Religious Coping Methods as Predictors of Psychological, Physical and Spiritual Outcomes among Medically Ill Elderly Patients: A Two-year Longitudinal Study

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Abstract

A total of 268 medically ill, elderly, hospitalized patients responded to measures of religious coping and spiritual, psychological and physical functioning at baseline and follow-up two years later. After controlling for relevant variables, religious coping was significantly predictive of spiritual outcome, and changes in mental and physical health. Generally, positive methods of religious coping (e.g. seeking spiritual support, benevolent religious reappraisals) were associated with improvements in health. Negative methods of religious coping (e.g. punishing God reappraisal, interpersonal religious discontent) were predictive of declines in health. Patients who continue to struggle with religious issues over time may be particularly at risk for health-related problems.

Keywords

coping, elderly, illness, religion, spirituality

IN A NUMBER of empirical studies, researchers have shown significant links between measures of health and global religious indices, such as prayer, church attendance and self-rated religiousness and spirituality (see Koenig, McCullough, & Larson, 2001; Pargament, 1997 for reviews). These studies have led researchers to consider a variety of explanatory factors that may account for the connection between religion and health. These include health variables (e.g. health practices, immunological response), psychological variables (e.g. meaning, coherence, self-esteem) and social variables (e.g. social support, intimacy). As yet, however, efforts to demonstrate that these physical, psychological and social factors mediate the relationships between religion and health have yielded mixed results at best (George, Ellison, & Larson, 2002; McCullough, Hoyt, Larson, Koenig, & Thoresen, 2000).

A simpler explanation for the associations between religion and health is that religion has direct effects on health. If the religion–health connection is not fully mediated by physical, psychological or social factors, perhaps there is something within religion itself that accounts for its effects. Pargament (1997) has suggested that an individual's global religiousness may translate into specific religious beliefs and practices that are, in turn, directly related to health and well-being. What are these specific religious mechanisms? Religious coping methods represent one promising candidate.

In the face of illness and other serious life events, many people look to religion for help in coping (e.g. Ayele, Mulligan, Gheorghiu, & Reyes-Ortiz, 1999; Koenig, 1998). For example, Ayele et al. (1999) found that 86 percent of hospitalized and long-term care patients used religious activities to cope with their problems. Religion can express itself in many ways in the process of coping. Factor analytic studies of various instruments have identified a variety of religious coping methods (Pargament, Ensing, Olsen, Reilly, van Haitsma, & Warren, 1990; Pargament, Kennell, Hathaway, Grevengoed, Newman, & Jones, 1988; Pargament, Koenig, & Perez, 2000). As shown in Table 1, these methods contradict stereotypes that religion is merely passive or defensive (see Pargament & Park, 1995). Religious coping includes active, passive and interactive methods. They encompass problem-focused and emotion-focused activities. They include cognitive, behavioral and spiritual approaches. And, it is important to add, they are not uniformly effective; higher-order factor analyses of different measures of religious coping point to negative as well as positive religious methods (Bush, Rye, Brant, Emery, Pargament, & Riessinger, 1999; Pargament, Smith, Koenig, & Perez, 1998; Smith, Pargament, Brant, & Oliver, 2000).

Researchers have reported significant relationships between measures of religious coping and indices of spiritual, psychological and physical health and well-being (see Harrison, Koenig, Hays, Eme-Akwari, & Pargament, 2001; Koenig et al., 2001; Pargament, 1997 for reviews). As yet, these effects have not been fully explained by various psychological or social mediators. For example, Tix and Frazier (1998) conducted a longitudinal study of patients and their significant others coping with the stresses of kidney transplantation. Religious coping was predictive of greater life satisfaction at three and twelve months post-transplantation, even after controlling for cognitive restructuring and internal control (for patients), and cognitive restructuring and social support (for significant others). They concluded that 'religious coping adds a unique component to the prediction of adjustment to stressful events that cannot be accounted for by other established predictors' (1998, p. 420).

In support of the notion that religious coping mediates the relationship between global religiousness and health, a number of studies have shown that religious coping methods continue to predict indices of physical health and mental health after controlling for the effects of global religiousness (R^2 from .06 to .28) (see Pargament, 1997 for review). In contrast, global measures of religiousness are relatively weak or insignificant predictors of health when the effects of religious coping are controlled. For example, in a longitudinal study of a national sample of African-Americans, Ellison, Musick, Levin, Taylor and Chatters (1997) found that the effects of church attendance on psychological distress were mediated by religious support from church members, and not by a measure of general social support. These studies suggest that, in order to understand the connection between religion and health,

researchers should turn their attention to specific indices of religious beliefs and practices that are functionally and proximally related to health and well-being.

Several positive religious coping methods have been associated with better spiritual, psychological and physical health in cross-sectional studies of clinical and normal samples: spiritual support, benevolent religious reframing, collaborative religious coping and congregational support (e.g. Bush et al., 1999; Koenig, Pargament, & Nielsen, 1998; Mickley, Pargament, Brant, & Hipp, 1998; Pargament, Cole, Vandecreek, Belavich, Brant, & Perez, 1999; Pargament et al., 1990; Thompson & Vardaman, 1997). In contrast, researchers have linked several negative religious coping methods cross-sectionally to poorer spiritual, psychological and physical health: spiritual discontent, punitive religious reframing, self-directing religious coping and congregational discontent (e.g. Exline, Yali, & Lobel, 1999; Koenig, Pargament, & Nielsen, 1998; Pargament et al., 1998; Pargament, Zinnbauer, Scott, Butter, Zerowin, & Stanik, 1998; Smith et al., 2000; Trenholm, Trent, & Compton, 1998).

