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Author(s): Harold G. Koenig, David B. Larson, Judith C. Hays, Michael E. McCullough, Linda K. George, Patricia S. Branch, Keith G. Meader, Maragatha Kuchibhatla and Keith G. Meador

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Religion and the Survival of 1010 Hospitalized Veterans

HAROLD G. KOENIG, DAVID B. LARSON,
JUDITH C. HAYS, MICHAEL E. McCULLOUGH,
LINDA K. GEORGE, PATRICIA S. BRANCH,
KEITH G. MEADER, and MARAGATHA KUCHIBHATLA

ABSTRACT: *Objective:* To examine the effects of religious affiliation and religious coping on survival of acutely-hospitalized medically-ill male veterans following discharge. *Sample and Methods:* Between 1987 and 1989, comprehensive psychosocial and physical-health evaluations were performed on a consecutive sample of 1010 patients ages 20–39 and 65–102 years admitted to the general medicine and neurology services of the Veterans Administration (VA) Medical Center in Durham, North Carolina. Religious affiliation and religious coping (the degree to which a patient relied on his religious faith for comfort and strength) were among the variables assessed. Subjects or surviving family members were contacted by telephone in 1996–97 to determine vital status; dates of death were confirmed by the Veterans Administration's Beneficiary Identification and Records Locator Subsystem (BIRLS), death certificate, or the National Death Index. Cox proportional-hazards regression was used to model the effects of religious variables on time to death, controlling for demographic, social, psychiatric, and physical-health covariates. *Results:* Follow-up was obtained on all 1010 patients. During the observation period, 673 patients died. While a higher proportion of conservative Protestants than members of other religious groups died during this time (70.5% vs. 64.3%, $p = .04$), the association disappeared once covariates were controlled. Religious coping was unrelated to survival in both bivariate and multivariate analyses (hazard ratio 1.00, 95% CI 0.99–1.01). *Conclusions:* Neither religious affiliation nor dependence on religion as a coping behavior predicted survival in this sample of medically-ill male veterans. Several reasons for the absence of an effect are explored, notably the fact

Harold G. Koenig, M.D., M.H.Sc., is Associate Professor of Psychiatry, Director, Center for the Study of Religion/Spirituality and Health, Duke University Medical Center; David B. Larson, M.D., M.S.P.H., is Adjunct Professor of Psychiatry, Duke University Medical Center; Judith C. Hays, R.N., Ph.D., is Assistant Research Professor of Geriatric Psychiatry and Senior Fellow at the Center for the Study of Aging and Human Development, Duke University Medical Center; Michael E. McCullough, Ph.D., is Director of Research, National Institute for Healthcare Research, Rockville, Maryland; Linda K. George, Ph.D., is Professor of Sociology and Associate Director, Center for the Study of Aging and Human Development, Duke University Medical Center; Patricia S. Branch, M.A., is Research Assistant, Duke University Medical Center; Keith G. Meador, M.D., M.P.H., is Associate Clinical Professor of Psychiatry, Duke University Medical Center; Maragatha Kuchibhatla, Ph.D., is Assistant Research Professor, Division of Biometry, Duke University Medical Center.

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that the mortality force exerted by age, medical diagnosis, and severity of physical-health problems overwhelmed the weaker effects of psychosocial variables.

Over a century ago, Dr. John S. Billings, then Surgeon General of the United States Army, discovered a lower death rate among Jews compared with non-Jews in an 1889 study.¹ Not long afterwards, Emile Durkheim in 1915 laid the foundation for such a connection by pointing out the potential health consequences of weakening or absent religious ties.² In 1928, J.V. De Porte, following up on the earlier work of Billings, confirmed a lower death rate among Jews compared with non-Jews in New York State. Ten years later, Bolduan and Weiner published a landmark paper on the causes of death among Jews in New York City, reporting lower death rates from tuberculosis, pneumonia, and uterine cancer, but higher death rates from cancers of the breast and digestive organs.³ Although research progress has been slow since the early twentieth century, a steady stream of studies have appeared in the medical and epidemiological literature over the past 30 years. In particular, there has been much theoretical work done that has considered why, how, and to what extent religious beliefs and practices affect mental and physical health, and thus potentially influence mortality.⁴⁻¹¹

