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Religion, Senescence, and Mental Health:

The End of Life Is Not the End of Hope

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Abstract

The authors review epidemiological and survey research relevant to the relationships between religiousness/spirituality and mental health in people at the end of life, with the end of helping psychiatrists, psychologists, and other mental health professionals dealing with older Americans. They give special attention to well-being, religious coping, cognitive dysfunction, anxiety, depression, and suicide, and consider the extent to which hope is a mediator of the purported salutary effects of religiousness. Studies were selected from the comprehensive and systematic review of 20th-century scientific literature concerning religion and health. Authors also review current studies relevant to religion and end-of-life issues. Religious persons reported generally higher levels of well-being. The review also found fairly consistent inverse associations of religiousness with rates of depression and suicide. There was some negative association between religious participation and cognitive dysfunction, but the association with anxiety was inconsistent, with some studies showing a correlation between higher levels of religion and anxiety. Religion's effects on mental health are generally protective in direction but modest in strength.

Public opinion polls suggest that the United States is a very religious nation. The 1999 Gallup Poll reports that 94% of Americans believe in God or a higher power; an almost equal proportion of the population says that religion is very or fairly important in their lives.¹ Less than a majority of these respondents report weekly attendance at religious services, but American rates of religious service attendance are still higher than for almost all other developed countries.² Most Americans believe that religion and health are intimately related. A 1996 *Time/CNN* poll conducted by Yankelovich Partners reports that 77% of respondents believe that God sometimes intervenes to cure people who have serious illnesses.³ Furthermore, people act upon such beliefs. This same poll reports that 82% of Americans profess belief in the healing power of prayer. Also, research by Eisenberg and colleagues⁴ shows that Americans spend billions of dollars annually on "alternative" medical therapies, and many of these therapies have spiritual meanings associated with them.^{4,5}

For the past several decades, a consistent trend in Gallup Poll inquiries about religion is that older Americans—those in the 65–74 and 75+ age-groups—portray themselves as more religious than do their younger counterparts. Greater proportions of elderly respondents say that they attend religious services once per week or more and that they believe religion is “very important” in their lives. Such responses do not imply, however, that people become more religious at the end of life in the sense that nonreligious people become religious in the face of disease and death; in fact, there is limited empirical evidence to support this interpretation.⁶ Rather, it seems that people who were religious in younger life become more religious in old age. This is especially true in early old age—from 65 to 75—before disability might impede attendance at religious services and other religious activities.⁷

David Moberg and other gerontologists have offered several explanations for this intensified religiousness during senescence, during the period of aging that occurs toward the end of life.⁷ A cohort effect may contribute something to the Gallup results: the current generation of elderly persons may have grown up in a more religious cultural context than the one younger people experience today. It is doubtful, however, that this explains the entire phenomenon because the Gallup results are consistent over multiple generations. Some researchers cite social disengagement: as elderly persons retire from work and relinquish family responsibilities, they have more time and need for religious activities as forms of socialization. Psychological compensation is another possible factor: as elderly persons experience fewer rewards from work and family—and more challenges from illness and isolation—they seek a spiritual domain of reward and relief. That psychosocial factors figure prominently in explanations of intensified elderly religiousness underscores the importance of considering factors such as religion in research regarding the mental health of elderly persons.

Differential survival may also play a role: if religion promotes good health, then religious people are likely to survive longer and thereby make up a greater proportion of the elderly population than they did in younger cohorts.⁸ The role of various aspects of religiousness in bringing about lower levels of mortality was the question that prompted pioneering efforts in the epidemiological study of religion.^{9,10} Since the early 1970s, there has been a great increase in the number of epidemiological studies investigating religion’s influences on mental health outcomes.^{11–13} Many have been undertaken in elderly populations.^{14,15} The objective of this article is to review the epidemiological literature regarding the impact of religion on mental health at the end of life and to do so in a way that is helpful to psychiatrists, psychologists, and other mental health professionals dealing with elderly populations. Almost all of the studies reported below are relevant to the “end of life,” broadly construed to mean that part of the lifespan beyond 65 years of age. When it is interpreted more narrowly to mean the experience of being conscious of imminent death, the results regarding coping with pain, contemplating suicide, and postponing death are most directly relevant.