Although these cross-sectional studies have yielded valuable results, they do not address the question of whether religious coping has longer-term implications for health and whether these religious coping methods *affect* health outcomes. Religious coping could impact health, but religious coping could also be mobilized or triggered by health status (Ferrari & Kelley-Moore, 2001). Relatively few longitudinal studies have been conducted that speak to the causal connection between religious coping and health (Alferi, Culver, Carver, Arena, & Antoni, 1999; Fitchett, Rybarczyk, DeMarco, & Nicholas, 1999; Koenig, George, & Peterson, 1998; Pargament, Koenig, Tarakeshwar, & Hahn, 2001; Park, Cohen, & Herb, 1990; Tix & Frazier, 1998). Even though these studies have generated important and promising results, we have only begun to pinpoint those specific forms of religious coping that impact, positively or negatively, on health status. In the present investigation, we engage in a fine-grained analysis of religion and its implications for health. We attempt to identify the specific types of religious coping that are predictive of changes in health status over a two-year period in a sample of hospitalized, medically ill, elderly patients. Health is defined in this study holistically to include indicators of spiritual, psychological and physical functioning. Admittedly, the inclusion of a spiritual criterion is relatively unusual in health research. From a religious perspective, however, spiritual well-being (e.g. the degree to which an individual experiences a connection with the transcendent) is the paramount criterion of health. By including a spiritual measure of outcome, we could examine the impact of religious coping on a full range of health indicators.

We hypothesize that the positive methods of religious coping (e.g. spiritual support, benevolent religious reframing, collaborative religious coping, congregational support) will be predictive of improvements in health. Conversely, we hypothesize that the negative methods of religious coping (e.g. spiritual discontent, punitive religious reframing, self-directing religious coping, congregational discontent) will be predictive of declines in health.

Methods

Participants and procedures

Initially, the sample consisted of 596 persons age 55 or over who were hospitalized on the medical inpatient services of a southeastern university medical center and VA medical center between January 1996 and March 1997. The patient population in both hospitals was almost exclusively (> 95%) Christian, and represented mostly conservative (e.g. Baptist) and mainline (e.g. Methodist) Protestant denominations. At the baseline hospital evaluation, detailed information about religious coping methods as well as physical health, mental health and spiritual data were collected through interviews and a medical record review by the interviewer. To gather follow-up data, 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. A total of 268 survivors were located and completed the follow-up interview, 176 were identified as deceased and 152 were either unable to be located, unwilling to respond to the follow-up interview or unable to respond to the interview. The confirmation of death and date of death was obtained through direct contacts with

family members (50%), review of state vital records (25%), review of hospital records (15%) or a search of the National Death Index (10%). Compared to those who completed the follow-up interview, patients lost to follow-up (25.5%) were more migratory, had fewer social connections, tended to be lower in socio-economic status and were disproportionately represented in the VA medical center. The average number of days between baseline and follow-up interviews was 632. A shorter version of the religious coping measure (Brief RCOPE) was administered to the survivors and physical health, mental health and spiritual outcomes were reassessed during the 30–45 minute telephone interview. The Brief RCOPE was administered to the survivors at follow-up to examine the stability of religious coping, and to study the impact of religious coping between the time of admission to the hospital and follow-up on the outcomes.

Instruments

Religious coping methods Religious coping methods were assessed at baseline by the RCOPE and at follow-up by the Brief RCOPE. The RCOPE is a 63-item scale that assesses the degree to which patients made use of various religious methods of coping with their current illness (Koenig, Pargament, & Nielsen, 1998; Pargament et al., 2000, 2001). The measure was designed to be comprehensive (i.e. inclusive of the wide range of religious coping methods), theoretically based and functionally oriented (i.e. reflective of the multiple functions religion can play) and balanced (i.e. sensitive to the negative as well as the positive aspects of religion). It was adapted from earlier versions of religious coping measures that had yielded specific forms of religious coping as well as higher order positive and negative religious coping factors (Bush et al., 1999; Pargament et al., 1988, 1990; Smith et al., 2000). The RCOPE consists of 21 subscales, 3 items per subscale. Illustrative items are presented in Table 1. The subscales represent two higher-order factors of positive and negative religious coping (Pargament, Smith et al., 1998). The positive subscales are: benevolent religious reappraisals, collaborative religious coping, seeking spiritual support, seeking support from clergy or congregation members, religious helping, active religious surrender, religious purification, seeking spiritual connection, religious forgiveness, seeking religious direction, religious conversion and religious distraction. The negative subscales are: punishing God reappraisal, demonic reappraisal, reappraisal of God's power, passive religious deferral, self-directing religious coping, spiritual discontent, marking religious boundaries, interpersonal religious discontent and pleading for direct intercession. The patients responded to the items on a 4-point Likert scale, ranging from 0 'not at all' to 3 'a great deal'. A more complete description of the measure along with evidence of reliability and validity can be found elsewhere (Koenig, Pargament, & Nielsen, 1998; Pargament et al., 2000).

The Brief RCOPE is a 14-item instrument, generated from the larger RCOPE, designed to assess religious coping methods more efficiently. It consists of two factor-analytically derived subscales: positive religious coping and negative religious coping. Evidence in support of the reliability and validity of the measure can be found in Pargament et al. (2001) and Pargament, Smith et al. (1998).