A seminal review of religion-mortality studies 10 years ago found a great number of studies documenting longer survival for clergy or persons affiliated with certain religious denominations, such as the Mormons, Seventh-Day Adventists, Amish, and other religious groups with strict proscriptions against smoking, alcohol, and dietary factors that contribute to early mortality.⁶ Fewer studies, however, have examined the effects of “religiousness” or “degree of religious commitment” on mortality in general populations. These reports can be divided into those examining the effects of “organizational” religious participation (religious membership or attendance) and those studying “non-organizational” religious behavior or personal religious commitment (private religious activity such as prayer or Bible study, personal religiousness, or strength and comfort from religion). Many studies document a positive association between survival and organizational religious activity, whether this is measured by church membership,^{12,13} frequency of church attendance or related activities,¹⁴⁻²⁰ or involvement in a religious kibbutz.²¹ A number of early studies, however, did not control for other risk factors, particularly the most powerful predictor of mortality, physical-health status (which obviously influences people’s ability to get to church). Some of the studies that did control for physical health and other covariates failed to demonstrate an association between church-related activity and mortality.^{22,23} Less common are studies that examine the association between survival and non-organizational religious activity,^{18,22-25} particularly studies involving clinical populations. Many of these investigations involve older adults, since this population has high enough death rates to allow for assessment of predictors of mortality without long follow-up times. Zuckerman and colleagues¹⁸ fol-

lowed 400 elderly poor residents of New Haven, CT, for two years, finding that among the 170 participants in poor physical health, those who found strength and comfort from religion had a significantly lower mortality rate. Likewise, Oxman and associates²³ examined six-month survival in 232 subjects age 55 or over following elective open-heart surgery, finding that strength and comfort from religion was significantly and inversely related to mortality. On the other hand, Idler and Kasl²² examining four-year mortality rates for another sample of 2,812 older adults in New Haven, CT, found no association between private religious activities (self-assessed religiousness, strength and comfort from religion) and survival. Thus, the relationship between personal religious commitment and mortality remains uncertain.

In the late 1980's, we followed a group of medically-ill elderly men after hospital discharge, identifying religious copers and non-religious copers in the group.²⁴ Religious coping was measured using a three-item index, and strict criteria were used to identify a group of 97 "very religious" copers and a group of 164 "non-religious" copers (out of 1010 patients). Mortality rates and survival times were compared between the two groups over an average 14-month observation period. Very religious and non-religious copers had almost identical mortality rates (24.7% vs. 23.0%, respectively), and survival times did not differ between the two groups. The study was criticized for several reasons, including too short a follow-up time, too low a mortality rate, less than rigorous methods for determining vital status, and failure to examine the death rates of patients who fell in between these extremes of religious coping.

The present study is a "second look" at the effects of religious coping on the survival of these male veterans following hospital discharge. This time, however, the weaknesses in the original study have been corrected—including a longer follow-up time (nine years), higher overall mortality rate (67%), more exact determination of vital status (central VA records or death certificates), and the assessment of mortality rates and survival not only for the 97 very religious copers and 164 non-religious copers, but also of the 739 patients with intermediate degrees of religious coping. We hypothesized that (1) patients who relied heavily on their religious faith (very religious copers) would survive longer than either non-religious copers or those who depended on religion only to a moderate degree; (2) patients affiliated with conservative or fundamentalist religious traditions would experience longer survival (because of more conservative life styles, less smoking, alcohol use, etc.), and (3) these associations would persist after controlling for demographic, social, psychiatric, and physical-health factors.

Methods

Between September 1, 1987 and January 1, 1989, men under age 40 and over age 65 consecutively admitted to the general medicine or neurology inpatient services at the VA Medical Center in Durham, North Carolina, were assessed

as part of a study examining depression in the medically ill. The primary purpose of the study was to examine age differences in rates and predictors of depression in this population.^{26,27} Potential subjects were excluded if they were women, admitted to intensive care settings, were transferred from other services to the medical ward, scored less than 15 on the Mini-Mental State Exam (MMSE),²⁸ or had severe medical illness or communication problems preventing evaluation. Complete evaluations were obtained on 1010 subjects (92% of eligible participants).

