

Religious Activities and Attitudes of Older Adults in a Geriatric Assessment Clinic

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Few studies have examined the prevalence, salience, and impact of religious beliefs, activities, and commitment among medical patients in later life. Surveys of the U.S. population aged 65 years and over reveal a high frequency of such beliefs and activities, which are reported to play a significant role in their lives. In this study, the religious beliefs, activities, and motivations of 106 consecutive patients (mean age 74.4 years) attending a geriatric outpatient clinic were examined. A high prevalence of orthodox Christian beliefs, religious community activity, private devotional activity, and intrinsic religious orientation was found. Levels of religious

activity and intrinsic orientation were lower among patients with cancer, chronic anxiety, depressive symptoms, and those who smoked cigarettes or consumed moderate to large amounts of alcohol. Intrinsic religiosity was lower among men with hypertension. Patients with mild to moderate dementia tended to have higher levels of intrinsic religious orientation. The results of this study suggest that religion is a powerful cultural force in the lives of older medical patients and is integrally related to both mental and physical health. J Am Geriatr Soc 36:362-374, 1988

The geriatric assessment unit has recently emerged as an important new strategy of optimizing the health care of certain high-risk older adults. In addition to addressing physical health concerns, these units nearly always attend to mental health and social issues.¹ Research directed at the epidemiology of physical illness, and the psychosocial and cultural characteristics of elderly patients attending such clinics, is only in its infancy. Religion is a cultural force that may affect beliefs about health and influence help-seeking behavior among older adults. Little, however, is known concerning religious beliefs or practices among geriatric patients or the extent to which

these have an impact upon mental and physical health. The need for understanding by medical practitioners of patients' religious and cultural beliefs and practices, particularly those potentially influencing health behaviors and attitudes, has long been emphasized.²

Religious beliefs and behaviors are common among the elderly.³ Many older adults claim their religion enables them to cope more effectively with stressful or difficult experiences,^{3,4} and several studies have reported positive correlations between indices of religiosity and adjustment or well-being among adults in later life.⁵⁻⁷ Stressful life changes, such as bereavement, forced relocation, and relinquishing meaningful social roles, have been associated with negative changes in both mental and physical health.⁸⁻¹⁰ Hence, medical professionals ought to be aware of cultural factors like religion that may influence the lives of older persons and consequently affect their ability to cope with the changes associated with aging.

Much knowledge about the religious characteristics of older adults in the United States comes from national surveys by the Gallup Organization and its Princeton Religion Research Center. However, no national surveys have focused primarily on the religious behaviors and attitudes of elderly persons seeking medical care for

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acute and chronic illness, and no systematic epidemiologic research on this subject exists, although anecdotal reports have appeared from time to time in the medical literature. Covalt,¹¹ for example, reported that older patients during her 25 years of experience in geriatric rehabilitation rarely expressed concern to her about religious matters, and she observed little turning to religion by her patients during times of crisis. Unless a physician overtly or tacitly invites comments about spiritual and religious interests, patients may seldom mention them, for our highly specialized society tends to relegate "God talk" to specialists in that subject.

With regard to the relationship between religious behaviors and health, a scant and widely scattered but significant body of data exists. Again, however, little research has focused predominantly on older populations. Church membership and attendance have been found by several investigators to be inversely related to mortality rates,¹²⁻¹⁴ particularly from such illnesses as atherosclerotic heart disease, pulmonary emphysema, cirrhosis of the liver, and suicide, and they seem to buffer the adverse effects of migration and relocation on blood pressure.¹⁵⁻¹⁷ Blood pressure also has been shown by Benson et al¹⁸ to be favorably affected by meditative prayer. An inverse relationship was found between religious belief/activity and coronary heart disease in a review of the research on this subject.¹⁹ With regard to the impact of religion on the perception of illness, Yates et al²⁰ examined the *perception* of pain by patients with advanced cancer. Reports of pain were significantly less among subjects with strong religious beliefs and frequent church attenders. Finally, Naguib et al²¹ found that church membership and frequency of attendance were highly predictive of participation in a cervical cancer screening program, suggesting a possible correlation between *compliance* with medical regimens and degree of religious community involvement.

Not all investigators, however, have reported data in support of a relationship between religion and health. Simons and West,²² for instance, examined the buffering capacity of religiosity on stress-related illness and found no effect. Their study was hampered by a low response rate (56%) and the use of broad and somewhat crude measures of both religion and health. In the mental health arena, numerous studies have discovered an inverse relationship between religiosity and mental health, especially among college students.^{23,24}

Despite good data to support a high frequency of religious behaviors and high levels of conventional religious beliefs in samples of older Americans as a whole, there is little information on their prevalence among older medical patients or on the relationship between these religious factors and physical or mental health.