Mental health and spiritual outcome

- Depressive symptoms: Depressive symptoms were measured with an 11-item self-rated depression scale that has been previously validated in older medical patients against clinician- determined diagnoses of major depression (Koenig, Cohen, Blazer, Meador, & Westlund, 1992). Higher scores indicate more depressive symptoms.
- Quality of life: Quality of life was assessed using a 5-item interviewer-rated quality of life index that assesses general activity, functioning, social support, health and psychological functioning (Spitzer, Dobson, Hall et al., 1981). Higher scores indicate better quality of life.
- Stress-related growth: A stress-related growth scale was included to measure the possibility of growth (and not simply the alleviation of pathology) through coping with the current illness. This construct was assessed utilizing a 15-item measure that taps positive outcomes of stress such as the attainment of wisdom and empathy (stress-related

Table 1. Religious coping methods

Religious coping methods with illustrative items from the RCOPE
Positive religious coping methods
Benevolent reappraisal: Redefining the stressor through religion as benevolent and potentially beneficial (e.g. Tried to find a lesson from God in this event)
Collaborative religious coping: Seeking control through a partnership with God in problem (e.g. Worked together with God as partners)
Seeking spiritual support: Searching for comfort and reassurance through God's love and care (e.g. Sought God's love and care)
Seeking support from clergy/church members: Searching for comfort and reassurance through the love and care of congregation members and clergy (e.g. Asked others to pray for me)
Religious helping: Attempting to provide spiritual support and comfort to others (e.g. Tried to give spiritual strength to others)
Active religious surrender: An active giving up of control to God (e.g. Did what I could and put the rest in God's hands)
Religious purification: Searching for spiritual cleansing through religious actions (e.g. Confessed my sins)
Seeking spiritual connection: Experiencing a sense of connectedness with forces that transcend (e.g. Thought about how my life is part of a larger spiritual force)
Religious forgiveness: Looking to religion for help in shifting from anger, hurt and fear associated with an offense to peace (e.g. Asked God to help me overcome my bitterness)
Seeking religious direction: Looking to religion for assistance in finding a new direction for living when the old one may no longer be viable (e.g. Prayed to find a new reason to live)
Religious conversion: Looking to religion for a radical change in life (e.g. Looked for a total spiritual reawakening)
Religious distraction: Engaging in religious activities to shift focus from the stressor (e.g. Focused on religion to stop worrying about my problems)
Negative religious coping methods
Punishing reappraisal: Redefining the stressor as a punishment from God (e.g. Wondered what I did for God to punish me)
Demonic reappraisal: Redefining the stressor as an act of the Devil (e.g. Believed the Devil was responsible for my situation)
Reappraisal of God's power: Redefining God's power to influence the stressful situation (e.g. Thought that some things are beyond God's control)
Passive religious deferral: Passive waiting for God to control the situation (e.g. Didn't do much, just expected God to solve my problems for me)
Self-directing religious coping: Seeking control directly through individual initiative rather than help from God (e.g. Tried to deal with my feelings without God's help)
Spiritual discontent: Expressing confusion and dissatisfaction with God's relationship to the individual in the stressful situation (e.g. Questioned God's love for me)
Marking religious boundaries: Clearly demarcating acceptable from unacceptable religious behavior and remaining within religious boundaries (e.g. Avoided advice that was inconsistent with my faith)
Interpersonal religious discontent: Expressing confusion and dissatisfaction with the relationship of clergy or members to the individual in the stressful situation (e.g. Wondered whether my church had abandoned me)
Pleading for direct intercession: Seeking control indirectly by pleading to God for a miracle or divine intercession (e.g. Pleaded with God to make things turn out okay)

positive outcomes) (Park, Cohen, & Murch, 1996). Park et al. (1996) present evidence of internal consistency and evidence that the scale does not reflect a retrospective bias; scores on the measure were predictive of changes over time in other psychological measures, and personal ratings of stress-related growth converged with ratings of growth by significant others.

- Spiritual outcome: A three-item spiritual outcome measure (Pargament et al., 1990) was used to re-assess the degree to which the individual experienced positive spiritual and religious changes over the course of the current illness. The items measure perceived changes in closeness to God, closeness to the Church and spiritual growth in response to the physical illness. The scale has proven to

be reliable and sensitive to variations in coping (Pargament et al., 1990).

Physical health

- Physical functioning: Functional status was assessed by the self-reported ability to independently perform 12 instrumental and 8 physical activities of daily living (ADLs) (Fillenbaum, 1985; Katz, Ford, Moskowitz, Jackson, & Jaffe, 1963). Impaired ADLs were tallied yielding an index ranging from 0 to 20. Higher scores indicate more dependence.
- Cognitive functioning: Cognitive status was measured using an abbreviated version of the Mini-Mental State Exam (MMSE) (Folstein, Folstein, & McHugh, 1975) that was developed and validated in a sample of elderly medical inpatients (Koenig, 1996). This abbreviated instrument asks the 10 time and place items on the MMSE, the 3 immediate recall items and asks patients to spell the word WORLD backwards or perform subtractions from 100 by 7s; score range is 0 to 18. The abbreviated MSE has been shown to be more acceptable, better tolerated and equally sensitive and specific as the standard MMSE in sick, hospitalized, often sensory-impaired elderly patients. Higher scores indicate better cognitive functioning.
- Severity of medical illness: Severity of medical illness was measured by the American Association of Anesthesiologists' Severity of Illness Scale (ASA, 1963). The ASA is a single item interviewer-rated measure of global illness severity ranging from 0 (healthy) to 5 (severely ill). This and similar measures of observer-rated illness severity have been shown to be robust predictors of mortality (ASA, 1963; Charlson, Sax, MacKenzie, Fields, Braham, & Douglas, 1986).

Statistical analyses

Several sets of statistical analyses were conducted. First, paired *t*-tests were run to examine changes in spiritual outcome, mental health, physical health and religious coping at baseline and follow-up. Second, Pearson correlations were conducted to assess the zero-order relationships between the RCOPE subscales at baseline with the measures of spiritual outcome, mental health and physical health at follow-up. Third, because of the possibility that change in spiritual outcome, mental health and physical health may have been affected by non-random selection of the sample at the end of the two-year period, selection bias models (Heckman, 1979) were employed for each analysis of change.