Subjects were generally seen within 48 hours of admission by a masters prepared social worker and/or by a physician who collected demographic information and data on social support, cognitive status, self-rated depression, past psychiatric history, alcohol use, ability to perform activities of daily living, and primary medical diagnosis. Information was also collected on religious affiliation and religious coping.

Measures

Social support. Social support was measured using a three-item index that assessed frequency of social interaction, size of support network, and satisfaction with support.^{29,30} Response options ranged from 1–5 for each item, with a total scale range of 3 to 15 (Cronbach alpha 0.57). The total score was divided into quartiles, and those in the highest quartile were compared to those in the bottom three quartiles. Living situation (living with others vs. alone) and marital status (married vs. not) were also assessed.

Depression. Depressive symptoms were measured with the 30-item Geriatric Depression Scale (GDS).³¹ This instrument has been validated for use in screening for depression in this population. A cutoff score of 11 or higher on this scale is 92% sensitive and 89% specific for major depression.³² Scores were dichotomized into 0–10 vs. 11 or higher for analyses.

Psychiatric history. Single-item measures of past psychiatric history, family psychiatric history, and use of alcohol were used to obtain this information.

Physical functioning. Both physical and instrumental activities of daily living (ADLs) were measured. Ability to perform six physical ADLs³³ (0–2 scale) and five instrumental ADLs³⁴ (0–1 scale) were assessed. Physical and instrumental ADLs that could be performed independently without help were summed to create an ADL index ranging from 0–17; scores were dichotomized into no ADL impairment (e.g., 17) vs. one or more ADL impairments (0–16) for analyses.

Religious affiliation. Over 40 religious denominations were represented in the study group. These were categorized into nine general religious groups according to a schema devised by Roof and McKinney.³⁵

Religious coping. Religious coping was assessed using a 3-item index (Religious Coping Index or RCI).³⁶ Each item measured the extent to which the patient relied upon religion to help them manage or cope with the stress in his life. First, the subject was asked an open-ended question about how he coped (e.g., "What enables you to cope with the stresses in your life, such as physical illness and other stresses?") (Item 1). This item was used in order to identify the coping behavior that patients themselves felt was most helpful, without leading them to give a religious response. Religious responses (prayer, faith in God, Jesus, etc.) were assigned a score of 10 and non-religious responses (family, staying busy, etc.) a score of 0.

Second, subjects were asked to rate on a visual analog scale the extent to which they used or found religious beliefs or activities helpful in coping (Item 2). The scale was numbered from 0 to 10, where 0 indicated "not much or not at all" and 10 indicated "the most important factor that keeps me going." While subjects were allowed to define for themselves what the term "religion" meant to them, the interviewer made clear that this could involve either personal belief alone or include religious activity like prayer or church attendance. Third, the interviewer rated the subject on a scale of 0–10 on the basis of his overall assessment of how much the patient used religion to cope (Item 3). This judgement was based on subjects' spontaneous elaboration on their responses to items #1 and #2 above and on a separate discussion directed at exactly how subjects used religion as a coping behavior.

Summing up responses to the three items resulted in a scale ranging from 0–30. Internal reliability for the RCI is high (Cronbach's alpha = 0.82). Inter-rater reliability of the RCI was tested 12–36 hours apart in a subgroup of 188 subjects; Pearson correlation between RCI scores obtained by the two different examiners was 0.81. For analysis purposes, RCI scores were examined as both a continuous measure of religious coping and as a categorical measure. In the latter case, subjects in the sample were divided into three categories: very religious, non-religious, and moderately religious copers. Very religious copers were defined as those who (1) spontaneously noted a religious response to Item 1, (2) rated themselves a 9.5 to 10 on the visual analog scale in Item 2, and (3) were rated a 9 or 10 by the interviewer on Item 3. Non-religious copers were defined as those who (1) did not give a religious response to Item 1, (2) rated themselves a 2.5 or lower on the visual analog scale, and (3) were rated a 2 or lower by the interviewer on Item 3. Moderately religious copers were defined as all subjects not meeting criteria for either a very religious copers or a non-religious copers.

Determination of vital status

Vital status was determined in the following manner. Between July 1996 and April 1997, 1010 subjects or their families were contacted by telephone. After informed consent was obtained and witnessed by a second interviewer,

the vital status of the subject was determined. For subjects still alive and interviewed by telephone, the date of interviewer contact was recorded (censoring date). If the family was interviewed, and the subject was determined to be alive, then the date of last contact between the subject and family member was recorded (censoring date). Family members of subjects who had died were asked to give the approximate date of the subject's death.

