barry CP, eds. *The Faith Factor: An Annotated Bibliography of Clinical Research on Spiritual Subjects.* Vol 1. Rockville, Md: National Institute for Healthcare Research; 1993.
66. Robins LN, Helzer JE, Weissman MM, et al. Lifetime prevalence of specific psychiatric disorders in three sites. *Arch Gen Psychiatry.* 1984;41:949-958.
67. Braam AW, Beekman AT, Deeg DJ, Smit JH, van Tilburg W. Religiosity as a protective or prognostic factor of depression in later life: results from a community survey in The Netherlands. *Acta Psychiatr Scand.* 1997;96:199-205.
68. Koenig HG, George LK, Peterson BL. Religiosity and remission of depression in medically ill older patients. *Am J Psychiatry.* 1998;155:536-542.
69. Propst LR, Ostrom R, Watkins P, Dean T, Mashburn D. Comparative efficacy of religious and nonreligious cognitive-behavioral therapy for the treatment of clinical depression in religious individuals. *J Consult Clin Psychol.* 1992;60:94-103.
70. Razali SM, Hasanah CI, Aminah K, Subramaniam M. Religious-sociocultural psychotherapy in patients with anxiety and depression. *Aust N Z J Psychiatry.* 1998;32:867-872.
71. McCullough ME, Larson DB. Religion and depression: a review of the literature. *Twin Res.* 1999;2:126-136.
72. Koenig HG, Ford SM, George LK, Blazer DG, Meador KG. Religion and anxiety disorder: an examination and comparison of associations in young, middle-aged, and elderly adults. *J Anxiety Disord.* 1993;7:321-342.
73. Kaczorowski JM. Spiritual well-being and anxiety in adults diagnosed with cancer. *Hosp J.* 1989;5:105-116.
74. Azhar MZ, Varma SL, Dharap AS. Religious psychotherapy in anxiety disorder patients. *Acta Psychiatr Scand.* 1994;90:1-3.
75. Matthews DA, McCullough ME, Larson DB, Koenig HG, Swyers JP, Milano MG. Religious commitment and health status: a review of the research and implications for family medicine. *Arch Fam Med.* 1998;7:118-124.
76. Gorsuch RL, Butler MC. Initial drug abuse: a review of predisposing social psychological factors. *Psychol Bull.* 1976;83:120-137.
77. Gartner J, Larson DB, Allen GD. Religious commitment and mental health: a review of the empirical literature. *J Psychol Theology.* 1991;19:6-25.
78. Moore RD, Mead L, Pearson TA. Youthful precursors of alcohol abuse in physicians. *Am J Med.* 1990;88:332-336.
79. Project MATCH Research Group. Matching Alcoholism Treatments to Client Heterogeneity: project MATCH posttreatment drinking outcomes. *J Stud Alcohol.* 1997;58:7-29.
80. Miller WR. Researching the spiritual dimensions of alcohol and other drug problems. *Addiction.* 1998;93:979-990.
81. Durkheim É. *Suicide: A Study in Sociology.* (Translated by JA Spaulding, G Simpson.) New York, NY: The Free Press; 1951.
82. Hovey JD. Religion and suicidal ideation in a sample of Latin American immigrants. *Psychol Rep.* 1999;85:171-177.
83. Stack S, Lester D. The effect of religion on suicide ideation. *Soc Psychiatry Psychiatr Epidemiol.* 1991;26:168-170.
84. Siegrist M. Church attendance, denomination, and suicide ideology. *J Soc Psychol.* 1996;136:559-566.
85. Neeleman J, Halpern D, Leon D, Lewis G. Tolerance of suicide, religion and suicide rates: an ecological and individual study in 19 Western countries. *Psychol Med.* 1997;27:1165-1171.
86. Neeleman J. Regional suicide rates in the Netherlands: does religion still play a role? *Int J Epidemiol.* 1998;27:466-472.
87. Neeleman J, Wessely S, Lewis G. Suicide acceptability in African- and white Americans: the role of religion. *J Nerv Ment Dis.* 1998;186:12-16.
88. Trovato F. A Durkheimian analysis of youth suicide: Canada, 1971 and 1981. *Suicide Life Threat Behav.* 1992;22:413-427.
89. Lester D. Religiosity, suicide and homicide: a cross-national examination. *Psychol Rep.* 1992;71:1282.
90. Neeleman J, Lewis G. Suicide, religion, and socioeconomic conditions: an ecological study in 26 countries, 1990. *J Epidemiol Community Health.* 1999;53:204-210.
91. Kehoe NC, Gutheil TG. Neglect of religious issues in scale-based assessment of suicidal patients. *Hosp Community Psychiatry.* 1994;45:366-369.