In these latter analyses, an extension of Heckman's procedure (Maddala, 1983) was used to account for both non-random selection due to mortality and non-random selection due to attrition or unavailability for a follow-up interview. The analysis incorporates non-random selection via estimation of a probit model to quantify the likelihood each interviewee remains in the study. The probit model for selective attrition and mortality included the illness severity measure as well as age, race and gender. The final regression analyses modeling change from period 1 to period 2 included a hazard term, or inverse Mill's ratio, which is inversely related to the probability of being observed. It is important to note that Heckman's estimator is sensitive to deviations from normality and particularly sensitive to a high degree of multicollinearity. To address collinearity concerns, the selection equation contained a variable not included in the final analyses.

To assess whether the religious coping methods were predictive of changes in spiritual outcome, mental health and physical health over the two-year period, Heckman analyses were conducted with the following sets of dependent variables: spiritual outcome, mental health (stress-related growth, quality of life, depression), and physical health (functional status, cognitive status). To provide overall estimates of the degree to which the religious coping methods predict the dependent variables, analyses were first conducted using the sum of the positive baseline RCOPE subscales, the sum of the negative baseline RCOPE subscales and the positive and negative subscales of the Brief RCOPE measured at follow-up as predictors. More specifically, in the first step of the analyses, demographic variables (age, race, gender, hospital, education level), the respective baseline health measures (e.g. functional status, depression) and the control

variables selective attrition and mortality were entered into the equation. Note that in the case of stress-related growth and spiritual outcome, the baseline measure was not entered into the first step since the concept of change is embedded in the items of these scales. In the second step, the RCOPE (positive baseline subscale total and negative baseline subscale total) were entered into the equation and an incremental F test was performed to test for the significance of the increase of R^2. This second step was repeated using the Brief RCOPE (positive and negative subscales) at follow-up as the predictors

When the sum of the RCOPE subscales emerged as an overall predictor of a dependent variable, additional Heckman analyses were conducted to determine which of the individual baseline RCOPE subscales was a significant predictor of that criterion. Each RCOPE subscale was added to the equation that included demographic variables (age, race, gender, hospital, education level), the respective baseline health measures (e.g. functional status, depression) and the control variables of selective attrition and mortality. The standardized parameter estimates of the individual RCOPE subscales were then examined for statistical significance to identify those religious coping methods that were predictive of changes in spiritual outcome, mental health and physical health over time.

Results

Comparisons of patients at baseline and follow-up

Examination of the paired t-tests indicated that the patients reported significant improvements in spiritual outcome, stress-related growth, quality of life and depressed mood (see Table 2). Although the external ratings of illness severity increased significantly from baseline to follow-up, the patients reported that their activities of daily living were significantly improved over the two-year period. Patients also indicated that

Table 2. Comparisons of survivors at baseline and follow-up on mental health and physical health

	Mean	*SD*	*t(d.f.)*
Mental health and spiritual scales			
Baseline spiritual outcome	11.67	3.11	
Follow-up	12.91	2.99	7.836 (264)***
Baseline stress-related growth	21.37	7.61	
Follow-up	24.46	4.62	6.593 (264)***
Baseline quality of life	6.70	2.02	
Follow-up	7.87	1.97	8.461 (267)***
Baseline depressed mood	14.83	2.67	
Follow-up	13.32	2.44	–9.095 (265)***
Physical health scales			
Baseline ADL impairment	25.34	4.69	
Follow-up	23.51	4.14	–6.187 (267)***
Baseline cognitive functioning	15.70	2.52	
Follow-up	15.90	2.46	1.165 (2.66)
Baseline severity of illness	2.84	0.83	
Follow-up	3.34	1.06	6.534 (266)***
Brief RCOPE			
Baseline positive	14.82	6.33	
Follow-up	15.48	5.95	2.339 (263)*
Baseline negative	2.28	3.26	
Follow-up	2.07	2.90	–0.983 (263)

*$p \leq .05$, **$p \leq .01$, ***$p \leq .001$

they used significantly more positive religious coping on the Brief RCOPE from baseline to follow-up.

Correlations between religious coping and spiritual outcome, mental health and physical health at follow-up

The results of the Pearson correlations indicated that the religious coping subscales were consistently related to the measures of spiritual outcome and mental health at follow-up (see Table 3). With respect to spiritual outcome, each of the positive RCOPE subscales was significantly related to better spiritual outcomes. Poorer spiritual outcomes were tied to reappraisals of God's powers, self-directing religious coping and interpersonal religious discontent. However, better spiritual outcomes were associated with four of the negative RCOPE subscales: demonic reappraisal, passive religious deferral, marking religious boundaries and pleading for direct intercession.

Focusing on stress-related growth, each of the positive RCOPE subscales was significantly associated with greater stress-related growth, with the exception of seeking religious direction. Among the negative RCOPE subscales, reappraisal of God's powers and self-directing religious coping were tied to less stress-related growth. However, pleading for direct intercession and marking religious boundaries were linked to more stress-related growth.

In terms of quality of life and depression, both criteria were significantly associated with greater spiritual discontent, interpersonal religious discontent and religious conversion. Poorer quality of life was also tied to significantly greater punishing God reappraisal, demonic reappraisal, reappraisal of God's power and religious forgiveness.

The RCOPE subscales were less consistently tied to the measures of physical health at follow-up. Less independence in living was associated with several negative RCOPE subscales: punishing God reappraisal, demonic reappraisal, spiritual discontent, marking religious boundaries and pleading for direct intercession. Interestingly, less independence in daily living was also significantly tied to religious forgiveness, seeking religious direction and religious conversion. Lower levels of cognitive functioning were significantly correlated with several negative RCOPE subscales: punishing God reappraisal, reappraisal of God's power, passive religious deferral and pleading for direct intercession.