This study aims to 1) determine the frequency of religious behaviors, beliefs, attitudes, and experiences of older adults attending a family medicine geriatrics clinic,

and 2) examine the relationship between religion and several characteristics of physical and mental illness. Three null hypotheses were tested: 1) religious behaviors and commitment are not prevalent among elderly medical patients and 2) have little influence on their lives, and 3) there is no association between physical or mental health and levels of religious activity and intrinsic orientation.

METHODS

Questionnaires were distributed to all adults seen by physicians in the geriatric assessment clinic affiliated with the Southern Illinois University School of Medicine, between October 1985 and April 1986. Patients were drawn primarily out of the community in and surrounding Springfield, Illinois, a city of population 102,000. Approximately 5% of patients were seen at home or during acute hospitalization; the rest were evaluated as outpatients. Of the 150 different patients seen over the 7-month period, 14 were excluded because of severity of illness or cognitive impairment. The remaining 136 were asked to complete two questionnaires; one collected sociodemographic data, and the other was an 88-item instrument examining religious beliefs, activities, experience, knowledge, and intrinsic orientation (see below). A total of 106 patients completed both questionnaires, yielding a response rate of 78%. Of the remaining 30, 19 completed the first, but not the second. Hence sociodemographic information on 63% (19/30) of the nonresponders was available for analysis. Comparison of this group with the responders revealed no significant differences in terms of sex, morale, or perceived benefit from religion as a coping behavior; the nonresponders were somewhat sicker and older than responders, but the differences were not statistically significant.

Measurement of Religious Variables The religious variables in the 88-item questionnaire were extracted from four instruments others have used to capture various dimensions of religiosity.^{3,25-27} Characteristics examined were religious beliefs, religious rituals (church attendance, Bible reading, prayer, etc), religious experience, knowledge of the Bible, social support derived through the religious community (number of close friends in the same congregation), importance of prayer, use of religion to cope with stress, and intrinsic religiosity.²⁷ These items were measured with five or six point Likert-type scales. (Lack of space precludes detailed description of all items and scales; the description and questionnaire are available from the senior author upon request.)

For analysis of the relationship between religious and health variables, organizational religious activity (ORA), nonorganizational religious activity (NORA), and intrinsic religiosity (IR) were utilized. These three

indexes (combinations of variables) were chosen because they represent the two major orientations of religion:²⁸ 1) an *institutional orientation* concerning group-related behaviors such as church attendance and participation in other organizational types of religious activity; and 2) a *personal orientation* reflecting values, beliefs, and attitudes of the individual.

The ORA variable consisted of two items, frequency of church attendance (five response categories from "never" to "several times per week") and frequency of other group-related activities such as adult Sunday school, Bible study, and prayer group participation (similar response options). The NORA variable consisted of three private religious activities (private prayer, reading religious literature, and viewing religious TV or listening to religious radio programs). Private activities may be particularly important in later life when ill health or disability restrict access to community religious activities.^{5,29} The IR variable consisted of Hoge's 10-item Intrinsic Religiosity Scale,²⁷ which has its origin in the intrinsic-extrinsic perspective of religious commitment developed at Harvard by Gordon Allport.³⁰ Intrinsic religiosity characterizes the "truly" religious person. The intrinsically motivated individual is reported to internalize their religious creed wholeheartedly and as a result, religion takes a primary position in life, transcending other motivations. Such a person seeks to fully integrate their religious beliefs into daily life. On the other hand, the extrinsically oriented person uses religion to serve their personal needs for social gain and self-protection, thus reflecting a more superficial commitment to religious values. Hoge's IR scale was validated originally by "judgments" of ministers in the community²⁷ and by our recent application of a similar method.³¹

The religious measures used in this study reflect a conservative or traditional Judeo-Christian perspective. The rationale behind this approach is that over 90% of the older adults in America claim a Christian tradition.³

Measurement of Health Variables Overall health status was measured by subjective self-assessment and a multidimensional objective assessment. *Subjective health* was sought by asking to what extent (on a scale of 1 to 4) patients agreed with the statement, "My general state of health is excellent." *Objective health* was determined by a combination of three measures: 1) a global physician assessment following a comprehensive medical examination (four categories ranging from very ill to very healthy); 2) review of the patient's medical chart (similar categories); and 3) number of prescription and nonprescription medications taken regularly (four categories). Physicians performing the assessment and chart review were blinded to patients' questionnaire responses. The overall objective health score was obtained by combining scores from each of the three measures; scores could range from 3 to 12, in order of increasing

objective health. Cronbach's alpha for the three items comprising this measure was high (0.74). There was also a moderately strong correlation ($r = 0.49$) between the objective and subjective ratings.