METHODS

The initial identification of relevant studies was mostly achieved by consulting the systematic and comprehensive review conducted by one of us with colleagues for the

Handbook on Religion and Health.¹² In preparation for the *Handbook* review, we made a literature search of electronic databases relevant to medicine (e.g., MEDLINE), psychology (e.g., PsychINFO), sociology (e.g., Sociofile) and nursing (e.g., Cumulative Index of Nursing and Allied Health Literature [CINAHL]). To find studies conducted before the advent of electronic databases, we followed references and footnotes in indexed articles and consulted previous reviews of the same topic. Studies were selected for review here if they dealt with elderly populations, concerned mental health outcomes, and were judged to be methodologically sound and/or of historical interest. Several studies that have appeared since the publication of the *Handbook* in 2001 were also included in the review. No criteria for the domain or measurement of religiousness were used, so the selected studies reflect the diversity of religious predictors used in the literature. (See Table 1.)

Two considerations shape the presentation of the research reviewed here. One is the life-course perspective of chronic disease epidemiology that emphasizes the impact of cumulative advantages and disadvantages on disease risk occurring later in life.^{16,17} This perspective is especially pertinent when considering religious exposure because the formation of religious beliefs in earlier life often establishes the characteristics of religiousness that become intensified among the young-old. Specifically, the contribution of religion to the well-being of older persons before the onset of serious disease is often an indication of the religious coping resources available to them as disability and disease increase.¹² Hence this review will identify the contributions that religiousness makes to well-being, discuss the phenomenon of religious coping, and then survey the association between various aspects of religiousness and various mental health outcomes. Topics will trace the common life trajectory, moving from relative well-being, to increasing disability and disease, and then to eventual death.

A second consideration that shapes the presentation of material is the prophetic character of the Biblical religions of Judaism, Christianity, and Islam, the religions with which almost all of the participants in the cited studies are affiliated. That so many Americans believe that God intervenes in people's lives to cure illness shows the influence of this type of religiousness. This influence is also evident in the prominence of hope for the future in Western religious traditions. (The phrase "hopelessly ill patients" is especially infelicitous for describing religious Americans approaching death.¹⁸). Sentiments of religious hope are periodically reinvigorated by religious holidays that celebrate historical experiences of deliverance. Through Persian influence, Judaism, Christianity, and Islam extend pious hope to an afterlife beyond worldly experience. A 1990 Gallup Poll found that 71% of Americans responded affirmatively when asked if they believed in life after death.¹⁹ After reviewing a trajectory of health outcomes, hope and optimism will be examined as possible mediators of the purported health benefits of religion for elderly persons.

RESULTS

Only one formal metaanalysis has been performed for religious predictors of health. The association between religious involvement and all-cause mortality—the most extensively studied topic in the field and probably the most robust result—has been estimated to have an odds ratio (OR) of 1.29 (95% confidence interval [CI]: 1.21–1.39).⁸ When restricted to

public practices like attendance at religious services, the OR was somewhat higher, at 1.43, but both parameter estimates were slightly reduced when regression models were adjusted for covariables. This quantitative context of modest effect sizes is relevant to the interpretation of the qualitative results that follow.

Well-Being

During the past 50 years, various studies have found aspects of religiousness to be positively associated with well-being, conceived in a nonclinical sense as life satisfaction or happiness. In some of the initial research regarding religion and aging conducted by Moberg and colleagues in Minnesota and surrounding states, it was found that membership in a religious organization was positively associated with “personal adjustment,” as measured by the Burgess-Cavan-Havighurst Attitudes Inventory.²⁰ (A smaller, earlier study showed weaker associations.²¹) This measure included self-reported components of happiness, enjoyment, satisfaction, and usefulness. The study was cross-sectional and controlled for sociodemographic variables and potential confounders such as social participation and self-reported health.