Religious coping as a predictor of changes in spiritual outcome, mental health and physical health

Table 4 presents a summary of the Heckman analyses. First, we consider the findings using the RCOPE at baseline as the predictor of change. Overall, the RCOPE at baseline was predictive of spiritual outcome, stress-related growth and changes in depressed mood, functional status and cognitive functioning (R^2 change .03 to .28). The RCOPE was marginally predictive of changes in quality of life.

Table 5 presents a summary of the significant individual baseline RCOPE subscale predictors of change in spiritual outcome, mental health and physical health. The statistical effects of selective attrition and mortality were non-significant in all of these analyses. With respect to spiritual outcome, better outcomes at follow-up were predicted by each of the positive baseline RCOPE subscales as well as by demonic reappraisal, passive religious deferral, marking religious boundaries and pleading for direct intercession. Poorer spiritual outcome was associated with reappraisal of God's powers, self-directing religious coping and interpersonal religious discontent.

In terms of mental health, increases in stress-related growth were associated with each of the positive baseline RCOPE subscales, with the exception of a trend toward significance for seeking religious direction. Lower levels of stress-related growth were predicted by reappraisal of God's power, self-directing religious coping and, to a marginal degree, interpersonal religious discontent. Greater stress-related growth was also predicted by marking religious boundaries and, to a marginal extent, pleading for directing intercession. Declines in quality of life were predicted by demonic reappraisal and, to a marginal degree, religious conversion and spiritual discontent. Increases in depressed mood over time, were predicted by interpersonal religious discontent, religious purification, religious conversion and,

Table 3. Correlations between religious coping and spiritual outcome, mental health, and physical health for survivors at follow-up

	Spiritual outcome	*Stress-related growth*	*Quality of life*	*Depressed mood*	*ADL*	*Cognitive functioning*
Positive religious coping at baseline						
Benevolent reappraisal	.52***	.25***	–.02	–.01	.08	–.06
Collaborative religious coping	.51***	.32***	.00	.01	.07	–.06
Seeking spiritual support	.59***	.30***	.00	–.02	.03	–.07
Seeking support from clergy or church members	.55***	.29***	.03	–.05	.04	.00
Religious helping	.57***	.37***	–.04	.01	.08	–.02
Active religious surrender	.55***	.34***	.03	–.03	.04	.02
Religious purification	.54***	.20***	–.09	.09	.12	–.04
Seeking spiritual connection	.54***	.32***	.00	–.02	.05	–.03
Religious forgiveness	.49***	.20***	–.14*	.11	.19**	–.07
Seeking religious direction	.37***	.09	–.07	.11	.14*	–.07
Religious conversion	.38***	.18**	–.16*	.21***	.20***	–.11
Religious distraction	.47***	.26***	.00	.12	.09	–.11
Negative religious coping at baseline						
Punishing reappraisal	.05	.01	–.14*	.09	.18**	–.14*
Demonic reappraisal	.23***	.11	–.17**	.09	.19**	–.02
Reappraisal of God's power	–.28***	–.25***	–.14*	.09	.10	–.13*
Passive religious deferral	.21***	.11	–.05	.00	.09	–.15*
Self-directing religious coping	–.52***	–.29***	–.03	.10	–.02	–.07
Spiritual discontent	–.02	–.09	–.21***	.17*	.13*	–.05
Marking religious boundaries	.42***	.19***	–.12	.05	.14*	–.07
Interpersonal religious discontent	–.15*	–.07	–.15*	.20***	.12	–.05
Pleading for direct intercession	.29***	.13*	–.07	.11	.15*	–.16*

*$p \leq .05$, **$p \leq .01$, ***$p \leq .001$

Table 4. R^2 Effects of religious coping as a predictor of changes in spiritual outcome, mental health and physical health[a]

	Spiritual outcome	*Stress-related growth*	*Quality of life*	*Depressed mood*	*ADL*	*Cognitive functioning*
Predictors						
RCOPE at baseline	.28***	.10***	.02^{+}	.04***	.03***	.04***
Positive	.07***	.07***	.00	.00	.00	.01
Negative	–.06***	–.07**	–.02^{+}	.02	.07**	–.01
Brief RCOPE at follow-up	.36***	.12***	.04***	.06***	.04***	.04***
Positive	.32***	.32***	.00	.02	.04	.05*
Negative	–.11*	–.12	–.13**	.15***	.20*	–.04

$^{+}p \leq .10$, $*p \leq .05$, $**p \leq .01$, $***p \leq .001$

[a]Heckman analyses control for effects of age, race, gender, hospital, education and respective baseline physical and mental health variables, with the exception of stress-related growth and spiritual outcome. R^2 statistics are reported for RCOPE and Brief RCOPE; standardized parameter estimates are presented for positive and negative subscales of RCOPE and Brief RCOPE. All statistics reported are controlled for non-response and mortality using Heckman analyses

Table 5. Summary of results for significant religious coping predictors of changes in spiritual outcome, mental health and physical health[a,b]

	Spiritual outcome	*Stress-related growth*	*Quality of life*	*Depressed mood*	*ADL*	*Cognitive functioning*
Positive religious coping at baseline						
Benevolent reappraisal	.45***	.42***				
Collaborative religious coping	.43***	.49***				
Seeking spiritual support	.63***	.68***				
Seeking support from clergy or church members	.46***	.49***				.09*
Religious helping	.53***	.66***				
Active religious surrender	.49***	.61***				.08+
Religious purification	.48***	.39***		.11*		
Seeking spiritual connection	.47***	.57***				
Religious forgiveness	.38***	.37***			.18**	
Seeking religious direction	.28***	.17+			.13+	
Religious conversion	.27***	.20*	–.07+	.11**	.20**	
Religious distraction	.39***	.40***				
Negative religious coping at baseline						
Punishing reappraisal					.23*	
Demonic reappraisal	.12*		–.09*		.23**	
Reappraisal of God's power	–.37***	–.48**				
Passive religious deferral	.12*				.22**	
Self-directing religious coping	–.55***	–.45***				
Spiritual discontent			–.17+	.19+		
Marking religious boundaries	. 48***	.39**			.20+	
Interpersonal religious discontent	–.28**	–.31+		.16*		
Pleading for direct intercession	.20***	.15+		.08+	.17*	