The United States Department of Veterans Affairs maintains the Beneficiary Identification and Records Locator Subsystem (BIRLS) as a record of all claims and benefits paid to veterans and their beneficiaries.³⁷ This database has been used as a tool for vital status follow-up activities and is one of the three national sources of vital status ascertainment for veterans (with the National Death Index of the National Center for Health Statistics and the Master Beneficiary Record of the Social Security Administration).

Date of death for subjects in the present study was then verified in one of three ways: (1) confirmation by BIRLS (91.5% or 616 deaths), (2) confirmation by obtaining death certificate (8.2% or 55 deaths), or (3) confirmation by the Death Index (2 deaths). Eighty-five percent of deaths (571/673) were confirmed by two or more sources (BIRLS, death certificate, Death Index, phone contact with kin, or Durham VA computer). If there was conflict about the date of death between any of these sources, the death certificate was obtained and used as the gold standard.

Statistical analyses

The chi-square statistic (χ^2) was used for bivariate analyses. Survival time was calculated from the first day of the hospital admission when the initial evaluation took place to either (1) the date of death (event) or (2) date when patient was last known to be alive (censored). Cox proportional-hazards models were used to examine predictors of time to death; RCI score was included first as a continuous variable and then as a categorical variable. Religious affiliation, demographic variables, social variables, psychiatric variables, and physical-health variables were then successively added to each model. For covariates with 3% or less missing data, mean scores were imputed for missing values. Results from the Cox models were presented as estimated hazard ratios (HR) with 95% confidence intervals (CI). Because subjects were either under age 40 or over age 65, analyses were stratified by age. Finally, Kaplan-Meier survival curves were used to compare very religious, moderately religious, and non-religious copers on time to death. Analyses were performed using the SAS statistical package.³⁸

Results

The baseline characteristics of the sample in 1987–89 are displayed in Table 1. Eighty-four percent of subjects were age 65 or older ($n = 850$) and 16%

TABLE 1

Baseline Characteristics of the Sample in 1987–89 (n = 1010)

<i>Demographic</i>	% (n) or mean (SD) (range)
Age (% 65 or over)	84.2 (850)
Sex (% Male)	100.0
Race (% Black)	32.0 (323)
Education (% high school graduate or more)	35.7 (360)
Income (% \$15,000/yr or more)	17.8 (173)
<i>Social Characteristics</i>	
Marital status (% married)	64.5 (651)
Living situation (% alone)	17.9 (180)
Social support, mean	10.6 (1.8) (4–15)
<i>Psychiatric Characteristics</i>	
Past psychiatric history (% yes)	28.3 (283)
Family psychiatric history (% yes)	11.2 (111)
Alcohol use (% yes)	22.7 (227)
Depression (% GDS>10)	23.8 (238)
<i>Physical Health Characteristics</i>	
Physical functioning (mean # unimpaired ADLs)	14.4 (3.8) (0–17)
Medical diagnoses (% with)	
Cancer	19.9 (201)
Gastrointestinal disease	14.6 (147)
Neurological disease	16.9 (171)
Respiratory disease	9.9 (100)
Renal or genitourinary disease	5.3 (54)
Cardiovascular disease	24.2 (244)
<i>Religious Characteristics</i>	
Denomination (% affiliated with)	
Liberal Protestant	7.1 (72)
Moderate Protestant	11.9 (120)
Conservative Protestant	37.9 (383)
Black Protestant	25.0 (252)
Fundamentalist/Evangelical	5.5 (56)
Protestant (unspecified)	2.9 (29)
Catholic	2.8 (28)
Nontraditional Christian	3.3 (33)
No Affiliation	3.7 (37)
Religious coping (mean RCI score)	14.0 (8.8) (0–30)
Religious coping categories (% in each)	
Very religious copers	9.7 (97)
Moderate religious copers	73.9 (739)
Non-religious copers	16.4 (164)

were ages 20–39 years ($n = 160$). About one-third of the sample were Black (32%). A little more than one-third (35.7%) were high school graduates, and only 18% had an annual family income over \$15,000. Two-thirds were married, and over 80% were living with a spouse or other person. Almost one-half of the sample (49.9%) required assistance with at least one activity of daily living. The majority of subjects were admitted with one of four major illnesses: cardiovascular disease (24.2%), cancer (19.9%), neurological disease (16.9%), or gastrointestinal disease (16.9%).