Subsequent studies have established positive associations between measures of religiousness and well-being in racially diverse populations. Attendance at religious services has been found to be a predictor of greater life satisfaction in elderly Mexican-American women, but not men,²² and among elderly Chinese residents of Hong Kong.²³ In a longitudinal study of Mexican Americans, Markides and colleagues found similar relationships between religiousness and life satisfaction.²⁴ Coke found religion to be a correlate of life satisfaction in an African-American cohort,²⁵ and Krause found that, in an African-American sample he studied, a subjective measure of religiousness was positively associated with emotional support and self-esteem in a structural-equations analysis;²⁶ religious-service attendance, however, was not significantly associated with these outcomes. Among African Americans, also, Levin and Taylor have done longitudinal studies showing that subjective religiousness affects life satisfaction over time.²⁷

Religiousness has also been found to be associated with life satisfaction in special populations such as nursing home residents.²⁸ When religiousness was measured by the Intrinsic/Extrinsic Religiosity Scale and life satisfaction by the Life Satisfaction Index, the authors report a strong correlation between intrinsic religiosity and life satisfaction, even after controlling for sociodemographic variables and health status. Another special population in which religion has been associated with quality of life is cancer patients.²⁹ Giorella et al.³⁰ found a correlation between levels of spirituality as measured by the Spiritual Well-Being Scale and quality of life as measured by the Functional Living Index: Cancer. In this sample drawn from patients with gynecologic cancer, the effect was particularly strong among older patients.

Feelings of optimism and hope have been theorized to be potential mediators of the impact of religiousness on well-being. In some studies, optimism and hope have been regarded as outcomes themselves. For instance, in a pair of studies, Sethi and Seligman^{31,32} found that members of conservative or fundamentalist religious groups (Orthodox Judaism, Calvinism, Islam) were more optimistic than their liberal counterparts (Unitarianism, Reform Judaism).

A number of other studies have found religious respondents more hopeful or optimistic than nonreligious ones,^{33–35} although others have failed to find this association.³⁶

Religious Coping With Disease and Disability

Coping consists of the cognitions and behaviors that people use in stressful situations to avoid or minimize emotional distress and psychological instability. The stressful situation may concern a person's own health, but it may also be occasioned by the death of loved ones or by financial loss or other stressors.^{37,38} Thus, coping occurs both among the well and the ill. Coping can complement rational problem-solving but is not necessarily identical with it because it draws upon emotional, social, and other resources that are not strictly limited to cognitive resources. Religious and spiritual resources have been shown to be helpful for managing pain^{39,40} and improving life satisfaction during illness, including terminal illnesses like advanced cancer.^{34,41}

Religious coping strategies occur in positive and negative varieties.^{42,43} Positive religious coping is characterized by "a secure relationship with God, a belief that there is meaning to be found in life, and a sense of spiritual connectedness with others." Negative religious coping is expressive of "a less secure relationship with God, a tenuous and ominous view of the world, and a religious struggle in the search for significance."⁴⁴ The attributes of insecurity, struggle, and ominousness in negative religious coping suggest that it emerges from a less hopeful religious disposition.

In a study of medically ill men admitted to a Veterans hospital without a psychiatric diagnosis, Koenig and colleagues⁴⁵ measured the frequency of religious coping and depressive symptoms at admission. They found that approximately 20% of the men reported that religious thought and activity were the most important ways in which they coped with their illness. They also found that religious coping was inversely associated with the level of depressive symptoms, an association that remained significant after controlling for sociodemographic variables and potential confounders. Furthermore, in a subsample of men who were subsequently readmitted to the hospital, on average about 6 months later, they found that religious coping was the only baseline covariable that predicted lower scores on the Geriatric Depression Scale at follow-up.

Koenig and colleagues did not explicitly differentiate between positive and negative modalities of religious coping in their study. More recent studies have done so, however. One examined "religious struggle" as a predictor of mortality among medically ill elderly patients.⁴⁶ After controlling for sociodemographic, physical health, and mental health variables, higher levels of religious struggle at baseline were predictive of somewhat greater risk of mortality in a Cox proportional-hazards model.