Illness behaviors such as smoking and alcohol consumption were measured in a quantitative fashion; however, for analysis purposes responses were dichotomized into smokers or nonsmokers and drinkers or nondrinkers. *Physical illnesses* examined were hypertension, cancer, and dementia. Chronic anxiety, depression, and a history of major psychiatric illness were the *mental health variables* measured. Hypertension was defined as two or more recorded blood pressures of 160/90 mmHg or greater, or currently receiving antihypertensive treatment. Cancer patients were those diagnosed as having a malignancy currently or within the past 10 years. The presence of organic brain syndrome, chronic anxiety, or depression was determined by review of the patient's medical record; it required written documentation by the physician of these conditions within the past 6 months. History of psychiatric illness was based on hospitalization in the past 2 years with a psychiatric diagnosis.

We fully recognize the limitations of utilizing these crude measures of overall health and of the more specific medical and psychiatric illnesses examined here. However, we believe this approach is adequate for this exploratory research.

Statistical Methods In analysis of the data, statistical significance was assessed with the Wilcoxon Rank Sum (or Mann-Whitney U) test, a nonparametric measure commonly used for ordinal or categorical data analysis, particularly when dealing with small sample sizes. Because of the exploratory nature of this study, a $P < 0.10$ was considered an acceptable level of statistical significance. Nonsignificant findings that were consistently in a particular direction also are noted, for they suggest the possibility of relationships that may prove important in subsequent studies with larger samples.

RESULTS

Characteristics of the Sample Sociodemographic and health characteristics of the sample are given in Table 1. In comparison to the general U.S. population aged 65 years and over,³² the study group was biased toward widowed caucasian women of moderately advanced age who live alone, possess above average education, and are financially secure. Both subjective and objective health were fair to moderate for the majority (70%) of the sample. The prevalence of specific medical and psychiatric illnesses, such as hypertension (37%) and depression (24%), is comparable to those reported in other community-based geriatric assessment clinics.^{33,34} The lower prevalence of dementia (8.5%) reflects exclusion of patients with severe dementia from the study group.

TABLE 1. SOCIODEMOGRAPHIC AND HEALTH CHARACTERISTICS OF THE SAMPLE (N = 106)*

Sex		Subjective Health	
Male	27.6% (40%)†	1 (poor)	13.2%
Female	72.4%	2	34.9%
Age		3	32.1%
Mean	74.4 yr (73 yr)	4 (excellent)	12.3%
SD	7.5 yr	Objective Health	
Range	56–94 yr	Physical Examination	
Race		1 (poor)	8.5%
Black	7.8% (8.6%)	2	32.1%
White	92.2%	3	38.7%
Financial Status		4 (excellent)	20.8%
(living expenses/month)		Chart Review	
Less than \$500	45.5% (68%)	1 (poor)	12.3%
\$500 to \$1000	42.4% (23%)	2	32.1%
More than \$1000	12.1% (9%)	3	38.7%
Living Situation		4 (excellent)	26.4%
Alone	52.8% (31%)	No. of Medications	
With spouse	34.0%	1 (5 or more)	12.3%
With others	13.2%	2 (3–4)	21.7%
Marital Status		3 (1–2)	43.4%
Married	35.2% (55%)	4 (none)	22.6%
Single	9.5%	Hypertension	36.8%
Divorced/Separated	8.6%	Cancer	7.5%
Widowed	46.7% (36%)	Dementia	8.5%
Education		Chronic Anxiety	14.4%
8 yr or less	17.0% (41%)	Depressive Symptoms	24.1%
8 to 12 yr	46.4% (39%)	Major Psychiatric Illness	4.8%
More than 12 yr	35.4% (16%)		
Cigarette Use			
None	81.2%		
Less than ½ ppd	8.9%		
½–1½ ppd	9.9%		
More than 1½ ppd	0.0%		
Alcohol Use			
None	69.6%		
1–7 drinks/wk	13.7%		
8–15 drinks/wk	5.9%		
More than 15/wk	10.8%		

* The percentage base for specific items varies from 98 to 106.

† Comparison figures for the U.S. population 65 years and older as of 1979–80³² in parentheses.

A comparison of the sample's "religious profile" with that of the U.S. population 65 years and over,^{3,35,36} indicates no major differences in characteristics for which data are available, despite the age, sex, and socioeconomic differences (Table 2).

A majority were Protestants who reported highly orthodox Christian beliefs. Frequency of church attendance was high, over 50% reporting at least weekly attendance. Slightly more than one fourth (27%) participated in weekly adult Sunday school, prayer, or Bible study groups. Private devotional activities like prayer and reading religious literature (Bible, etc) were reported with daily rates of 72% for praying and 28% for reading. