Religion, Spirituality, and Health in Medically Ill Hospitalized Older Patients

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OBJECTIVES: To examine the effect of religion and spirituality on social support, psychological functioning, and physical health in medically ill hospitalized older adults.

DESIGN: Cross-sectional survey.

SETTING: Duke University Medical Center.

PARTICIPANTS: A research nurse interviewed 838 consecutively admitted patients aged 50 and older to a general medical service.

MEASUREMENTS: Measures of religion included organizational religious activity (ORA), nonorganizational religious activity, intrinsic religiosity (IR), self-rated religiousness, and observer-rated religiousness (ORR). Measures of spirituality were self-rated spirituality, observer-rated spirituality (ORS), and daily spiritual experiences. Social support, depressive symptoms, cognitive status, cooperativeness, and physical health (self-rated and observer-rated) were the dependent variables. Regression models controlled for age, sex, race, and education.

RESULTS: Religiousness and spirituality consistently predicted greater social support, fewer depressive symptoms, better cognitive function, and greater cooperativeness ($P < .01$ to $P < .0001$). Relationships with physical health were weaker, although similar in direction. ORA predicted better physical functioning and observer-rated health and less-severe illness. IR tended to be associated with better physical functioning, and ORR and ORS with less-severe illness and less medical comorbidity (all $P < .05$). Patients categorizing themselves as neither spiritual nor religious tended to have worse self-rated and observer-rated health and greater medical comorbidity. In contrast, religious television or radio was associated with worse physical functioning and greater medical comorbidity.

CONCLUSION: Religious activities, attitudes, and spiritual experiences are prevalent in older hospitalized patients and are associated with greater social support, better psychological health, and to some extent, better physical health. Awareness of these relationships may improve health care. J Am Geriatr Soc 52:554–562, 2004.

Key words: religion; spirituality; social support; depression; coping

Religious beliefs and practices are common in the United States, especially among older adults. According to Gallup polls conducted in 2000 and 2001, religion was noted as “very important” by 60% of Americans aged 50 to 64, 67% of those aged 65 to 74, and 75% of those aged 75 and older.¹ Church or synagogue attendance was also common, with 44% of persons aged 50 to 64, 50% of those aged 65 to 74, and 60% of aged 75 and older attending services within the past 7 days.

When physical illness strikes, religion and spirituality can become important for coping.² This may be particularly true for hospitalized patients, who must cope not only with unpleasant physical symptoms but also with the stress of being hospitalized.³ Hospital admission often underscores the seriousness of the condition and nearness to death. Patients must abandon their usual roles in society, take on a more dependent role, and confront the unknown. Hospitalization can trigger underlying conflicts regarding separation and loss and threaten one’s sense of control and adequacy. Likewise, confinement to a hospital bed and hospital routines restrict mobility, limit stimulation, and often assault the patient’s sense of competence. Religious or spiritual beliefs may help patients to cope with these stressful experiences.

What do the terms religious and spiritual mean, how are they distinguished from each other, and does their value in coping with stress differ? Religion is an organized system of beliefs, practices, and symbols designed to facilitate closeness to a higher power and includes the understanding of one’s relationship with and responsibility to others.⁴ Religiousness involves three major dimensions: (1) organizational religious activity (ORA), (2) nonorganizational

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religious activity (NORA), and (3) subjective or intrinsic religiosity (IR). ORA includes attending church or synagogue, participating in prayer or Bible study groups, and going to other church/synagogue functions. This is the social, other-directed dimension of religiousness. NORA consists of more private and personal religious behaviors. These include prayer or meditation, reading the Bible or other religious literature, and listening to religious radio or watching religious television. These activities are typically done alone and do not necessarily involve relating to other people. Finally, IR reflects the extent to which religion is the primary motivating factor in people’s lives, drives behavior, and influences decision-making.