Cognitive Dysfunction

Some level of cognitive decline is a reality with which even healthy older persons must cope.^{47,48} Only recently have epidemiological studies investigated whether being religious is associated with levels of cognitive dysfunction experienced by elderly persons. Using data collected at the New Haven, Connecticut, site of the Established Populations for Epidemiologic Study of the Elderly (EPESE) program of the National Institute on Aging,

Bassuk and colleagues⁴⁹ found that those non-institutionalized elderly persons who were relatively socially disengaged experienced greater cognitive decline over the 12 years of the longitudinal study. Attendance at religious services was one of the six components of a scale composed by the authors that sought to measure the extent of the respondents' social disengagement. Other components of the scale included regular social activities and group memberships; Bassuk and colleagues contend that "no particular type of social contact is essential." They controlled for baseline cognitive status, sociodemographic and biomedical covariables, and other potential confounders.

Van Ness and Kasl⁵⁰ investigated the association between two measures of religiousness and levels of cognitive dysfunction in this same cohort, using measures of religiousness that were both more specific and more varied. They controlled for baseline cognitive status and other covariables, and especially for the other components of social engagement in the scale used by Bassuk and colleagues. Higher levels of religious attendance at baseline, but not of subjective religiousness, were significantly associated with lower levels of cognitive dysfunction after 3 years. This association was no longer present after 6 years; however, the authors found that differential rates of mortality were partially responsible for the short-term nature of the effect. Specifically, they found evidence that infrequent religious-services attendees and persons with relatively high levels of cognitive dysfunction at baseline died at greater rates between 1985 and 1988 than did their counterparts. Thus, infrequent service attendees in 1982 who became cognitively impaired by 1985 were more likely to die by 1988. Their absence militated against finding statistically different levels of cognitive dysfunction in the 1988 comparison groups.

Van Ness and Kasl argued that religious attendance might have an independent effect that differentiates it from other forms of social engagement. Attending religious services may be a more beneficial form of social engagement than visiting with family members or shopping with friends at the mall. Because participation in worship services (as opposed to mere attendance at them) typically involves a wide array of intellectual abilities, such participation may be a more potent inhibitor of cognitive decline than some other forms of social activity.

Cognitive dysfunction and clinically diagnosed dementia are among the afflictions of old age that elderly people fear most. It is also feared by potential caregivers of elderly relatives because of their concern for loved ones and also because of the great stresses they incur in providing relevant care.⁵¹ Research shows that religion is one of the primary resources that caregivers draw upon for strength and consolation as they undertake the care of family members with Alzheimer disease and related disorders.^{52–54}

Anxiety

The results regarding the religion and anxiety relationship are more mixed and inconclusive than for other outcomes reviewed.⁵⁵ (See Table 2; for a detailed table summarizing descriptive, methodological, and outcome data for almost all of the studies reviewed here, see Part VIII of the *Handbook of Religion and Health* [pp 511–589]¹²).

Harold Koenig and colleagues analyzed data from the Piedmont site of the National Institute of Mental Health's Epidemiologic Catchment Area (ECA) survey—the only one of the five ECA surveys to include items about respondents' religious beliefs and behavior.⁵⁶ Cross-sectional results were stratified by young, middle-aged, and elderly cohorts. For older Americans, anxiety sometimes occurs because of concerns about disease, disability, and imminent death; yet, for the elderly cohort, the associations were neither positively nor negatively significant.

This lack of association may be explained by the fact that different types of religiousness are related to anxiety disorders in different ways. Although Sigmund Freud's description of religion as "a universal obsessive neurosis" is unequivocal,⁵⁷ other classic views point to diversity in religious dispositions. James's distinction between "the religion of healthy-mindedness" and "the sick soul" illustrates such diversity.⁵⁸ More influential on epidemiological research has been Gordon Allport's distinction between "intrinsic religiosity" and "extrinsic religiosity."⁵⁹ Briefly, the former is characteristic of people who embrace religious beliefs and behaviors for expressly spiritual reasons. The latter describes people whose religiousness is partially a product of their desires for nonreligious goods, such as social status or economic benefits. Some research studies have found intrinsic religiosity to be negatively associated with anxiety outcomes, whereas extrinsic religiosity is positively associated with the same outcomes. For instance, Tapanya and colleagues⁶⁰ found this result for Buddhists in an elderly sample.