+$p \leq .10$, *$p \leq .05$, **$p \leq .01$,***$p \leq .001$

[a]Analyses control for effects of age, race, gender, hospital, education and respective baseline physical and mental health variables, with the exception of stress-related growth and spiritual outcome

[b]Standardized parameter estimates presented are controlled for non-response and mortality using Heckman analyses

marginally, spiritual discontent and pleading for direct intercession.

With respect to physical health, declines in functional status were associated with punishing God reappraisals, demonic reappraisals, passive religious deferral, pleading for direct intercession, religious forgiveness, religious conversion and, to a marginal degree, seeking religious direction and marking religious boundaries. Improvements in cognitive status were predicted by seeking support from clergy or church members and, marginally, active religious surrender.

Returning to Table 4, the Brief RCOPE subscales obtained at follow-up were significant retrospective predictors of change within each of the spiritual, mental health and physical health criteria (R^2 from .02 to .36) in the expected directions. More specifically, the negative religious coping subscale from the Brief RCOPE was retrospectively predictive of poorer spiritual outcome, declines in quality of life, increases in depression and declines in functional status. The positive religious coping subscale from the Brief RCOPE was retrospectively predictive of greater spiritual outcome and stress-related growth, and improvements in cognitive functioning.

Post-hoc analyses: stability and change in negative religious coping as a predictor of changes in quality of life, depressed mood and physical functioning

As expected, several of the negative religious coping methods were generally predictive of declines in spiritual outcome, mental health and physical health. These same coping methods were also linked to greater risk of mortality over a two-year period (Pargament et al., 2001). And yet, according to many religious traditions, religious struggle can set the stage for personal growth. We speculated that the key factor underlying the connection between negative religious coping and deterioration in health might involve the chronicity of the negative religious coping. Perhaps, a subsample of negative religious copers, those who are unable to resolve their religious struggles over time, are at particular health risk.

Because religious coping was assessed by the Brief RCOPE at both baseline and follow-up, we were able to conduct additional analyses of the relationships between stability and change in negative religious coping and changes in mental health and physical health. For the dependent variables in these analyses, we focused on the three indices of mental health and physical health most strongly tied to the negative religious coping subscale of the Brief RCOPE: quality of life, depressed mood and physical functioning. The patients were classified into one of four groups: transitory negative religious copers (those who reported negative religious coping of any kind at baseline but not at follow-up, $N = 40$), acute negative religious copers (those who reported negative religious coping of any kind at follow-up but not at baseline, $N = 44$), chronic negative religious copers (those who reported negative religious coping at both baseline and follow-up, $N = 61$) and non-negative religious copers (those who did not report any kind of negative religious coping at baseline and follow-up, $N = 94$).

Hierarchical regression analyses were conducted. Demographic variables were entered into the first step, the respective baseline mental health or physical health measure was entered into the second step and dummy variables for the three negative religious coping groups were entered into the third step. The non-negative religious copers served as the comparison group for these analyses. The results of these analyses are presented in Table 6. Of the negative religious coping groups, only the chronic negative religious copers experienced greater risk for deterioration on the indices of mental health and physical health. Specifically, chronic negative religious copers declined in their quality of life (B = –.17) and, to a marginal degree, became more depressed (B = .14) and more physically dependent (B = .14) from baseline to follow-up in comparison to non-negative religious copers.

Discussion

This study attempted to advance the empirical study of religion and health in several ways. First, we engaged in a finer-grained analysis of religiousness. Studies in this area have generally measured religion through global indices, such as frequency of prayer, frequency of church

Table 6. Stability and change of negative religious coping from baseline to follow-up as a predictor of changes in mental health and physical health

	Step 1			*Step 2*			*Step 3*		
Predictors	*QOL*	*Depressed mood*	*ADL*	*QOL*	*Depressed mood*	*ADL*	*QOL*	*Depressed mood*	*ADL*
Age	–.04	–.09	.16**	–.07	–.03	.15**	–.10	–.02	.16***
Race	.03	–.14	.01	.01	–.08	.03	.04	–.10+	.01
Sex	–.10	.00	.11	–.02	.03	.02	–.03	.03	.02
Hospital	–.09	.05	.09	–.13+	.07	.15**	–.12*	.07	.14**
Highest grade	.04	–.11	.00	.03	–.10+	.03	.00	–.07	.05
Baseline health				.41***	.45***	.45***	.40***	.43***	.43***
Transitory coping[a]							.06	–.02	–.02
Acute coping[1]							.05	–.02	–.04
Chronic coping[a]							–.17***	.14**	.14**
Multiple R^2	**.01**	**.04**	**.04**	**.17*** **	**.23*** **	**.22*** **	**.21*** **	**.25*** **	**.24*** **
R^2 Change	–	–	–	**.16*** **	**.19*** **	**.18*** **	**.04*** **	**.02+**	**.02+**

$+p \leq .10$, $*p \leq .05$,$**p \leq .01$,$***p \leq .001$

[a]The comparison group for each of the negative religious coping groups was non-negative religious copers at baseline and follow-up

attendance, self-rated religiousness and religious affiliation. These studies have left unanswered the question: What is it about religion that makes a difference? Although various psychological and social mechanisms have been offered for the religion–health connection, the empirical evidence has not been supportive of these explanations (George, Ellison, & Larson, 2002). The simpler explanation is that religion has direct effects on health. In this investigation, we attempted to pinpoint specific forms of religious coping with an illness that lead directly to improvements or deterioration in health, spiritually, mentally and physically.