NORA and IR are the two private dimensions of religiousness that can be relied on regardless of health status and may be preferred over ORA during times of illness. Persons heavily involved in such expressions of religion may cope better with changes in physical health because their self-esteem and sense of well-being are not as tied to their physical circumstances. At least one prospective study has shown that medically ill older hospitalized patients recover more quickly from depression if they are more intrinsically religious.6

Although religiousness is an important construct, most would agree that there is something more that needs to be assessed. Spirituality is the quest for understanding life’s ultimate questions and the meaning and purpose of living, which often leads to the development of rituals and a shared religious community, but not necessarily.4 Many persons may not be formally affiliated with a religious tradition or even believe in God, yet still be involved in a spiritual quest, seeking meaning in something outside of their own personal egos. Spirituality, though, means different things to different people. Spirituality has been difficult to capture by measuring observed activities or even questions about beliefs. People themselves define what being spiritual means to them.

Study Hypotheses
First, it was hypothesized that religious or spiritual practices, attitudes, and experiences would be widespread, given their possible role in coping. Second, greater religiousness and spirituality would be associated with greater social support, fewer depressive symptoms, better cognitive functioning, and greater cooperation during the interview process (reflecting less mistrust). Third, religiousness and spirituality would be correlated with better physical health and overall functioning, but turning to religion to cope as illness advanced might partially offset a positive association with better health. Fourth, those who considered themselves both religious and spiritual would have the best psychological, social, and physical health, whereas those who considered themselves neither spiritual nor religious would have the worst, and those who considered themselves spiritual but not religious or religious but not spiritual would have intermediate health. Finally, associations would be strongest in older patients (≥75).

METHODS
Procedure
Between August 1998 and April 2002, patients consecutively admitted to the general medicine service at Duke University Medical Center were identified for study participation using lists of daily admissions. After obtaining written informed consent from the patient, a research nurse conducted a 60- to 90-minute interview in the patient’s room, completed a brief physical examination, and reviewed the medical record. The research nurse was retrained every 6 months throughout the study period to avoid drift in data collection.

Measures
Demographics
Age, sex, race, and education were determined.

Social Support
The 11-item version of the Duke Social Support Index examines two major components of social support—social network and subjective support.7 This version was developed specifically for use in older patients.

Depression
The 11-item Brief Depression Scale is a self-rated depression scale that was specifically developed and validated for use in medically ill hospitalized patients.8 The “yes-no” response format allows easy use in even the sickest patients.

Cognitive Status
An abbreviated version of the Mini-Mental State Examination, developed and validated specifically for use in medically ill, frail patients,9,10 was administered. Scores on this version range from 0 to 18; scores of 13 or lower indicate significant impairment.

Level of Cooperativeness
At the completion of the interview, the research nurse rated the patient’s overall cooperativeness during the interview on a 6-point Likert scale ranging from not cooperative (0) to very cooperative (5).

Physical Illness
To measure physical illness burden, two self-rated and three observer-rated measures of physical health status were used.

The Duke Activity Status Index is a 12-item self-report questionnaire designed to measure current level of physical functioning (ability to perform activities of daily living (ADLs)).11 The 12 items assess personal care, ambulation, household tasks, and recreational activities, with response categories ranging from unable to perform ADL (1) to easy to perform (3).

Self-rated physical health was assessed by asking, “How would you rate your overall physical health?” Responses ranged from very poor (1) to excellent (6).

The American Society of Anesthesiologists (ASA) Severity of Illness Scale consists of a single item based on the observer’s overall rating of the patient’s severity of medical illness,13 with options ranging from not at all ill (1) to very severe illness (5).

The Cumulative Illness Rating Scale involves an observer-rated assessment of the severity of impairment of 12 major organ systems (e.g., cardiac, vascular, respiratory).14 Each organ system is rated on a scale of 0 to 4, with 0 indicating no impairment and 4 indicating very severe impairment.
The Charlson Comorbidity Index measures overall illness burden based on number and severity of comorbid illnesses using 31 diagnostic categories of illness based on the International Classification of Diseases, Ninth Revision. Each active medical diagnosis was assigned standardized weights and then summed to create an overall comorbidity score.

Religion

Religious Affiliation
Religious affiliation was dichotomized into any affiliation versus none (no affiliation, agnostic, or atheist).

