Religious Struggle as a Predictor of Mortality Among Medically Ill Elderly Patients

A 2-Year Longitudinal Study

Kenneth I. Pargament, PhD; Harold G. Koenig, MD; Nalini Tarakeshwar, MA; June Hahn, PhD

**Background:** Although church attendance has been associated with a reduced risk of mortality, no study has examined the impact of religious struggle with an illness on mortality.

**Objective:** To investigate longitudinally the relationship between religious struggle with an illness and mortality.

**Methods:** A longitudinal cohort study from 1996 to 1997 was conducted to assess positive religious coping and religious struggle, and demographic, physical health, and mental health measures at baseline as control variables. Mortality during the 2-year period was the main outcome measure. Participants were 596 patients aged 55 years or older on the medical inpatient services of Duke University Medical Center or the Durham Veterans Affairs Medical Center, Durham, NC.

**Results:** After controlling for the demographic, physical health, and mental health variables, higher religious struggle scores at baseline were predictive of greater risk of mortality (risk ratio [RR] for death, 1.06; 95% confidence interval [CI], 1.01-1.11; \( \chi^2 = 5.89; P = .02 \)). Two spiritual discontent items and 1 demonic reappraisal item from the religious coping measure were predictive of increased risk for mortality: “Wondered whether God had abandoned me” (RR for death, 1.28; 95% CI, 1.07-1.50; \( \chi^2 = 5.22; P = .02 \)), “Questioned God’s love for me” (RR for death, 1.22; 95% CI, 1.02-1.43; \( \chi^2 = 3.69; P = .05 \)), and “Decided the devil made this happen” (RR for death, 1.19; 95% CI, 1.05-1.33; \( \chi^2 = 5.84; P = .02 \)).

**Conclusions:** Certain forms of religiousness may increase the risk of death. Elderly ill men and women who experience a religious struggle with their illness appear to be at increased risk of death, even after controlling for baseline health, mental health status, and demographic factors.

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A number of studies have documented a positive and robust relationship between religiousness and reduced risk of mortality. More frequent church attendance, in particular, has been predictive of lower risk of mortality, after controlling for other confounding effects. Private forms of religiousness (eg, personal religiousness, frequency of prayer, comfort from faith) have been less consistently and less strongly associated with mortality. Studies in this area have generally relied on global benign measures of religiousness (eg, frequency of church attendance, self-rated religiousness). The form of these measures does not allow for the possibility that specific negative religious beliefs and behaviors may increase the risks of mortality.

A few empirical studies indicate that certain negative forms of religiousness, while less common than positive religious expressions, may impact negatively on health status. In a study of medically ill hospitalized older adults, poorer health (eg, number of medical diagnoses, impairments in activities of daily life, self-rated health) was associated with indicators of religious struggle, including reports of anger at God, feeling punished by God, and believing that the devil was at work in the illness. In another study of medical rehabilitation patients, the patients’ anger at God was predictive of poorer physical recovery 4 months later.

No study as yet, to our knowledge, has examined whether certain negative forms of religiousness may increase the risk of mortality among those suffering from a medical illness. Conceivably, religious distress and struggle associated with an illness may exacerbate the effects of the illness and increase the risks of mortality.

In this study, we sought to determine whether religious struggle with an illness increases the risks of mortality in
SUBJECTS AND METHODS

STUDY POPULATION

The initial sample for this study consisted of 596 persons aged 55 years or older who were hospitalized on the medical inpatient services of Duke University Medical Center, Durham, NC, or the Durham Veterans Affairs Medical Center, Durham, between January 1, 1996, and March 31, 1997. The older patient population in both hospitals is almost exclusively (>95%) Christian, with a majority of patients representing conservative (eg, Baptist) or mainline (eg, Methodist) Protestant denominations. Detailed information about religious coping as well as physical and mental health were collected through interviews with these patients at the baseline hospital evaluation after their verbal informed consent was obtained, documented by the interviewer’s signature or witnessed by a third person. A research assistant attempted to locate and contact by telephone each of the 596 patients, beginning with those first enrolled in the study in January 1996. Of the 596 patients, 268 survivors were located, 176 were identified as deceased, and 152 were either unable to be located or unable or unwilling to respond to the follow-up interview. Those unavailable for follow-up (25.5%) were disproportionately represented in the Veterans Affairs Medical Center, tended to be from a lower socioeconomic class, were more migratory, had fewer social connections, and were, therefore, more difficult to locate. The average number of days between baseline and follow-up was 632 (range, 381-986). The confirmation of death and date of death occurred through direct contacts with family members (50%), review of vital records in Raleigh, NC (25%), review of Duke University Medical Center or Durham Veterans Affairs Medical Center records (15%), or a search of the National Death Index (10%). This project was approved by the institutional review boards at Duke University Medical Center and Bowling Green State University, Bowling Green, Ohio.

RESULTS

Table 1 reports the comparison between survivors and deceased on demographic, physical health, mental health, positive religious coping, religious struggle, and global religious variables at baseline. Compared with the deceased, survivors were significantly younger and more educated at baseline. In addition, a larger proportion of survivors were white. With respect to physical health, in comparison with the deceased, survivors manifested significantly fewer active medical diagnoses, less severe ratings of illness, better subjective health, more independent functional status, and better cognitive functioning at baseline. In terms of mental health, survivors also reported better mood and better quality of life at baseline than participants who died before follow-up. With respect to positive religious coping and religious struggle, both groups reported low levels of religious struggle. However, in comparison with the deceased, survivors reported lower levels of religious struggle at baseline. In terms of the global religious indexes, survivors indicated that they attended church more frequently than participants who died before follow-up.

RELIGIOUS COPING

Positive religious coping and religious struggle with the illness at baseline were measured with the Brief RCOPE. This is a 14-item questionnaire that assesses the extent to which the patient uses specific methods of religious coping. Positive religious coping consists of 7 items that measure seeking spiritual support, seeking a spiritual connection, collaborating with God in problem solving, religious forgiveness, and benevolent religious appraisals of the illness. Religious struggle was measured by the negative religious coping subscale, which is made up of 7 items that assess punishing God appraisals, interpersonal religious discontent, demonic appraisals, spiritual discontent, and questioning God’s powers. Patients indicate how often they engage in each form of religious coping on a 4-point scale from 0 (not at all) to 3 (a lot). This instrument has demonstrated good construct validity and internal consistency in medical settings and among people facing major life crises. With respect to test-retest reliability, religious coping attitudes in older medical patients are generally stable over time (eg, >0.80). Measures of coping activities, however, are not expected to show high levels of stability because coping presumably changes during the course of hospitalization, treatment, and discharge. Nevertheless, among the survivors in this study, religious coping at baseline and follow-up were significantly intercorrelated according to both positive (r = 0.73, P < .05) and negative (r = 0.43, P < .05) religious coping subscales.

GLOBAL RELIGIOUSNESS

To provide a point of comparison with previous studies of religiousness and mortality, 3 traditional indexes of global religiousness were included. Patients indicated how often they attended church or other religious meetings on a 6-point scale from 6 (more than once a week) to 1 (never). They reported how often they spent time in private religious activities, such as prayer, meditation, or Bible study.
terated into the equations in hierarchical form in the same manner as above. Two spiritual discontent and 1 demonic reappraisal item were identified as predictors of increased risk for mortality after controlling for demographic, physical health, and mental health variables: “Wondered whether God had abandoned me” (RR, 1.28; 95% CI, 1.07-1.50; \( \chi^2 = 5.22; P = .02 \)), “Questioned God’s love for me” (RR, 1.22; 95% CI, 1.02-1.43; \( \chi^2 = 3.69; P = .05 \)), and “Decided the devil made this happen” (RR, 1.19; 95% CI, 1.05-1.33; \( \chi^2 = 5.84; P = .02 \)). One punishing God reappraisal item (“Felt punished by God for my lack of devotion”) was marginally predictive of mortality after controlling for demographic variables (RR, 1.16; 95% CI, 1.00-1.32; \( \chi^2 = 3.57; P < .06 \)) but not after controlling for physical health and mental health.

Additional Cox regression analyses were conducted on the effects of the global religious variables on mortality after controlling for demographic, physical health, and mental health variables. Consistent with previous studies, more frequent church attendance was associated with a lower risk of mortality (RR, 0.87; 95% CI, 0.75-0.97; \( \chi^2 = 5.67; P = .02 \)). When church attendance was entered into a Cox regression analysis with positive religious coping and religious struggle as well as the control variables, religious struggle continued to predict mortality significantly (RR, 1.05; 95% CI, 1.00-1.10; \( \chi^2 = 4.37; P = .04 \)) and church attendance was only marginally significant (RR, 0.88; 95% CI, 0.77-1.00; \( \chi^2 = 3.49; P < .06 \)).

Several empirical studies have shown that religious involvement is predictive of lower mortality. To our knowledge, this is the first empirical study to identify religious variables that increase the risk of mortality. Religious struggle was associated with greater risk of mortality. Although the magnitude of the effects associated with religious struggle was relatively small (from 6% to 10% increased risk of mortality), the effects remained significant even after controlling for a number of possible confounding variables, including demographic, physical health, and mental health variables. Furthermore, we were able to identify specific forms of religious struggle that were more predictive of mortality. Patients’ reports that they felt alienated from or unloved by God and attributed their illness to the devil were associated with a
Further analyses showed that religious struggle was predictive of mortality, while other variables that have been implicated in longevity were not. For instance, mortality was not predicted by race, diagnosis, cognitive functioning, independence in daily activities, depressed mood, or quality of life.

It could be argued that these results are idiosyncratic to a distinctive sample. Contrary to this interpretation, however, frequency of church attendance was associated with reduced risk of mortality in this study, as has been reported by several other researchers. In addition, as would be expected, in this sample, risk of mortality was related to age, ratings of illness severity, and subjective ratings of poorer health. Nevertheless, additional research is needed to determine whether these findings, based on a predominantly conservative and mainline Christian sample, are generalizable to other religious groups, including those in which religious struggles may be more normative or take other forms. In this vein, theologians from different religious traditions have suggested that at least some forms of religious struggle (eg, questions about God, practice, doctrine) are prerequisites to spiritual maturity.

Questions could also be raised about the percentage of patients (25.5%) who were unavailable for follow-up. This rate of attrition is higher than we would have preferred and represents a weakness of the study. Nevertheless, follow-up rates of 70% to 80% are commonplace in longitudinal studies and are usually deemed acceptable. Furthermore, religious struggle was predictive of greater risk of dying even after statistical adjustments for potential biases in patient attrition.

Why should religious struggle increase the risk of dying? One possibility is that religious struggle causes poorer physical health. In support of this explanation, further analyses showed that religious struggle was predictive of declines in independence in daily activities among the survivors in this sample. Similarly, Fitchett et al found that the negative religious coping scale from the Brief RCOPE was predictive of significant declines over time in the same measure (activities of daily living) among a sample of medical rehabilitation patients. On the other hand, religious struggle was not generally predictive of declines in other measures of physical health among survivors in our sample, including subjective health, severity of illness ratings, and cognitive functioning. Nevertheless, religious struggle may go hand in hand with declines in immunologic functioning or other health indexes that were not examined in this study.

Another possible explanation is that religious struggle is associated with emotional or personality differences that relate directly or indirectly to mortality. Other cross-sectional studies have shown that religious struggle is related to higher levels of emotional distress and symptoms of posttraumatic stress among survivors of the Oklahoma City bombing. Similarly, Exline and colleagues found that 2 dimensions closely related to religious struggle, difficulty forgiving God and alienation from God, were associated with higher levels of depression and anxiety. However, it is important to remember that religious struggle was predictive of mortality in this study, even after controlling for depressed mood and quality of life, 2 variables that tap into dimensions of emotional and personality. Nevertheless, the critical emotions here may have more to do with fear, anxiety, guilt, and anger and less to do with sadness and loss. The specific RCOPE items that were most predictive of mortality (wondered whether God had abandoned me; questioned God’s love for me; de-

