

# Religion, Spirituality, and Health Status in Geriatric Outpatients

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## ABSTRACT

**BACKGROUND** Religion and spirituality remain important social and psychological factors in the lives of older adults, and there is continued interest in examining the effects of religion and spirituality on health status. The purpose of this study was to examine the interaction of religion and spirituality with self-reported health status in a community-dwelling geriatric population.

**METHODS** We performed a cross-sectional analysis of 277 geriatric outpatients participating in a cohort study in the Kansas City area. Patients underwent a home assessment of multiple health status and functional indicators by trained research assistants. A previously validated 5-item measure of religiosity and 12-item spirituality instrument were embedded during the final data collection. Univariate and multivariate analyses were performed to determine the relationship between each factor and self-reported health status.

**RESULTS** In univariate analyses, physical functioning ( $P < .01$ ), quality of life ( $P < .01$ ), race ( $P < .01$ ), depression ( $P < .01$ ), age ( $P = .01$ ), and spirituality ( $P < .01$ ) were all associated with self-reported health status, but religiosity was not ( $P = .12$ ). In a model adjusted for all covariates, however, spirituality remained independently associated with self-appraised good health ( $P = .01$ ).

**CONCLUSIONS** Geriatric outpatients who report greater spirituality, but not greater religiosity, are more likely to appraise their health as good. Spirituality may be an important explanatory factor of subjective health status in older adults.

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## INTRODUCTION

There is continued interest in examining the interaction of religion and spirituality with health-related outcomes.<sup>1</sup> Although health status has been one outcome of interest, a research review found an inconsistent relationship between measures of religiosity and subjective health status, limited by a failure to control for known covariates of health status.<sup>2</sup> It is possible that functional status is predictive of both religious service attendance and health status, which suggests one potential confounding factor.<sup>3</sup> In addition, although multiple studies have examined the association between religion and self-reported health,<sup>2</sup> none have explored the relationship among religion, spirituality, and health status.

Religion and spirituality are important social and psychological factors in the lives of older adults,<sup>4</sup> and the examination of self-reported health status is a key component of aging research. Global measures of self-rated health are independent predictors of mortality, even after adjusting for other such covariates as social and demographic factors and health behaviors.<sup>5</sup> In elderly persons self-ratings of health are strongly associated with changes in functional status over time, and those who report poor health are at increased risk for declines in their physical functioning.<sup>6</sup> Health status, despite variations in how it is measured, has also repeatedly been shown to be the best predictor of health service utilization.<sup>7</sup>

Conflicts of interest: none reported

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In studies that examine health-related outcomes, the conceptual distinction between religion and spirituality and the operationalization of these constructs are critical.<sup>8</sup> Although there are multiple definitions and interpretations, religion (or religiosity) has been viewed as the various organized, individual, and attitudinal manifestations of different faith traditions, whereas spirituality often connotes and expresses a sense of meaning, purpose, or power either from within or from a transcendent source.<sup>9</sup> Concomitantly, there is a plethora of instruments that are available to measure multiple dimensions of both spirituality and religiosity.<sup>10</sup> It is unclear, however, whether many of these instruments are useful in studies of individual or population health.

To understand further the relationship among religion, spirituality, and self-reported health status, we performed a secondary analysis of cross-sectional data from a cohort study of geriatric outpatients in a large Midwestern city.<sup>11</sup> The purpose of the present study was to examine the interaction of religion and spirituality with perceived health status in a geriatric population. We used a health status model proposed by Johnson and Wolinsky<sup>12</sup> as our conceptual framework to examine the relationship between self-reported health status and the variables of interest. This model posits that individual characteristics (eg, age, race, level of education) and functional status are independent explanatory factors of perceived health status in older adults. We viewed religion and spirituality as independent, individual characteristics in the model, and we added mental health status as a factor because of the association of psychological distress with appraisals of health status.<sup>13</sup>

## METHODS

This study was a secondary analysis of cross-sectional data from a larger cohort study. The parent study was designed to determine the feasibility of performance measures in predicting future health service utilization, health status, and functional status in older, community-dwelling primary care patients.<sup>14</sup> Patients underwent a home assessment of multiple health status, performance, and functional indicators by trained research assistants. A previously validated 5-item measure of religiosity<sup>15</sup> and a 12-item spirituality instrument<sup>16</sup> were embedded during the final data collection. The current study represents data collected 36 months after enrollment.