Organizational Religious Activity
ORA was measured by assessing frequency of attendance at church or religious meetings, with responses ranging from never (1) to more than once a week (6), and frequency of participation in other religious group activities such as adult Sunday school classes, Bible study groups, and prayer groups, with similar response categories. Summing these two items created an ORA scale.

Nonorganizational Religious Activity
NORA was measured by assessing frequency of private prayer other than at meal times, with responses ranging from not at all (1) to three or more times per day (6), and by frequency of reading the Bible or other religious literature, with responses ranging from not at all (1) to several times per day (6). Summing these two items created a NORA scale.

Religious Television and Radio
Religious television and radio (RTV) was assessed using a single question, with responses ranging from not at all (1) to several times per day (6). This variable is usually considered a type of NORA, but because previous research has shown a different relationship with health than private prayer or scripture reading, this variable was examined separately. The questions constituting the ORA, NORA, and RTV scales were taken from the Springfield Religiosity Schedule.

Intrinsic Religiosity
IR was measured using Hoge’s 10-item intrinsic religiosity scale, which contains statements about religious motivation. Patients were asked to note the extent to which they felt the statement was true for them, from definitely not true (1) to definitely true (5).

Spirituality

There is no widely accepted measure of spirituality. Research that purports to measure spirituality usually measures religiousness. In the present study, spirituality was assessed in four ways. The first three measures used an approach in which patients were allowed to define for themselves what the term “spiritual” meant to them, contrasting it with “religious.” The fourth measure assessed spiritual experiences using a standard scale.

Self-Rated Spirituality and Religiousness
Patients were asked to rate their own spirituality (self-rated spirituality (SRS)) on a five-point Likert scale, with responses ranging from “I am not spiritual at all” (1) to “I am very spiritual” (5). For self-rated religiousness (SRR), patients were asked to rate their religiousness from “I am not religious at all” (1) to “I am very religious” (5).

Self-Categorizations of Spirituality and Religiousness
 Patients were asked to place themselves into one of four categories: religious but not spiritual, spiritual but not religious, both religious and spiritual (BRS), or neither religious nor spiritual (NRS).

Observer-Rated Spirituality and Religiousness
Patients were asked to define the terms spirituality and religiousness as they understood them. The interviewer recorded the patient’s responses verbatim for each term. Based on the patient’s definition of spirituality, three health professionals independently rated how spiritual they judged the patient to be based on their definition. Ratings were based on the definition of spirituality described in the introduction of this paper. A five-point Likert scale was used for rating, with responses ranging from not spiritual at all to very spiritual (5). The same procedure was followed for scoring observer-rated religiousness (ORS) not religious at all to very religious (5). For spirituality ratings, as expected, interrater reliability coefficients were relatively low, averaging r = 0.39, whereas interrater coefficients for religiousness ratings averaged higher at r = 0.47.

The observer-rated spirituality (ORS) ratings by the three raters were summed to produce the ORS scale, which ranged from 3 to 15. Similarly, the ORR scale was created ranging from 3 to 15. For both scales, if one of the three ratings was missing (2% of cases), the average of the other two was used as the replacement value. The ORS and ORR scales (excluding cases where replacement values were used) correlated with one another at r = 0.75.

Daily Spiritual Experiences
Finally, spiritual experiences were measured using the 16-item daily spiritual experience (DSE) scale. This scale seeks to assess the perception of the transcendent (e.g., God) and interactions with the transcendent in daily life. Items focus on experience rather than beliefs or behaviors, and the scale developers claim it is applicable to persons from any religious background. Test-retest, interrater, and internal consistency reliability (Cronbach alpha > 0.93) are all acceptable. Response options range from never or almost never (1) to many times a day (5).