Religious characteristics of the sample indicated that the majority of patients were either conservative Protestants (37.9%) or Black Protestants (25.0%); this is consistent with religious affiliations in central North Carolina, where Baptists make up approximately 60% of the population. As noted elsewhere, religious coping was prevalent.³⁶ Approximately one-fifth (21%) of the sample indicated that religion was the most important coping factor that kept them going. RCI scores were available for 1,000 participants; scores ranged from 0 to 30, with a mean of 14 (SD 8.8). Ten percent of the sample fulfilled criteria for very religious copers ($n = 97$), 16% for non-religious copers ($n = 164$), and 74% for moderately religious copers ($n = 739$).

Religion and mortality rate. Two-thirds of the sample died (66.6%) during the average nine-year follow-up period ($3,285 \pm 137.7$ days) (Table 2). Con-

TABLE 2

Mortality by Religious Affiliation and Level of Religious Coping

	% (n)
Overall deaths (% of sample)	66.6 (673)
Religious affiliation (% who have died)	
Liberal Protestant	66.7 (48)
Moderate Protestant	71.7 (86)
Conservative Protestant	70.5 (270)*
Black Protestant	61.9 (156)
Fundamentalist/Evangelical	58.9 (33)
Protestant (unspecified)	72.4 (21)
Catholic	64.3 (18)
Nontraditional Christian	60.6 (20)
No Affiliation	56.8 (21)
Degree of religious coping	
Very religious copers	68.0 (66)
Moderate religious copers	66.0 (488)
Non-religious copers	68.3 (112)

*Chi-square 4.1, 1 df, $p = .04$ (Conservative Protestants vs. Others)

trary to our second hypothesis, bivariate analyses revealed that conservative Protestants experienced the highest mortality when compared to patients with all other religious affiliations pooled (70.5% vs 64.3%, $p < .05$). No other differences based on religious affiliation were evident. Contrary to our first hypothesis, degree of religious coping was unrelated to mortality. Very religious copers were just as likely to die as non-religious copers or moderately religious copers (68.0% vs 68.3% and 66.0%, respectively, $\chi^2 = 0.3$, 2 df, $p = 0.87$). When analyses were stratified by age group, the pattern was similar in younger (25.0% vs. 27.8% and 22.5%, $\chi^2 = 0.4$, 2 df, $p = 0.81$) and older men (74.1% vs. 79.7% and 73.7%, $\chi^2 = 2.0$, 2 df, $p = 0.37$).

Religion and time to death. Results from the Cox proportional-hazards regression analysis revealed that when religious coping as a continuous variable (RCI score) was added to the model without other predictor variables, there was no effect on time to death (HR 1.00, 95% CI 0.99–1.01). Likewise, when religious coping was examined as a categorical variable (very and moderate religious copers vs. non-religious copers) alone in the model, there was still no effect (HR 1.00, 95% CI 0.82–1.22). Religious affiliation, demographic, social, psychiatric, and physical-health variables were then added successively to the models, assessing their effects on survival and their impact on the religious coping-survival relationship. Significant predictors of time to death in the final model (Table 3) were age (Hazard Ratio or HR = 3.49, 95% CI 2.41–5.07, $p < .0001$), impaired ability to perform activities of daily living (HR 1.51, 95% CI 1.27–1.79, $p < .0001$), and admitting diagnoses of cancer (HR 2.38, 95% CI 1.77–3.19, $p < .0001$) or respiratory disease (HR 1.41, 95% CI 1.01–1.97, $p < .05$). Patients with a primary diagnosis of cardiovascular disease, in contrast, were more likely to survive (HR 0.71, 95% CI 0.51–0.96, $p < .05$). No other religious, demographic, social, psychiatric or physical-health characteristics predicted survival. Adding other predictor variables to the model had no effect on the relationship between survival and religious coping, whether religious coping was examined as a continuous or a categorical variable.