Thorson and Powell⁶¹ investigated the association between intrinsic religiousness and death anxiety. An initial study was inconclusive, but in two later ones, they found that respondents who were older and who scored high on the Hoge scale, measuring intrinsic religiosity, had less anxiety about death.^{62,63} These studies were cross-sectional, however, and hence were not able to establish temporal relationships. Mixed results in such studies may be due to the fact that in some cases established religious dispositions help people cope effectively with anxiety, whereas, in others, people embrace religious beliefs after a stressful situation or illness has arisen. In a related context, Neeleman and Lewis⁶⁴ report that schizophrenic patients were more likely to report religious experiences than medical control patients in their cross-sectional study sample. Further longitudinal studies are needed in order to clarify such differences.

Depression

Research cited above showed a fairly consistent positive relationship between religiousness and life satisfaction but a less consistent relationship with anxiety. Some studies show aspects of religiousness to be associated with lower levels of depression,^{65,66} whereas others fail to find such an association.^{67,68} Still others find a salutary inverse association for some subgroups but not for others.^{69,70} This topic has been studied more extensively than other mental health outcomes, and so the literature reflects a number of different study designs, sample populations, and outcome measures. (Most epidemiological studies cited here use measures of depressive symptoms and establish a threshold value distinguishing depressed from nondepressed respondents; a few identify depression by means of clinical diagnosis and are so indicated.) This may explain part of the variability in reported results.

McCullough and Larson,⁷¹ for example, found, in their review of religion and depression, a fairly consistently protective impact of religiousness when measured in terms of public practices, but a less consistent relationship for private religious practices.

High levels of religiousness have been found to be associated with low levels of depression in several respects. In a previously cited study by Koenig and colleagues,⁴⁵ where religious affiliation was a predictor variable, the group of respondents who reported no religious affiliation had higher levels of depressive symptoms. Similar risks for persons lacking any religious affiliation have been reported among African-American study samples.^{69,72} There is also some evidence that Pentecostal Christians and Jews are at increased risk of depression.⁷¹ These positive associations should be interpreted cautiously, however. Given the relatively large proportion of current Pentecostals who have joined this religious community later in life, there is a possibility of a selection effect in which depressed people seek relief for their symptoms from Pentecostal religion. For instance, results of this sort were reported in a well-controlled but cross-sectional study by Meador and colleagues,⁷³ and are vulnerable to this interpretation. Regarding Jewish respondents, studies rarely distinguish between religiousness and ethnicity as grounds for their self-identification as Jews.⁷⁴

Depression sometimes occurs among patients suffering from serious medical illness. Given the increased likelihood of disease and disability among elderly patients, clinical contexts for depression are especially relevant.^{45,75,76} One strategy for studying the impact of religiousness on depression in clinical contexts is to observe whether religious respondents experience remission of depression more readily than do nonreligious counterparts. Koenig and colleagues conducted a study of this design among a sample of hospitalized older patients and found that high scores on a measure of intrinsic religiousness predicted shorter time-to-remission from diagnosed depression during a follow-up period with median duration of 30 weeks.⁷⁷ Importantly, neither measures of religious-service attendance nor private religious activities predicted such salutary outcomes.