Statistical Analysis
Frequency distributions were examined for all variables. Pearson correlations with age were examined for all religious and spiritual variables. Relationships between religious and spiritual factors, psychosocial characteristics (social support, depression, cognitive functioning, and cooperativeness), and physical health were examined using least squares linear regression. All analyses were controlled for age, sex, ethnicity, and education. Standardized betas and level of statistical significance were calculated. Because of multiple statistical comparisons and the exploratory nature of this study; P < .01 was considered statistically significant, whereas 0.10 < P < .01 was considered a trend. For statistically significant associations, analyses were
RESULTS

Sample

A total of 2,477 consecutive patients aged 50 and older were admitted to the general medical service during the screening period. Patients did not participate in the study for the following reasons: discharged before seen (n = 456); delirium or dementia precluding psychological testing (n = 269); severe physical illness (n = 239); inability to communicate because of aphasia, tracheostomy, or severe hearing loss (n = 203); gone for a medical or surgical procedure, transferred to another service, died, could not be located or otherwise could not be interviewed (n = 38); and family or health professional failed to give consent or prevented the interview (n = 27). Of the 1,245 patients that could be interviewed, 407 refused to participate or stopped the interview before it was completed, yielding a final sample of 838 (67% adjusted response rate).

A computer program randomly selected approximately one of every 20 nonparticipants (n = 72) on whom age, sex, race, insurance status, and medical diagnosis were collected and compared with those of participants. Nonparticipants did not differ from participants on race (35% vs 39% nonwhite), sex (49% vs 53% female), or medical insurance (50% vs 47% private) but were more likely to be older (71.1 vs 64.3; P < .0001) and have chronic pulmonary or infectious diseases (49% vs 29%; P < .01) and less likely to have cardiovascular disease (15% vs 31%; P < .01).

Sample Characteristics

The average age of the final sample was 64.3 (54% aged 50–64, 28% aged 65–74, and 18% aged ≥75), the average education level ± standard deviation was 11.9 ± 3.9 years, and 53.1% were women and 61.2% Caucasian. Psychosocial, physical health, and religious characteristics are described in Table 1. Approximately one-third of patients (31.1%) had a primary diagnosis of heart or circulatory system disease, whereas 19.3% had gastrointestinal disease, 15.0% chronic pulmonary disease, 13.5% infectious disease, and the remaining 12.6% a range of other medical conditions. Medical comorbidity was common, with the average patient having more than five concurrent medical conditions. Most patients had severe illness (ASA score = 4.2), and poor physical functioning as measured using the Duke Activity Status Index (average 18.7, range 12–36, where 12 represents inability to perform any of the 12 ADLs assessed). Depressive symptoms were likewise common, with an average of 3.9 on the Brief Depression Scale (≥3 indicates significant depression.)

Hypothesis 1: Religious and spiritual attitudes and practices will be widespread in medically ill older patients given their role in coping with physical illness.

Most patients (97.6%) were religiously affiliated. The predominant religious groups represented in the sample