Stratifying the analyses by age group revealed only small differences, with the younger very religious or moderately religious copers experiencing a slightly lower hazard of dying than younger non-religious copers (HR 0.96, 95% CI 0.41–2.32) and older very religious or moderately religious copers having a slightly higher hazard of dying than older non-religious copers (HR 1.05, 95% CI 0.83–1.33). Unadjusted Kaplan-Meier survival curves for very religious, moderately religious, and non-religious copers in the overall sample are displayed in Figure 1.

Discussion

In this large clinical sample of medically-ill hospitalized male veterans, neither religious affiliation nor religious coping had an impact on survival. This

TABLE 3
Predictors of Survival over an Average Nine Year
Follow-Up Period

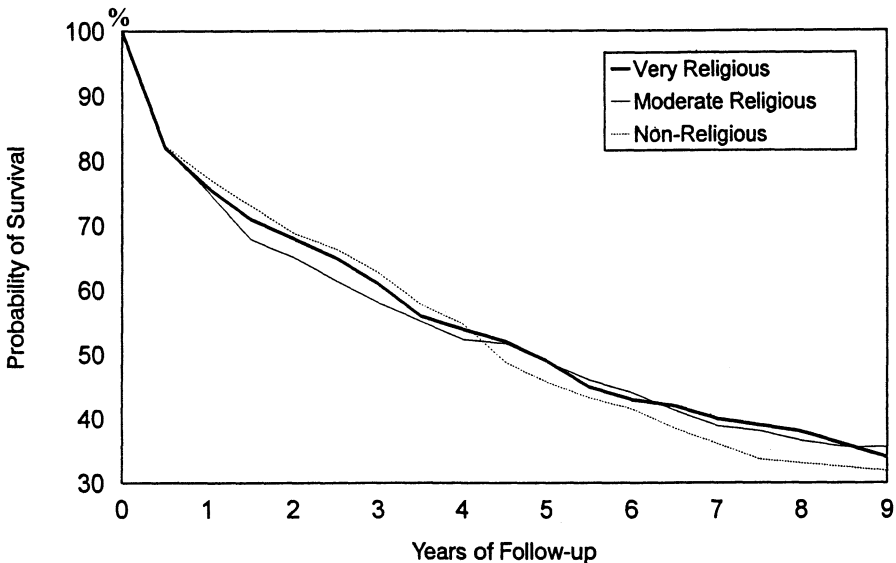
<i>Demographic</i>	<i>Hazard Ratio¹ (95% CI)</i>
Age (65 or over = 1)	3.49 (2.41–5.07) **
Race (Black = 1)	0.99 (0.72–1.35)
Education (high school graduate or more = 1)	0.87 (0.73–1.08)
Income (\$15,000/yr or more = 1)	0.98 (0.81–1.24)
<i>Social Characteristics</i>	
Marital status (married = 1)	1.13 (0.91–1.41)
Living situation (alone = 1)	1.13 (0.86–1.47)
Social support (highest quartile = 1)	0.91 (0.76–1.10)
<i>Psychiatric Characteristics</i>	
Past psychiatric history (1 = yes)	1.00 (0.83–1.21)
Family psychiatric history (1 = yes)	1.07 (0.81–1.38)
Alcohol use (1 = yes)	0.92 (0.75–1.13)
Depression (GDS > 10 = 1)	1.07 (0.88–1.30)
<i>Physical Health Characteristics</i>	
Physical functioning (1 = any ADL impairment)	1.52 (1.29–1.80) **
Medical diagnoses (1 = diagnosis)	
Cancer	2.38 (1.77–3.19) **
Gastrointestinal disease	0.75 (0.54–1.04)
Neurological disease	0.68 (0.49–0.95)
Respiratory disease	1.41 (1.01–1.97) *
Renal or genitourinary disease	0.96 (0.63–1.46)
Cardiovascular disease	0.71 (0.51–0.96) *
<i>Religious Characteristics</i>	
Denomination (compared with no affiliation)	
Liberal Protestant	0.82 (0.48–1.42)
Moderate Protestant	0.92 (0.56–1.52)
Conservative Protestant	0.89 (0.55–1.42)
Black Protestant	0.84 (0.49–1.46)
Fundamentalist/Evangelical	0.82 (0.45–1.47)
Protestant (unspecified)	0.96 (0.51–1.80)
Catholic	0.90 (0.46–1.73)
Nontraditional Christian	0.90 (0.47–1.73)
Religious coping (RCI score range 0–30)	1.00 (0.99–1.01)

* $p < .05$, ** $p < .0001$; model $X^2 = 337.2$, $df = 27$, $p < .0001$, $n = 1000$, deaths = 666.