In a longitudinal study of data from Alameda County, California, Strawbridge and colleagues⁷⁷ found that a variable for organizational religiousness, encompassing attendance at religious services and other religious activities, was inversely associated with levels of depressive symptoms. A variable for private religiousness, that is, frequency of prayer and two measures of the importance of religious and spiritual beliefs, was not significantly associated with this same outcome. Further analysis focused on interaction terms created between a religious predictor and specific stressors grouped into family and non-family stressors. Analyses of these interaction terms indicated that for some non-family stressors, for example, financial problems, fair or poor health, and chronic illness, religiousness “buffered” the association between a given stressor and depression. It did so in the sense that, in this community sample, persons with higher levels of religiousness had lower levels of depressive symptoms consequent to the stressor than did similarly stressed respondents with lower levels of religiousness. Further analyses indicated that religiousness had an exacerbating effect for some family stressors, such as abuse, caregiving, and marital problems.

Suicide

The relationship between suicide and religion is one of the oldest in the epidemiological literature. Emile Durkheim addressed the topic in his influential 1897 text, *Suicide: A Study in Sociology*.⁷⁸ He reported a correlation between higher rates of suicide in predominantly Protestant regions in northern Europe and lower rates of suicide in largely Roman Catholic regions in southern Europe and among Jews. He interpreted these results by describing Roman Catholic and Jewish communities as more traditional and integrated, or, to put it more pointedly, as lacking the “spirit of free inquiry” characteristic of most Protestant countries. Thus, in Durkheim’s view, suicide is less common in those groups, religious or secular, having higher degrees of social integration. The ecological nature of his data—reporting rates of suicide and religious affiliation for population groups rather than for individuals—did not enable testing of the hypothesis that some aspect of religiousness predicted lower levels of completed suicide.

Sociologists have sought to replicate Durkheim’s findings in different populations and with more rigorous study designs. In general, they have found that the percentage of residents in a region participating in religious organizations is inversely proportional to the rates of suicide in that region.⁷⁹ They differ somewhat in whether or not the role of religious participation is independent of measures of social integration. Breault and Barkey found religious integration to be a significant predictor of lower suicide rates in a way that is independent of the comparably significant predictors of political and family integration.⁸⁰ On the other hand, Bainbridge⁸¹ found that the association between religious involvement and suicide became nonsignificant when measures of social integration were added to the multivariate regression models.

Suicide rates are higher among older people than among younger age-groups, and these rates have been increasing in recent years.^{82,83} Nisbet and colleagues⁸⁴ have recently provided results regarding religion and suicide that are most definitive and relevant for this older age-group. They investigated the relationship between participation in religious activities and suicide in data from the 1993 National Mortality Followback Survey, looking exclusively at data from people who died at age 50 or older. In a logistic-regression analysis that controlled for sociodemographic and social contact variables, they found that frequent participation in religious activities reduced the likelihood that respondents would commit suicide. For instance, persons who reported never engaging in religious activities were more than four times as likely to die from suicide instead of natural death than were people who participated daily in religious activities. Intermediate grades of religious involvement—more frequently than never but less frequently than daily—yielded intermediate ORs with a generally consistent gradient. On the other hand, visiting or talking with friends or relatives did not significantly reduce a person’s risk of death by suicide, and so was not a mediator of the association of religious activities with suicide.

Previously, some of these same researchers had shown that a subjective measure of religiousness asking about the role of religion in one’s life was inversely related to five statements to which agreement suggested lenient views toward suicide.⁸⁵ One such statement said that physician-assisted suicide should be legal in some circumstances, and

another said that committing suicide is a personal decision in which others should not be involved. The data were drawn from the 1992 Gallup Poll that included only respondents 60 years of age or older.⁸⁶ In the initial Gallup analysis, study participants who viewed religion as having a major role in their lives gave a lower level of agreement to all five questions than did persons who viewed religion's role as minor or "little-to-none." In multivariate logistic-regression models controlling for sociodemographic attributes, the dimensions of self-rated health, satisfaction with personal relationships, and higher levels of religiousness predicted lower levels of agreement with statements expressing an approving view of physician-assisted suicide or of societal respect for suicide by elderly persons.

Depression and, to a lesser extent, hopelessness, are established risk factors for suicide among elderly persons.^{87,88} They are also associated with desires for hastened death⁸⁹ and suicidal ideation.⁹⁰ There has not, however, been much research to determine whether either of them are mediators of the rather well demonstrated inverse association between public practice measures of religiousness and suicide.

Postponement of Death

In a 1988 study, David Phillips and Elliot King examined the distribution of Jewish and non-Jewish deaths relative to Passover for an 18-year period.^{91,92} They found that Jews, and especially Jewish men, experienced a significantly less than expected number of deaths in the week before Passover and a significantly greater than expected number of deaths in the week afterward. This "dip/peak" pattern surrounding Passover was not evident in Asian- and African-American control groups. Ellen Idler and Stanislav Kasl report similar religiously correlated patterns of mortality distribution around Passover and Easter in an elderly population residing in New Haven, Connecticut.⁷⁰ In these studies, death seems to be postponed briefly from the end of one cycle of religious festivals to the beginning of a new cycle, expressing the religious hope that death is not simply a random exhaustion of worldly life: it can be a meaningful prefigurement of something new.

Potential Mediators of the Health Benefits of Religiousness

What might mediate the association between aspects of religiousness and various mental health outcomes in later life? Koenig and colleagues examined physical health and social support as potential mediators.⁹³ They report that religious attendance was negatively associated with depressive symptoms and positively associated with physical health, and regression models gave some evidence for physical health being a mediator of the religious-service attendance association with depression. Somewhat surprisingly, there was no comparable evidence for social support being a mediator of this association, because it was not significantly associated with religious attendance.⁹⁴

Murphy and colleagues investigated hopelessness with a similar intention of identifying it as a mediator.⁹⁵ They found that religious belief, as measured with the Religious Well-Being Scale, was negatively associated with hopelessness, as measured with the Beck Hopelessness Scale. Also, greater hopelessness predicted more depressive symptoms. However, religious belief was positively associated with depression, and so the conditions for mediation were not fully met.⁹⁴ The cross-sectional nature of the study might explain

this last result—in the sense that depression might have led people to an intensification of their religious beliefs. The challenge of demonstrating definitively that hope or its absence is a mediator of the benefits of religiousness for the mental health of elderly persons remains an elusive goal.

CONCLUSIONS

Several considerations suggest caution in assessing the literature reviewed above. A general one concerns the potential predisposition on the part of some editors, researchers, and respondents toward a finding that religion is good for one's health. Such predispositions may result in publication bias, reporting bias, and/or social-desirability bias. More specifically, many of the studies reviewed were cross-sectional and did not allow for judgments about the temporal relationships between religious exposure and health outcomes. Second, in most reports of significant associations, the effect sizes were relatively small, characteristically with ORs ranging from 1 to 3. Third, almost all of the studies reviewed used several measures of religiousness, and many included multiple health outcomes. Thus, analyses included more than one opportunity for finding an association between some aspect of religiousness and some health outcome. Since few researchers explicitly altered the observed level of significance (usually at $p = 0.05$) to take into account these multiple comparisons, they are vulnerable to the criticism that reported results are more readily explicable by chance variation than the published p values suggest. Certainly, results with very low p values would not be as vulnerable to such criticism as would studies with p values close to the observed level of significance, for instance, 0.05. More longitudinal studies, with larger sample sizes and fewer hypotheses about the association of specific aspects of religiousness and with specific mental health outcomes are needed.

Other factors might have militated against the reporting of significant results. Smaller studies may not have had the power to detect the relatively small effect sizes that are common in the epidemiological study of religious factors affecting health. Even if larger studies yield statistically significant results, the small effect sizes may not establish that religiousness has clinical significance. Most studies measure religiousness with only a small number of questions to which respondents gave unverified self-reports. Some research suggests that the Gallup Poll estimates of weekly service attendance approaching 40% of the American population are considerably inflated.⁹⁶ Random measurement error and inflated reports of religiousness are probably fairly common, and they could push measures of the magnitude of the association between religion and mental health outcomes toward the null value. In a new set of measurement instruments published by the Fetzer Institute and sponsored by the National Institute on Aging, leading researchers in the field have provided validated tools that might make future studies more precise and consistent. Still, it may be that religiousness/spirituality is resistant to precise measurement in ways that brief epidemiological instruments cannot overcome.