Second, our study was longitudinal. With some important exceptions, the research on religion and health has relied on cross-sectional designs which can address neither the longer-term implications of religious coping for health nor the issue of whether religiousness, in fact, impacts health outcomes (Koenig et al., 2001). In this study, we focused on a sample of hospitalized elderly patients dealing with serious medical illnesses, and examined the degree to which various religious coping methods were predictive of changes in their health status over a two-year period.

Third, studies of religion and health have generally neglected spiritual criteria of health and well-being. In our investigation, we operationalized health holistically to include spiritual outcomes, mental health and physical health status. The inclusion of spiritual criteria is particularly notable, since the *sine qua non* of well-being among the religiously committed has more to do with the individual's relationship with the transcendent than to mental or physical health. Thus, we were able to examine the implications of religious coping for health criteria that hold significance to members of both health and religious communities.

As predicted, the methods of religious coping were associated with changes in health status. Further, the specific forms of religious coping were linked to changes in ways that were generally expected.

Religious coping and health outcomes

The correlations between religious coping at baseline and spiritual outcome, mental health and physical health at follow-up were generally significant and similar to those reported in a cross-sectional study of this patient sample at baseline (Koenig et al., 1998). For example, spiritual discontent and feeling punished by God were tied to less independence in daily living, poorer cognitive functioning, poorer quality of life and more depressed mood at both baseline and follow-up. The positive religious coping subscales were related to stress-related

growth, and positive spiritual outcome at follow-up as they were at baseline. Thus, religious coping methods at baseline held significant long-term as well as short-term health implications for these patients.

We conducted Heckman analyses to determine whether the religious coping methods predicted changes in health status from baseline to follow-up, after controlling for the effects of demographic variables, the relevant baseline health measure, and selective attrition and mortality effects. Overall, religious coping at baseline (as measured by the full RCOPE) and religious coping at follow-up (as measured by the Brief RCOPE) were predictive of spiritual outcome, stress-related growth and changes in mental health and physical health. These are longer-term religious coping effects than the three-week changes in mental health status reported by Pargament, Ishler, Dubow, Stanik, Rouiller, Crowe, Cullman, Albert and Royster (1994), the six-month changes in functional status found by Fitchett et al. (1999), the six-month changes in mental health and physical health reported by Koenig, Cohen, Blazer, Pieper, Meador, Shelp, Goli and DiPasquale (1992) and the 12-month changes in emotional distress found by Alferi et al. (1999) and Tix and Frazier (1998).

Using the Brief RCOPE and the RCOPE, we examined the specific methods of religious coping that were associated with changes in physical health and mental health. As predicted, the positive religious coping subscale of the Brief RCOPE at follow-up was predictive of increases in stress-related growth, spiritual outcomes and cognitive functioning. The negative religious coping subscale of the Brief RCOPE at follow-up was predictive of declines in spiritual outcome and quality of life, increases in depressed mood and declines in independence in daily activities. It should be noted that the quality of life measure was based on interviewer ratings rather than self-reports of the patients, and suggests that these findings are not simply a function of a self-report methodological bias.

With respect to the specific subscales of the full RCOPE at baseline, several of the negative religious coping subscales were generally predictive of declines in physical or mental health status. Punishing reappraisals, reappraisals of God's powers, self-directing religious coping, spiritual discontent and interpersonal religious discontent were tied to deterioration in one or more measures of physical health and mental health. Cross-sectional research has suggested that spiritual and religious conflict, punitive views of God, questions about God's powers or a rejection of God's role in the coping process are potentially harmful (Exline et al., 1999; Koenig, Pargament, & Nielsen, 1998; Pargament, Smith et al., 1998; Pargament, Zinnbauer et al., 1998; Smith et al., 2000; Trenholm et al., 1998). Our longitudinal findings offer stronger empirical support for these conclusions, and are consistent with Fitchett et al.'s (1999) longitudinal results linking negative religious coping to declines in physical functioning over six months. These declines in physical and mental health may help to explain the increased risk of mortality among the medically ill elderly who report higher levels of negative religious coping (Pargament et al., 2001).

Even though positive religious coping subscales were not consistently associated with changes in physical health, several of these subscales were generally predictive of improvements in mental health. Benevolent reappraisals, collaborative religious coping, seeking spiritual support, seeking support from clergy or members, religious helping to others, active religious surrender, seeking spiritual connection, seeking religious direction and religious distraction were generally related to increases in stress-related growth and spiritual outcome. Again, these findings buttress the existing cross-sectional research by pointing to particular methods of religious coping that have long-term implications for better mental health among people coping with major illnesses.

Pargament (1997, 2002) has noted that several types of religious coping methods may have mixed implications. The findings from this study support that view. Several of the negative religious coping methods in this study (e.g. passive religious deferral, marking religious boundaries, pleading for direct intercession) were related to improvements on some health measures and declines on others. For example, although demonic reappraisals of the illness were predictive of deterioration in functional status and quality of life, the same appraisals

were also associated with better spiritual outcome. Keep in mind too that demonic appraisals were also predictive of mortality among medically ill elderly (Pargament et al., 2001). These findings suggest that patients who try to make sense of their illness by invoking the Devil may be at risk for health and mental health problems, yet their efforts to find meaning in their situation may also be partially successful, for attributions to the Devil do provide a spiritual way to understand what may seem to be an incomprehensible situation. Explanations of health situations that involve the Devil may be preferable to no explanation at all or to explanations that challenge the notion of a loving, benevolent God.

Several of the positive methods of religious coping were also associated with tradeoffs in health. Religious purification, religious forgiveness and religious conversion predicted declines in activities of daily living, depressed mood and/or quality of life. The same religious coping scales, however, were related to improvement on the stress-related growth or spiritual outcome measures. Pargament (1997) has described two of these three methods of religious coping, religious forgiveness and religious conversion, as transformational; that is, they are designed to create major changes in both the goals of living and the pathways toward attaining these goals. These results suggest that changes of this magnitude may be accompanied by both 'pain and gain'. Longer-term follow-up studies are needed to learn whether people ultimately reach a more consistent resolution through these forms of transformational coping.

Before concluding this section, two additional points are noteworthy. First, these findings underscore the importance of attending not only to physical and psychological criteria of health and well-being, but to spiritual criteria as well. These criteria are not necessarily opposed to each other. The measure of spiritual outcome is related to the majority of religious coping scales in ways comparable to the other physical health and mental health measures. However, our results also suggest that spiritual outcomes may not always be compatible with physical health and mental health outcomes. Most of the mixed findings involved the spiritual outcome. Poorer physical and/or mental health and better spiritual outcome were associated with several forms of religious coping: religious purification, religious forgiveness, religious conversion, demonic reappraisal, passive religious deferral, marking religious boundaries and pleading for direct intercession. For example, religious passivity and pleading for a divine intercession were associated with poorer mental health and physical health, but better spiritual outcomes. From a health perspective, religious passivity and pleading for a divine intercession in the face of an illness may be viewed as undesirable, but from some religious perspectives these coping methods may be more worthwhile, embodying a recognition that there are limits to human control and needs to look beyond oneself for help. Researchers in the area of religion and health should be aware of these potential points of convergence and divergence and routinely include spiritual criteria of health and well-being in their empirical studies.

Second, our findings suggest that researchers should attend not only to the content of various methods of religious coping, but also to the stability of these coping methods. In a post-hoc comparison of negative religious coping over baseline and follow-up periods, it was the chronic group (those who made use of negative religious coping at both baseline and follow-up) that experienced significant declines in quality of life and, to a marginal extent, depressed mood and functional status. Individuals who reported negative religious coping only at baseline or only at follow-up were at no greater risk for declines in health than non-negative religious copers. For some people then, negative religious coping may be a relatively time-limited phenomenon without long-term health disadvantages. It is possible that a subset of this group may even experience physical, psychological or spiritual benefits through the process of religious struggle, as suggested by theories of religious development (see Fowler, 1981). Nevertheless, our findings show that the chronicity of negative religious coping is an important factor to consider in evaluating the potential risks of certain religious coping methods for physical health and mental health. Perhaps it is the chronicity of negative religious coping that also increases the risk of mortality.

Limitations and implications

The study of religious coping represents a promising direction for our efforts to understand and assist people faced with serious medical illness. This study has helped to identify particular forms of religious coping that hold significant long-term implications for health and mental health. However, this study was limited in several respects. First, the sample was restricted to mainline and conservative Christians in the southeast United States. Second, the magnitude of several of the effects was small statistically. Clearly, religious coping is only one of many factors that affect the health of medically ill elderly patients. Third, although we controlled for several potentially confounding variables (e.g. age, gender, race, illness severity, respective baseline health measures, selective attrition, mortality), we cannot rule out the possibility of other confounding factors, such as personality, emotionality, social support and other dimensions of baseline mental and physical health. Some of these factors could also be understood as mediating variables that help to explain the links between religious coping and health status. Fourth, even though this study was longitudinal, it only considered two points in time. Conceivably, changes in religiousness and health status *prior* to the hospitalization of the patients could have contributed to their religious coping, baseline functioning and changes in health status over the two-year period. Fifth, we only touched on the potentially important role stability and instability in religious coping may play in health-related outcomes.

Additional research is clearly needed. There are several important areas for further research. First, these findings need to be replicated in a larger sample of medically ill people to determine whether the results generalize to people in other parts of the United States, to other age groups and to other religious groups (e.g. Roman Catholics, liberal and mainline Protestants, Jewish, Muslim). Second, further research is needed to identify the factors that mediate the relationship between negative religious coping and mortality, such as physical health variables, personality/emotional factors and/or social alienation. Third, additional studies are needed to learn more about the implications of stability or instability in religious coping for health status. Longitudinal designs that assess religious coping and health status at three points in time are required to flesh out these effects. Finally, focused longer-term studies on transformational forms of coping (e.g. conversion, forgiveness) are necessary to determine the ultimate health implications of these coping methods.

These findings also have more practical significance. Given the impact religious coping appears to have among medically ill people, health professionals and religious professionals should begin to address religious coping in their clinical practice. Instruments such as the RCOPE could be used to identify religious resources as well as potential religious 'red flags' among the medically ill (Pargament, Zinnbauer et al., 1998). Interventions could be designed that access and build on positive religious coping methods to help the elderly face the challenges of medical illness. Interventions could also be developed that help medically ill people resolve their spiritual struggles before they become chronic, reducing the deleterious impact of negative forms of religious coping on mental health, physical health and mortality. Educational and preventive programs could be extended to a broader population before they encounter illnesses. To be maximally effective, we believe, these programs should be collaborative in nature, building on the unique resources of health professionals, religious professionals and researchers. Examples of interventions that blend health and spiritual components are already beginning to emerge in the literature, with promising results (e.g. Cole & Pargament, 1999; McCullough, 1999; Propst, Ostrom, Watkins, Dean, & Mashburn, 1992; Worthington, Kurusu, McCullough, & Sandage, 1996). In sum, this study of religious coping has helped us not only understand the ways religion expresses itself in the midst of medical illness, it has helped set the stage for efforts to integrate religion and spirituality more fully into clinical practice.

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