### Table 1. Psychosocial, Physical Health, and Religious Characteristics of Sample (N = 838)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Psychosocial, mean ± SD</strong></td>
<td></td>
</tr>
<tr>
<td>Abbreviated Duke Social Support Index (range 11–33)</td>
<td>27.4 ± 3.5</td>
</tr>
<tr>
<td>Brief Depression Scale (range 0–11)</td>
<td>3.9 ± 2.9</td>
</tr>
<tr>
<td>Abbreviated Mini-Mental State Examination (range 0–18)</td>
<td>15.2 ± 2.7</td>
</tr>
<tr>
<td><strong>Physical health, mean ± SD</strong></td>
<td></td>
</tr>
<tr>
<td>Duke Activity Status Index (range 12–36)</td>
<td>18.7 ± 5.2</td>
</tr>
<tr>
<td>Observer-rated illness severity (range 1–5)</td>
<td>4.2 ± 0.7</td>
</tr>
<tr>
<td>Self-rated health (range 1–6)</td>
<td>3.2 ± 1.1</td>
</tr>
<tr>
<td>Cumulative Illness Rating scale (range 0–48)</td>
<td>10.1 ± 4.0</td>
</tr>
<tr>
<td>Charlson Comorbidity Index (range 0–49)</td>
<td>7.9 ± 3.7</td>
</tr>
<tr>
<td><strong>Religious</strong></td>
<td></td>
</tr>
<tr>
<td>Organizational religious activity, mean ± SD (range 2–12)</td>
<td>5.6 ± 2.6</td>
</tr>
<tr>
<td>Nonorganizational religious activity, mean ± SD (range 2–12)</td>
<td>7.6 ± 2.2</td>
</tr>
<tr>
<td>Religious television/radio, mean ± SD (range 1–6)</td>
<td>3.2 ± 1.3</td>
</tr>
<tr>
<td>Intrinsic religiosity, mean ± SD (range 10–50)</td>
<td>39.9 ± 6.8</td>
</tr>
<tr>
<td>Self-rated spirituality, mean ± SD (range 1–5)</td>
<td>3.8 ± 0.9</td>
</tr>
<tr>
<td>Self-rated religiousness, mean ± SD (range 1–5)</td>
<td>3.6 ± 1.0</td>
</tr>
<tr>
<td>Spiritual-religious categories, %</td>
<td></td>
</tr>
<tr>
<td>Religious, not spiritual</td>
<td>2.4</td>
</tr>
<tr>
<td>Spiritual, not religious</td>
<td>6.9</td>
</tr>
<tr>
<td>Spiritual and religious</td>
<td>87.5</td>
</tr>
<tr>
<td>Neither spiritual nor religious</td>
<td>2.5</td>
</tr>
<tr>
<td>Observer-rated spirituality, mean ± SD (range 3–15)</td>
<td>9.7 ± 2.6</td>
</tr>
<tr>
<td>Observer-rated religiousness, mean ± SD (range 3–15)</td>
<td>9.0 ± 2.8</td>
</tr>
<tr>
<td>Daily spiritual experiences, mean ± SD (range 16–80)</td>
<td>61.0 ± 12.1</td>
</tr>
</tbody>
</table>

Note: n may vary by up to 1%.
SD = standard deviation.
were Baptist or Southern Baptist (47.1%), Methodist (10.7%), Pentecostal Holiness (9.6%), Catholic (5.0%), Presbyterian (3.0%), and Episcopal (2.3%). Religious attendance was common (37.3% weekly or more), as were private prayer (80.8% at least once daily) and reading the Bible or other religious literature (50.7% at least several times per week). Patients indicated that such religious activities were frequently used to help cope with health problems. DSEs were likewise prevalent, with an average score on the DSE scale of 61.0, far surpassing the average scores of middle-age women and college students found in other studies\(^{19}\) of 46 to 49. Fifty-five percent of patients considered themselves quite or very spiritual, whereas 61% considered themselves quite or very religious, and 66% considered themselves more spiritual or more religious. Associations were particularly strong for ORA in patients aged 75 and older (\(\beta = -0.22\)), for IR in those aged 65 to 74 (\(\beta = -0.16\)), and for DSEs in those aged 50 to 64 (\(\beta = -0.12\)).

Cognitive functioning was better in those more involved in private religious activities such as prayer or Bible study and those who observed them to be more religious or spiritual; all associations were strongest in persons aged 65 and older. There was also a trend towards better cognitive functioning in those having more DSEs. In contrast, those rating themselves more religious tended to have worse cognition.

Degree of cooperativeness was uniformly related to greater religiousness and spirituality. Patients who prayed or read the Bible more often and those who had more DSEs have worse cognition. Associations were particularly strong for ORA in patients aged 75 and older (\(\beta = -0.22\)), for IR in those aged 65 to 74 (\(\beta = -0.16\)), and for DSEs in those aged 50 to 64 (\(\beta = -0.12\)).

Table 2. Religion and Psychosocial Characteristics (N = 838)