92. Mailick MD, Holden G, Walther VN. Coping with childhood asthma: caretakers' views. *Health Soc Work.* 1994;19:103-111.
93. Hall BA. Ways of maintaining hope in HIV disease. *Res Nurs Health.* 1994;17:283-293.
94. McNeill JA, Sherwood GD, Starck PL, Thompson CJ. Assessing clinical outcomes: patient satisfaction with pain management. *J Pain Symptom Manage.* 1998;16:29-40.
95. Kotarba JA. Perceptions of death, belief systems and the process of coping with chronic pain. *Soc Sci Med.* 1983;17:681-689.
96. Muthny FA, Bechtel M, Spaete M. Lay etiologic theories and coping with illness in severe physical diseases: an empirical comparative study of female myocardial infarct, cancer, dialysis and multiple sclerosis patients [in German]. *Psychother Psychosom Med Psychol.* 1992;42:41-53.
97. Saudia TL, Kinney MR, Brown KC, Young-Ward L. Health locus of control and helpfulness of prayer. *Heart Lung.* 1991;20:60-65.
98. O'Brien ME. Religious faith and adjustment to long-term hemodialysis. *J Religion Health.* 1982;21:68-80.
99. Sherrill KA, Larson DB. Adult burn patients: the role of religion in recovery. *South Med J.* 1988;81:821-825.
100. Pressman P, Lyons JS, Larson DB, Strain JJ. Religious belief, depression, and ambulation status in elderly women with broken hips. *Am J Psychiatry.* 1990;147:758-760.
101. Jenkins RA, Pargament KI. Religion and spirituality as resources for coping with cancer. *J Psychosoc Oncol.* 1995;13:51-74.
102. Yates JW, Chalmer BJ, St James P, Follansbee M, McKegney FP. Religion in patients with advanced cancer. *Med Pediatr Oncol.* 1981;9:121-128.
103. Tebbi CK, Mallon JC, Richards ME, Bigler LR. Religiosity and locus of control of adolescent cancer patients. *Psychol Rep.* 1987;61:683-696.
104. Johnson SC, Spilka B. Coping with breast cancer: the roles of clergy and faith. *J Religion Health.* 1991;30:21-33.
105. Silberfarb PM, Anderson KM, Rundle AC, Holland JC, Cooper MR, McIntyre OR. Mood and clinical status in patients with multiple myeloma. *J Clin Oncol.* 1991;9:2219-2224.

106. Acklin MW, Brown EC, Mauger PA. The role of religious values in coping with cancer. *J Religion Health*. 1983;22:322-333.
107. Northouse LL. Mastectomy patients and the fear of cancer recurrence. *Cancer Nurs*. 1981;4:213-220.
108. Carver CS, Pozo C, Harris SD, et al. How coping mediates the effect of optimism on distress: a study of women with early stage breast cancer. *J Pers Soc Psychol*. 1993;65:375-390.
109. Baider L, Russak SM, Perry S, et al. The role of religious and spiritual beliefs in coping with malignant melanoma: an Israeli sample. *Psychooncology*. 1999;8:27-35.
110. Koenig HG, Weiner DK, Peterson BL, Meador KG, Keefe FJ. Religious coping in the nursing home: a biopsychosocial model. *Int J Psychiatry Med*. 1997;27:365-376.
111. Courtenay BC, Poon LW, Martin P, Clayton GM, Johnson MA. Religiosity and adaptation in the oldest-old. *Int J Aging Hum Dev*. 1992;34:47-56.
112. Kennedy GJ, Kelman HR, Thomas C, Chen J. The relation of religious preference and practice to depressive symptoms among 1,855 older adults. *J Gerontol B Psychol Sci Soc Sci*. 1996;51B:P301-P308.
113. Koenig HG, Cohen HJ, Blazer DG, et al. Religious coping and depression among elderly, hospitalized medically ill men. *Am J Psychiatry*. 1992;149:1693-1700.
114. Levin JS, Markides KS, Ray LA. Religious attendance and psychological well-being in Mexican Americans: a panel analysis of three-generations data. *Gerontologist*. 1996;36:454-463.
115. Woods TE, Antoni MH, Ironson GH, Kling DW. Religiosity is associated with affective and immune status in symptomatic HIV-infected gay men. *J Psychosom Res*. 1999;46:165-176.
116. Krause N. Stressors in highly valued roles, religious coping, and mortality. *Psychol Aging*. 1998;13:242-255.
117. Testa MA, Simonson DC. Assessment of quality-of-life outcomes. *N Engl J Med*. 1996;334:835-840.
118. Fitchett G, Peterman AH, Cella DF. Spiritual beliefs and quality of life in cancer and HIV patients. Presented at the Third World Congress on Psycho-Oncology, New York, NY, 1996. Cited by Mytko JJ, Knight SJ. Body, mind and spirit: towards the integration of religiosity and spirituality in cancer quality of life research. *Psychooncology*. 1999;8:439-450.