¹Hazard ratios > 1.00 indicate greater risk of dying; those < 1.00 indicate lower risk.

FIGURE 1

Kaplan-Meier Survival Curves Following Hospital Discharge for Different Levels of Religious Coping



absence of an effect cannot be explained by poor measurement of the religious variable, inadequate assessment of vital status, too short a follow-up time, too few deaths, or failure to control for relevant predictor variables. The most obvious conclusion from this study is that religious coping simply does not affect survival. This finding, among male veterans, contrasts with substantial research showing that church-related or synagogue-related activity, after adjusting for covariates, is significantly and positively related to longer survival.^{12-21,39} Why the difference? Perhaps the health effects of active participation in a religious community, which has the additive benefits of both social and religious involvement, are greater than those conferred by religious coping, a form of personal religiosity that can be more self-contained. While religious coping is related to attendance at religious services, the correlation is less than 0.50, suggesting that these two dimensions of religiousness may be measuring distinctly different constructs.⁴⁰

A second possibility involves the timing of religious coping's effect on survival. Our examination may simply have been done too late in the course of these persons' lives to capture the effect. In other words, the impact of religious coping on physical health may have already played itself out, since many of these men were older and with only a few years of life remaining (673 of the 1010 men died during the follow-up period). Stratifying analyses

by age group provided some support for this idea, since younger men had a hazard ratio less than 1.00 and older men greater than 1.00; the effects, however, were extremely weak and could have easily been accounted for by chance.

Third, age and physical illness may simply have overwhelmed the effects of religious coping and other psychosocial predictors of mortality. The major factors significantly influencing mortality in this sample were older age, physical impairment, and a diagnosis of cancer. Neither marital status, education, income level, social support, nor depression had any effect on survival, despite the fact that they are well known psychosocial predictors of mortality in community dwelling populations.^{17,19,29,41-43} Future explorations of religious coping's effects on survival may need to concentrate in community-dwelling populations that are younger and less ill; however, such investigations are usually expensive and require long periods of follow-up to allow for enough deaths to make analysis feasible.

Fourth, our sample was an all-male one. Religious beliefs and devotional activities are known to be more prevalent among women.^{44,45} This is particularly true for religious coping among older adults. In another study conducted in the same geographical location as the present one, women were almost twice as likely as men to report religion as a resource of emotional support.⁴⁶ Effects on mortality may likewise be gender-dependent, and recent studies have reported weaker effects of religious activity on survival for men than women.²⁰ Thus, our all-male sample may have also contributed to the absence of an effect for religious coping.

Finally, many study participants may have sought comfort in religion as they became sicker and required acute hospitalization. Such a dynamic would result in a positive relationship between religious coping and nearness to death, canceling out any protective effect that long-term or life-long religious devotion may have afforded. This "problem" with the religious-coping variable is also true for other measures of private religious involvement such as prayer, which are often mobilized to cope with the psychological stress brought on by aging, physical illness, and other life stressors.^{36,47} Studies have demonstrated that religious commitment and personal devotional activity are particularly common among older adults and those in poor physical health.^{46,48-50} Again, this is precisely the population at greatest risk of dying. When studying religious coping or personal religiosity, particularly in aged or clinical samples, the relationship with mortality and survival becomes complex. Poor health or nearness to death, while reducing certain forms of religious activity such as church attendance, may at the same time foster personal religious belief and commitment in an attempt to compensate for an inability to go to church or to cope with health problems and existential issues. Thus, physical health and aging confound the relationship between both organizational and non-organizational measures of religiosity, although in *opposite directions*.

While religious coping had no effect on survival in this study, previous

work in this sample and other populations has shown that dependence on religious faith during physical illness and hospitalization may help to make life more enjoyable during the time that remains. Both high social support and low rates of depression were characteristic of very religious copers in this sample,^{24,36,51} and similar associations have been reported by different investigators working in different areas of the country.⁵¹⁻⁵⁶ Thus, dependence on a strong personal religious faith, while not adding years to life, may certainly add life to years.

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