<table>
<thead>
<tr>
<th>Religious Characteristic</th>
<th>Social Support</th>
<th>Depressive Symptoms</th>
<th>Cognitive Function</th>
<th>Degree of Cooperation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any religious affiliation</td>
<td>0.10(\dagger)</td>
<td>-0.01(\dagger)</td>
<td>0.04(\dagger)</td>
<td>0.11(\dagger)</td>
</tr>
<tr>
<td>Organizational religious activity</td>
<td>0.23(\dagger)</td>
<td>-0.12(\dagger)</td>
<td>0.02(\dagger)</td>
<td>0.12(\dagger)</td>
</tr>
<tr>
<td>Nonorganizational religious activity</td>
<td>0.22(\dagger)</td>
<td>-0.07(\dagger)</td>
<td>0.11(\dagger)</td>
<td>0.21(\dagger)</td>
</tr>
<tr>
<td>Religious TV/radio</td>
<td>0.07</td>
<td>0.01</td>
<td>-0.01</td>
<td>0.07(\dagger)</td>
</tr>
<tr>
<td>Intrinsic religiosity</td>
<td>0.16(\dagger)</td>
<td>-0.10(\dagger)</td>
<td>0.02</td>
<td>0.08(\dagger)</td>
</tr>
<tr>
<td>Self-rated spirituality</td>
<td>0.19(\dagger)</td>
<td>-0.08(\dagger)</td>
<td>-0.05</td>
<td>0.04</td>
</tr>
<tr>
<td>Self-rated religiousness</td>
<td>0.16(\dagger)</td>
<td>-0.05</td>
<td>-0.06(\dagger)</td>
<td>0.01</td>
</tr>
<tr>
<td>Spiritual-religious categories(\dagger)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religious, not spiritual</td>
<td>-0.02</td>
<td>0.00</td>
<td>0.00</td>
<td>-0.05</td>
</tr>
<tr>
<td>Spiritual, not religious</td>
<td>-0.07(\dagger)</td>
<td>-0.02</td>
<td>0.02</td>
<td>0.03</td>
</tr>
<tr>
<td>Spiritual and religious</td>
<td>0.13(\dagger)</td>
<td>-0.01</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>Neither spiritual nor religious</td>
<td>-0.12(\dagger)</td>
<td>0.06(\dagger)</td>
<td>-0.05</td>
<td>-0.02</td>
</tr>
<tr>
<td>Observer-rated spirituality</td>
<td>0.11(\dagger)</td>
<td>-0.05</td>
<td>0.12(\dagger)</td>
<td>0.25(\dagger)</td>
</tr>
<tr>
<td>Observer-rated religiousness</td>
<td>0.13(\dagger)</td>
<td>-0.08(\dagger)</td>
<td>0.13(\dagger)</td>
<td>0.25(\dagger)</td>
</tr>
<tr>
<td>Daily spiritual experiences</td>
<td>0.28(\dagger)</td>
<td>-0.12(\dagger)</td>
<td>0.06(\dagger)</td>
<td>0.21(\dagger)</td>
</tr>
</tbody>
</table>

Note: \(n\) may vary by up to 1%.
\*Standardized estimate from regression model.
\(\dagger\) Each category compared with all others as reference group.
\(\ddagger\) 0.10 > \(P > 0.05\); \(\ddagger\) \(P < 0.05\); \(\ddagger\) \(P < 0.01\); \(\ddagger\) \(P < 0.001\); \(\ddagger\) \(P < 0.0001\) (controlled for age, sex, race, and education).
younger than 75. There was no relationship with private religious activities such as prayer or Bible study. Those with higher ORS and ORR tended to receive higher health ratings and experience fewer comorbid illnesses. In contrast, patients reporting more RTV tended to have worse physical functioning and were significantly more likely to have multiple comorbid illnesses on the Charlson Comorbidity Index; these associations were strongest in patients aged 50 to 64.

Hypothesis 4: Patients categorizing themselves as BRS will have the best psychosocial and physical health outcomes, and those as NRS will have the worst.

This hypothesis was confirmed most strongly for social support, and there were trends in the expected direction for physical health (Tables 2 and 3). Social support was inversely related to being NRS ($\beta = -0.12, P < .001$), especially in patients aged 50 to 64 ($\beta = -0.16$), and spiritual not religious ($\beta = -0.07, 0.10 > P > 0.01$), especially in patients aged 75 and older ($\beta = -0.26)$. In contrast, those who indicated they were BRS reported significantly greater support ($\beta = 0.13, P < .001$), especially if aged 75 and older ($\beta = 0.23$). With regard to depressive symptoms, those categorizing themselves as NRS tended to experience more depressive symptoms, although the relationship was weak ($\beta = 0.06$).