119. Riley BB, Perna R, Tate DG, Forchheimer M, Anderson C, Luera G. Types of spiritual well-being among persons with chronic illness: their relation to various forms of quality of life. *Arch Phys Med Rehabil*. 1998;79:258-264.
120. Cotton SP, Levine EG, Fitzpatrick CM, Dold KH, Targ E. Exploring the relationships among spiritual well-being, quality of life, and psychological adjustment in women with breast cancer. *Psychooncology*. 1999;8:429-438.
121. Brady MJ, Peterman AH, Fitchett G, Mo M, Cella D. A case for including spirituality in quality of life measurement in oncology. *Psychooncology*. 1999;8:417-428.
122. Levin JS. How religion influences morbidity and health: reflections on natural history, salutogenesis and host resistance. *Soc Sci Med*. 1996;43:849-864.
123. Larson DB, Swyers JP, McCullough ME. *Scientific Research on Spirituality and Health: A Report Based on the Scientific Progress in Spirituality Conferences*. Rockville, Md: National Institute for Healthcare Research; 1998.
124. Seybold KS, Hill PC. The role of religion and spirituality in mental and physical health. *Curr Directions Psychol Sci*. 2001;10:21-24.
125. Larson DB, Larson SS. *The Forgotten Factor in Physical and Mental Health: What Does the Research Show? An Independent Study Seminar*. Rockville, Md: National Institute for Healthcare Research; 1994.
126. Bergin AE. Religiosity and mental health: a critical reevaluation and meta-analysis. *Prof Psychol Res Pract*. 1983;14:170-184.
127. Levin JS. Religion and health: is there an association, is it valid, and is it causal? *Soc Sci Med*. 1994;38:1475-1482.
128. Osler W. The faith that heals. *Br Med J*. 1910;2:1470-1472.
129. Mayo WJ. Minutes from a faculty meeting of the Mayo Clinic staff, November 21, 1932.
130. Committee on Religion and Psychiatry. Guidelines regarding possible conflict between psychiatrists' religious commitments and psychiatric practice. *Am J Psychiatry*. 1990;147:542.
131. Post SG, Puchalski CM, Larson DB. Physicians and patient spirituality: professional boundaries, competency, and ethics. *Ann Intern Med*. 2000;132:578-583.
132. Cassell EJ. The nature of suffering and the goals of medicine. *N Engl J Med*. 1982;306:639-645.
133. Maugans TA. The SPIRITual history. *Arch Fam Med*. 1996;5:11-16.
134. Oyama O, Koenig HG. Religious beliefs and practices in family medicine. *Arch Fam Med*. 1998;7:431-435.
135. Hart D, Schneider D. Spiritual care for children with cancer. *Semin Oncol Nurs*. 1997;13:263-270.
136. Kristeller JL, Zumbrun CS, Schilling RF. 'I would if I could': how oncologists and oncology nurses address spiritual distress in cancer patients. *Psychooncology*. 1999;8:451-458.
137. Sloan RP, Bagiella E, VandeCreek L, et al. Should physicians prescribe religious activities? *N Engl J Med*. 2000;342:1913-1916.
138. Waldfoegel S, Wolpe PR. Using awareness of religious factors to enhance interventions in consultation-liaison psychiatry. *Hosp Community Psychiatry*. 1993;44:473-477.
139. Schuetz B. Spirituality and palliative care. *Aust Fam Physician*. 1995;24:775-777.
140. Bollwinkel EM. Role of spirituality in hospice care. *Ann Acad Med Singapore*. 1994;23:261-263.
141. Rummans TA, Bostwick JM, Clark MM, Mayo Clinic Cancer Center Quality of Life Working Group. Maintaining quality of life at the end of life. *Mayo Clin Proc*. 2000;75:1305-1310.
142. Anandarajah G, Hight E. Spirituality and medical practice: using the HOPE questions as a practical tool for spiritual assessment. *Am Fam Physician*. 2001;63:81-89.
143. Puchalski C, Romer AL. Taking a spiritual history allows clinicians to understand patients more fully. *J Palliat Med*. 2000;3:129-137.
144. Gioielli ME, Berkman B, Robinson M. Spirituality and quality of life in gynecologic oncology patients. *Cancer Pract*. 1998;6:333-338.
145. Turner RP, Lukoff D, Barnhouse RT, Lu FG. Religious or spiritual problem. A culturally sensitive diagnostic category in the DSM-IV. *J Nerv Ment Dis*. 1995;183:435-444.
146. Taylor EJ, Outlaw FH, Bernardo TR, Roy A. Spiritual conflicts associated with praying about cancer. *Psychooncology*. 1999;8:386-394.