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Survivors (n = 268)</th>
<th>Deceased (n = 176)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, y</td>
<td>67.2 (8.0)</td>
<td>69.0 (9.0)</td>
<td>.04</td>
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<tr>
<td>Race, % black</td>
<td>32</td>
<td>38</td>
<td>.02</td>
</tr>
<tr>
<td>Sex, % F</td>
<td>50</td>
<td>42</td>
<td>.08</td>
</tr>
<tr>
<td>Hospital, % Duke</td>
<td>79</td>
<td>77</td>
<td>.69</td>
</tr>
<tr>
<td>Education, y</td>
<td>11.7 (6.0)</td>
<td>10.6 (3.9)</td>
<td>.05</td>
</tr>
<tr>
<td>Diagnoses, No.</td>
<td>5.0 (2.1)</td>
<td>5.6 (2.2)</td>
<td>.006</td>
</tr>
<tr>
<td>Subjective health score</td>
<td>2.0 (0.8)</td>
<td>1.8 (0.8)</td>
<td>.004</td>
</tr>
<tr>
<td>ADL score</td>
<td>25.3 (4.7)</td>
<td>26.8 (5.4)</td>
<td>.006</td>
</tr>
<tr>
<td>ASA score</td>
<td>2.8 (0.8)</td>
<td>3.2 (0.8)</td>
<td>.001</td>
</tr>
<tr>
<td>MMSE score</td>
<td>15.7 (2.5)</td>
<td>14.5 (3.0)</td>
<td>.001</td>
</tr>
<tr>
<td>Depressed mood</td>
<td>14.8 (2.7)</td>
<td>15.3 (2.8)</td>
<td>.07</td>
</tr>
<tr>
<td>Quality of life</td>
<td>6.7 (2.0)</td>
<td>6.1 (2.1)</td>
<td>.006</td>
</tr>
<tr>
<td>Positive religious coping</td>
<td>14.8 (6.4)</td>
<td>15.2 (5.8)</td>
<td>.54</td>
</tr>
<tr>
<td>Religious struggle</td>
<td>2.3 (3.3)</td>
<td>3.1 (4.0)</td>
<td>.04</td>
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<tr>
<td>Church attendance</td>
<td>4.1 (1.7)</td>
<td>3.7 (1.8)</td>
<td>.04</td>
</tr>
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<td>Private religious activities</td>
<td>5.2 (1.4)</td>
<td>5.2 (1.5)</td>
<td>.82</td>
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<td>Religious importance</td>
<td>5.8 (0.5)</td>
<td>5.8 (0.5)</td>
<td>.92</td>
</tr>
</tbody>
</table>

*Data given as mean (SD) unless otherwise specified. ADL indicates activities of daily living (functional status); ASA, American Society of Anesthesiologists Severity of Illness Scale; and MMSE, Mini-Mental State Examination. P values were determined by univariate analyses (x² or t test).

19% to 28% increase in risk of dying during the approximately 2-year follow-up period. It should also be noted that religious struggle was predictive of mortality, while other variables that have been implicated in longevity were not. For instance, mortality was not predicted by race, diagnosis, cognitive functioning, independence in daily activities, depressed mood, or quality of life.

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**Table 1. Comparison Between Survivors and Deceased on Baseline Variables**

![Table 1](image)

**Table 2. Cox Regression Estimates of Demographic, Mental Health, Physical Health, Positive Religious Coping, and Religious Struggle Variables on Mortality**

![Table 2](image)
cided the devil made this happen; felt punished by God for my lack of devotion) do seem to reflect the former rather than the latter cluster of emotions.

Yet another possible explanation for the religious struggle–mortality connection is that religious struggle may result in social alienation. Expressions of dissatisfaction, confusion, and discontent with God and religion are not normative in the United States. Levels of religious struggle are, on the average, quite low. Thus, individuals who voice religious dissatisfaction and discontent in the midst of their illnesses may alienate themselves from the support and caring of family, friends, clergy, and health professionals, which may, in turn, result in a loss of social, emotional, and tangible support. In this vein, greater religious struggle at baseline was slightly but significantly correlated with less frequent church attendance ($r = -0.12, P < .05$).

Of course, these 3 explanations are not mutually exclusive. Several factors may account for the connection between religious struggle and mortality. Clearly, additional research is needed to examine these and other potential mediating variables. These studies should move beyond a reliance on global religious measures to a focus on more specific aspects of religiousness, positive and negative, that have implications on global religious measures to a focus on more specific aspects of religiousness, positive and negative, that have potential to enhance or diminish health and longevity.

Physicians are now being asked to take a spiritual history,25,26 and more than 70 of the 126 medical schools in the United States now have courses that train students to take such a history. Our findings suggest that patients who indicate religious struggle during a spiritual history may be at particularly high risk for poor medical outcomes. Referral of these patients to clergy to help them work through these issues may ultimately improve clinical outcomes; further research is needed to determine whether interventions that reduce religious struggles might also improve medical prognosis.

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Corresponding author and reprints: Kenneth I. Pargament, PhD, Department of Psychology, Bowling Green State University, Bowling Green, OH 43403 (e-mail: kpargam@bgnet.bgsu.edu).

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