Even with the above-discussed limitations, epidemiological studies of the impact of religiousness on the health of elderly Americans portray generally salutary effects. By contributing to the sense of well-being among elderly persons, religion provides resources that can help them cope with the afflictions and challenges they face in the final years of

their lives. The general character of these resources is suggested by the fact that some experiences of religiousness and senescence are similar. Both religiousness and senescence characteristically involve a departure from the linear and proximal experience of time that characterizes contemporary working life. Both religious and elderly people cultivate and especially value experiences of periodic renewal that bring families and communities together. Occasions that affirm religiousness, for example, holy days, and ones affirming senescence, for example, elders' birthdays, invoke memories of previous times and prefigurations of future times; religion typically portrays these memories and anticipations in more communal forms.

Religion also provides elderly Americans with hope that helps them overcome increasing disease, disability, and emotional difficulties. In this sense, an elderly patient's religiousness can complement the efforts of physicians and other healthcare providers. Healthcare providers offer finite hope in the face of disease and aging; religious counselors offer an infinite hope amidst the realities of aging and death.⁹⁷ For adherents to Western religious traditions, this infinite hope may take the form of belief in a life after death. Such a hope may be interpretable as a symbol of personal integrity that survives the indignities of illness, disability, and dissolution.

Religious persons report generally higher levels of life satisfaction and other subjective measures of well-being. The review also found fairly consistent inverse associations of religiousness with rates of depression and suicide. Few studies of the impact of religiousness on cognitive dysfunction have been conducted, but two studies show some evidence of benefit. The association with anxiety was inconsistent, with some studies showing a positive correlation between levels of religion and anxiety. In summary, religion's effects on the mental health of elderly people are generally protective in direction but modest in strength. The effects of public practices like attendance at religious services are mostly more potent than subjective self-descriptions of religiousness. Many Americans report religious beliefs and behaviors; religiousness is a factor applicable in some degree to most elderly Americans. Thus, further investigation is warranted to clarify the relationships between religion, senescence, and mental health.

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TABLE 1

Domains of religiousness and ways of measuring them^a

Domain of Religiousness	Representative Questions	Illustrative Levels/Cutpoints
Religious preference	At the present time, what is your religious preference?	None; Roman Catholic, Protestant, Jewish, Muslim
Organizational (public) religiousness	How often do you attend religious services?	Less than once a week vs. once a week or more
Private religious practices	How often do you pray privately?	8-step Likert scale: "Never" to "Several Times Daily"
Spiritual experiences (Nontheistic/Theistic)	Do you feel deep inner peace or harmony? Do you feel God's presence?	6-step Likert scale: "Never or Almost Never" to "Many Times Daily"
Religious/Spiritual coping (Positive/Negative)	Do you work together with God as partners? Do you get angry at God?	4-step Likert scale: "Not at All" to "A Great Deal"
Religious beliefs ^b (Identity)	How much is religion a source of strength and comfort?	None/A little/A great deal

^aExcerpted and adapted from *Multidimensional Measurement of Religiousness/Spirituality for Use in Health Research*, Kalamazoo, MI, Fetzer Institute, 1999.

^bIntrinsic religiosity represents a similar domain of religiousness.

TABLE 2Percentages of studies reporting a health benefit of religion for selected outcomes^a

Health Outcome ^b	Positive Associations	Total Number of Studies	% (Positive/Total)
Well-Being	79	100	79
Hope	12	14	86
Meaning	15	16	94
Anxiety	41	76 ^c	54
Depression	65	101	64
Suicide	57	68	84

^aExcerpted and adapted from Koenig HG, Larson DB: Religion and mental health: evidence for an association. *Int Rev Psychiatry* 2001; 13:67–78.⁵⁵

^bThese are generic categories and, in some cases, summarize several subcategories cited in the article by Koenig and Larson.

^cTen studies showed statistically significant negative associations between religiousness and levels of anxiety.