Participants were older adults who were screened and recruited for the parent study between April and November of 1996 from primary care sites within a Veteran's Affairs (VA) network ( $n = 142$ ) and a Medicare health management organization (HMO) ( $n = 350$ ) serving the Kansas City metropolitan area.

## Eligibility Criteria

Several inclusion and exclusion criteria were defined by the parent study. Patients were eligible if they were 65 years of age or older; were community dwelling, residing within 20 miles of their primary care site; and were enrolled in their respective care system (VA, HMO) for at least 1 year. The Mini Mental Status Examination (MMSE)<sup>17</sup> was used to stratify mental status entry criteria. Participants who scored 24 or higher were fully eligible, participants with scores of 16 to 23 were eligible if they had a caregiver available to maintain a utilization diary, and participants with MMSE scores under 16 were excluded. Functional and mobility screening were based on walking ability and excluded participants who were unable to walk at least 4 meters, as well as those determined to be either extremely fit or fragile (ie, gait speed faster than 1.3 m/sec or slower than 0.2 m/sec).

A total of 572 participants were screened for the parent study, and 492 elders met all criteria. The 80 exclusions included 21 who failed mental status criteria, 11 who failed mobility criteria, 5 who were not within the care system for 1 year, 4 who were outside the study radius, 3 who received most of their care outside the care system, 8 who refused home visits, and 28 who were excluded for other reasons. Approximately 25% of the initial sample ( $n = 115$ ) experienced 1 or more adverse outcomes (eg, hospitalization, nursing home placement, or death) after 1 year, accounting for a substantial discontinuation rate in the cohort.

## Measures

The following demographic information was collected: age, sex, race, and education level. The EuroQol, a measure of health status in 5 categories—mobility, self-care, usual activities, pain/discomfort, and anxiety/depression—was used to determine an estimate of health-related quality of life.<sup>18</sup> The physical functioning index (PFI) of the Medical Outcomes Study SF-36 was used to measure functional status.<sup>19</sup> This 10-item instrument is a self-report of a range of severe and minor physical limitations.<sup>20</sup> Mental health status was gauged by the Geriatric Depression Scale (GDS), a 15-item instrument with a dichotomous (yes or no) response format.<sup>21</sup>

Five items derived from questions developed by the National Opinion Research Center were preferentially selected according to a previously tested and validated model of religiosity and health status.<sup>15,22</sup> Frequency of religious or spiritual service attendance was used to assess organizational religiosity, and frequency of private prayer or spiritual practice was used to measure nonorganizational religiosity. Three items—self-reported strength of religious or spiritual orientation, closeness to God (or a higher force), and frequency of affective spiritual experiences—were used to measure subjective or intrinsic religiosity.

This measure is shown in the supplemental appendix,

**Table 1. Demographic Characteristics of Study Participants (N = 277)**

Characteristic	No. (%)
Age, years*	
65-70	86 (31)
71-75	98 (35)
76-80	59 (21)
81 and older	34 (12)
Sex	
Male	144 (52)
Female	133 (48)
Race	
White	218 (78)
African-American	55 (19)
Hispanic	2 (1)
Native American	2 (1)
Education level	
Grade school	41 (15)
High school	110 (40)
Technical or business	46 (16)
Some college	53 (19)
College grad/grad school	27 (10)

\* Age mean (SD) = 73.7 years (5.2 years).

which was used to assess spirituality and can be found online at <http://www.annfammed.org/cgi/content/full/2/49/DC1>.<sup>16</sup> The theoretical foundation for the SIWB has been described elsewhere.<sup>23</sup> In brief, a congruent, meaningful life scheme and a high degree of positive intentionality, or self-efficacy beliefs, promote personal agency that is an intermediary between spirituality and well-being. The SIWB contains 6 items that assess an individual's self-efficacy within the context of overcoming threatened or actual changes to their functioning, as well as 6 items that measure life scheme or a sense of coherence. Good reliability via internal consistency ( $\alpha = .87$ ) and factor analysis (total eigenvalue = 43.61% of total variance) and good validity via concurrent construct and discriminant validity testing have been demonstrated for this instrument.