Concerning physical health, patients categorizing themselves as BRS tended to report fewer impaired ADLs ($\beta = -0.06$). In contrast, those who categorized themselves as NRS tended to rate themselves as less healthy ($\beta = -0.07$), to be rated by the research nurse as more severely ill ($\beta = 0.08$), and to experience more comorbid medical illness ($\beta = 0.07$) (all $P < .05$). Interestingly, although somewhat puzzling, patients who categorized themselves as religious but not spiritual had significantly better scores on self-rated and observer-rated health measures, particularly those younger than 75.

### DISCUSSION

This is the largest and most detailed study reported thus far on the religious and spiritual characteristics of medically ill hospitalized patients and their relationships to social, psychological, and physical health factors. These are among the sickest patients that medical practitioners treat and the ones most likely to have their coping abilities challenged by illness and disability. As expected, religious/spiritual beliefs and practices were widespread (true for all age groups) and, not surprisingly, were frequently used to cope with illness. This confirms the findings from other samples of medically ill patients in North Carolina$^{20-22}$ and elsewhere.$^{23-26}$ Religious beliefs help patients make sense of their medical conditions and may enable them to better integrate health changes into their lives. Religious practices can help to relax, distract, and counteract the effects of loneliness and isolation that are so prevalent.

### Social Support

Not only are religious and spiritual practices prevalent, they are also associated with measurably better psychosocial functioning. Most evident was the relationship with social support, a variable known to have strong links to well-being and better health status.$^{37,28}$ A recent review of the literature on religion and social support reported that 19 of 20 studies found significant associations between the two.$^{29}$ Although it is understandable that social religious activities (attending church and other religious meetings) might be correlated with higher support, it is less clear why involvement in private religious activities (prayer and Bible study), IR, or DSEs was so strongly correlated with social network size and satisfaction with social relationships here. One possibility is that, when religion becomes internalized so that it affects private life and experiences, it influences sociability and perhaps perception of relationships.
The relationship between social support and almost all measures of religiousness and spirituality represents the most striking and consistent finding in this study, especially because the effect was strongest in patients aged 75 and older. Although direction of causation cannot be determined here, longitudinal research over nearly 3 decades has shown that greater religious involvement predicts future nonreligious group memberships, contacts with close friends, and marital stability. If greater religiousness or spirituality enhances social support, then the findings of the present study are relevant for geriatricians treating older medical patients, given the importance of adequate social support in predicting health outcomes and ensuring compliance once patients return home.

Depressive Symptoms
Depressive symptoms are widespread in older medical inpatients and predict worse health outcomes and greater use of health services. In the present study, depressive symptoms were less common in patients who were more religious. Inverse associations with depressive symptoms were most evident for ORA, IR, and DSEs, especially in those aged 65 and older. These findings build on previous work in medical and community settings. Religious attendance has been inversely related to depressive symptoms in elderly patients recovering from hip surgery, older medical patients, and community-dwelling older adults in the United States and Europe. In longitudinal studies, religiousness predicts faster remission from depression in older medical inpatients and community-dwelling elderly, but this is the first study in medical patients to examine the relationship between depressive symptoms and DSEs. Overall, these findings suggest that religious activities, personal religiousness, and spiritual experiences are not only common in older patients, but that they are also often used successfully to cope with illness and ward off depression.

Cognitive Function
Cognitive functioning was positively related to ORS and ORR, especially in patients aged 75 and older. Those with better cognitive functioning may have been more articulate in their feelings about spirituality and religion, thereby leading to higher ratings by outside observers, but the positive association with private religious activities (NORA) is less easily dismissed as a methodological artifact. NORA was related to significantly better cognitive function (β = 0.11, P < .001), especially for those aged 65 and older. An earlier study of 850 hospitalized male veterans also found religious coping positively correlated with better cognitive function (β = 0.10, P < .01). Religious coping activities such as prayer or scripture reading may lead to better cognitive functioning, or perhaps more likely, better cognitive function may facilitate private religious activities (given the highly cognitive nature of such practices).

Cooperativeness
This is the second study of medical patients in which high levels of religiousness or spirituality predicted patient cooperativeness, particularly in those aged 65 and older. The first study involving 586 older medical inpatients found that greater religiousness was related to greater cooperativeness, with betas ranging from 0.20 to 0.25, similar in magnitude to those seen in the present study. Although it was perhaps not surprising that religious subjects were more cooperative than nonreligious subjects in a survey about religion, the strong relationship between cooperativeness and private activities and DSEs suggests that, when religion becomes personalized and associated with meaningful spiritual experiences, it might also lead to a greater desire to help others and facilitate the interview process. Whether religiousness or spirituality also predicts greater cooperativeness in healthcare settings or greater likelihood of participating in clinical research is unknown.

Physical Health
Relationships with physical health were less frequent and weaker than with psychosocial factors. This was partly expected, because religious beliefs and practices are often used to help cope with medical illness, and as severity of illness increases, religious activities, especially private ones, likewise increase. Thus, even if religious factors helped to prevent disability and limit the severity of medical illness, this would be difficult to demonstrate in a cross-sectional study, in which sicker patients turning to religion could neutralize such effects.

Nevertheless, ORA was related to better physical functioning and less-severe medical illness, particularly in those younger than 75. Whether such religious activity led to better functioning and physical health status, or whether better functioning and health status led to greater ability to participate in ORA, cannot be determined here, but a 12-year prospective study of nearly 3,000 older adults found evidence that religious attendance may forestall the development of functional disability and that, although physical disability also affects religious attendance, that effect is usually short term and does not offset the long-term effect of religious activity on preventing disability. With regard to the present study, it may be that ORA enhances physical health by keeping chronically ill older adults active and involved in the religious community and by providing meaningful activities and social support that enhance coping and maintain positive attitudes toward self-care, compliance, and motivation to recover. Few other religious characteristics predicted better physical health than ORA.

A more interesting and robust association was found between physical health status and RTV, although not in the same direction as other religious measures. Those who engaged more frequently in that activity had significantly more comorbid medical illnesses and tended to report worse physical functioning, an association found primarily in younger patients (aged 50–64). Frequency of RTV has also been correlated with higher blood pressure, worse overall health and more depressive symptoms in studies of community-dwelling elderly and with more generalized anxiety in younger populations. It is difficult to imagine why frequent RTV would cause a worsening of physical health status, except perhaps by fostering physical inactivity, but it could be that poorer physical functioning and more comorbid medical illness made it difficult for such
patients to attend religious meetings and was compensated for by turning to RTV.

Spiritual-Religious Categories

Patients categorizing themselves as BRS tended to have better psychosocial and physical health outcomes compared with those considering themselves NRS. Patients considering themselves BRS reported significantly more social support and experienced less physical disability. In the 1998 General Social Survey of 1,422 adults of all ages, investigators also found that individuals who perceived themselves as BRS tended to be at particularly low risk for morbidity. Those in the present study indicating that they were NRS tended to have worse health and more comorbid illnesses. They also had significantly less social support and tended to have more depression. These associations were fairly weak, although it may have been due to the small number of patients in the NRS category (n = 21).

Limitations and Treatment Implications

The cross-sectional nature of this study is its greatest limitation and precludes anything but speculation about whether religiousness influenced health or vice versa, but the findings are largely consistent with theoretical considerations and previous research, which includes prospective studies in medically ill and healthy populations. A second weakness is the multiple statistical comparisons made, increasing the likelihood that some findings may have been due to chance alone. This effect was partially corrected for by specifying that only relationships whose P-values were less than .01 would be considered statistically significant. Another limitation is that the study took place in the southeastern United States, where religion tends to be prevalent. Nevertheless, as noted earlier, Gallup polls show that older Americans as a group tend to be quite religious. Healthcare providers need to be aware of the wide prevalence of religious and spiritual activity in older hospitalized patients and recognize that these practices correlate with better psychosocial functioning and, to a lesser degree, with better health status. Whether greater religiousness or spirituality is the result or the cause of better health remains largely unknown. A practical method for grading cognitive state of patients for the clinician. J Psychiatr Res 1975;12:189-198.

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