The single-item measure of global health from the Years of Healthy Life (YOHL) scale was used to determine self-reported health status. The YOHL measure consists of a self-assessment of general health (would you say your health in general is ...) and a 5-item Likert response from excellent to poor.<sup>24</sup>

### Data Analysis

Descriptive analyses were used to describe the study sample. Self-reported health status was determined by responses from the YOHL and dichotomized into good health (for those reporting health as excellent, very good, and good) and poor health (for those reporting fair or poor health). Age and

the summed scores from the PFI, EuroQol, SIWB, and religiosity items were treated as continuous variables. Level of education, sex, and race (white vs nonwhite) were treated as categorical variables. Scores from the GDS were summed, dichotomized into depressed (scores of 10 to 15) or not depressed (0 to 9), and also treated as a categorical variable.

Univariate analyses were performed to determine the relationship between each factor and self-reported health status. A multivariate model that included all factors and YOHL responses as the dependent variable was fitted to determine independent predictors of self-reported health status. All analyses were performed using SAS statistical software (Version 8.00, 2000, SAS Institute, Cary, NC).

### RESULTS

Data from 277 patients who participated in the cross-sectional survey were included in the analysis. Table 1 contains the demographic distribution of the study sample. There were racial and education level differences in the proportion of good health to poor health responders. Those who were white and who had a higher level of education reported a greater proportion of good health to poor health than did those who were not white and who had lower educational levels.

Table 2 lists the unadjusted and adjusted variables associated with self-reported good health status. Spi-

**Table 2. Predictors of Self-Reported Good Health Status (N = 277)**

Factor*	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Age	0.94 (0.89–0.99) <sup>†</sup>	
Male	0.72 (0.41–1.25) <sup>‡</sup>	
White race	2.79 (1.51–5.17) <sup>§</sup>	3.32 (1.33–8.30) <sup>‡</sup>
Grade school	0.10 (0.02–0.49) <sup>‡</sup>	
Some high school	0.28 (0.06–1.44) <sup>‡</sup>	
High school graduate	0.24 (0.05–1.14) <sup>‡</sup>	
Technical/business school	0.29 (0.06–1.43) <sup>‡</sup>	
Some college	0.31 (0.06–1.49) <sup>‡</sup>	
Not depressed (GDS)	32.4 (4.03–261) <sup>§</sup>	
Physical functioning (SF36-PFI)	1.04 (1.03–1.05) <sup>§</sup>	1.03 (1.01–1.04) <sup>§</sup>
Quality of life (EuroQol)	1.69 (1.41–2.01) <sup>†</sup>	1.36 (1.09–1.70) <sup>‡</sup>
Religiosity (NORC)	0.93 (0.85–1.02) <sup>‡</sup>	
Spirituality (SIWB)	1.15 (1.10–1.21) <sup>§</sup>	1.09 (1.02–1.16) <sup>‡</sup>

OR = odds ratio; CI = confidence interval; GDS = Geriatric Depression Scale; SF36-PFI = Physical Functioning Index from SF-36; NORC = National Opinion Research Center; SIWB = Spirituality Index of Well-Being.

\*Referent factors: age-1 year younger; female, nonwhite; college graduate; GDS score of 0-9; PFI-index of 1 less; EuroQol-score of 0.1 less; SIWB-score of 1 less.

<sup>†</sup> P = .01.

<sup>‡</sup> P = NS.

<sup>§</sup> P < .01.

<sup>¶</sup> P < .05.

tuality ( $P < .01$ ), but not religiosity ( $P = .12$ ), was associated with self-reported good health status in the univariate and multivariate analysis.

## DISCUSSION

This study examined the association of religion and spirituality with self-reported health status in a geriatric population. Elders with greater religiosity were less likely to report good health status in univariate analysis, although this result was not statistically significant. Levin and colleagues<sup>22</sup> noted a positive association between organized religiosity (ie, religious service attendance) and health status, but found that nonorganized religiosity (ie, private religious practices) was inversely related to health status in a cross-sectional study of adult African Americans.

Religious service attendance and functional status have a significant association,<sup>25</sup> which accounts for the varied reported effects of religiosity on health status.<sup>2</sup> Idler and Kasl<sup>26</sup> found religious service attendance to be a strong predictor of better functional status, but that disability had minimal effects on subsequent attendance in community-dwelling elders in New Haven. Musick,<sup>2</sup> in a review of religiosity and subjective health in elderly community-dwelling adults, concluded that the effect of religious activity on perceived health disappeared when functional status was controlled.

We accounted for functional status as a potential confounder in 2 ways. First, we employed a validated model and incorporated items from all model domains (organized religious activity, nonorganized religious activity, subjective religiosity)<sup>22</sup> as a more comprehensive measure into our design. Organized religious activity was determined by a single-item measure of frequency of religious service. Responses were used as part of a summed score with 4 religiosity item responses that gauged nonorganized religious activity and subjective religiosity. Second, our regression model was adjusted for physical functioning.

In addition to functional status, race is another important variable to consider when examining any association of religion and health status.<sup>2</sup> Race and ethnicity exert a powerful influence on health status.<sup>27</sup> Among persons 65 to 74 years of age, non-Hispanic black persons are 1.7 times as likely and Hispanics are 1.4 times as likely to report fair or poor health than are non-Hispanic white persons.<sup>28</sup> Theoretical models that depict the structure of health status in older adults have highlighted the interrelationship of sociodemographic factors and functional status on perceived health.<sup>7,12</sup> Other factors have been suggested as significant influences on subjective health: social factors, such as sex and education level<sup>29</sup>; psychological states and mental

health status<sup>28</sup>; and measures of physical and objective health status.<sup>30</sup> Our study suggests that more comprehensive measures of religiosity do not predict who reports good health status in older adults.

We also found that race, physical functioning, quality of life, and spirituality are independent predictors of self-rated good health status. Spirituality might be a useful bridge in understanding not only who appraises their health as good or bad, but also how and why elders appraise their health.<sup>31</sup> The conceptual framework of our spirituality measure (SIWB) is based upon a congruent, meaningful life scheme and high degree of positive intentionality or self-efficacy.<sup>23</sup> Health optimism, or the reporting of good health despite objective physical evidence to the contrary,<sup>31</sup> is one possible explanation for the interaction between spirituality and health appraisal. Elders with a greater degree of spirituality might share characteristics with health optimists, who tend to use a health-transcendent approach to appraise their health and attribute their symptoms<sup>32</sup> and to incorporate a broader, more inclusive view of health.<sup>33</sup>

If this assumption is correct, social comparison theory—the way people compare themselves with others to learn about themselves<sup>34</sup>—may be useful to comprehend the interaction of spirituality and health status. Elders who are health optimists and perhaps who concomitantly have a greater degree of spirituality might use social comparisons to justify their health appraisals and normalize their physical symptoms by attributing them to old age rather than illness.<sup>35</sup> In addition, spirituality might act to potentiate a common belief of older adults that they are exceptions to the aging process and that their health is superior to their age peers.<sup>36</sup>

There were several limitations to our study. Although we used a religiosity measure based on a validated model, our conceptualization of spirituality is a new construct based on qualitative research, and our instrument is new. The cross-sectional design of the study did not allow us to draw any definitive conclusions about the causal relationships of the variables. The study population was largely white, which limits the power to analyze by ethnicity, but our demographic proportion of white to nonwhite is comparable to the racial and ethnic distribution in the region.<sup>37</sup>

There is conceptual overlap between the EuroQol measure and the single YOHL item, introducing a degree of redundancy into the analysis. We selected the YOHL item as the dependent variable because it is more widely utilized in US populations<sup>24</sup>; however, the EuroQol may be a more precise indicator of perceived health status. Finally, selection bias could have been engendered by the parent study and subsequent sample attrition before final data collection. Our study design, however, utilized instruments that have been

validated and are well recognized in geriatric population research, and our analyses accounted for known covariates of self-reported health status.

In summary, we examined the relationship among spirituality, religiosity, and self-reported health and found geriatric outpatients who report greater spirituality, but not greater religiosity, are more likely to appraise their health as good. Spirituality, as determined by the SIWB, may be best situated in studies of chronic illness, aging, and end-of-life care as an explanatory factor or predictor of subjective health status or quality of life. Future research should use a longitudinal study design in addition to sampling a diverse study population.

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**Key words:** Religion and medicine; spirituality; health status; geriatrics

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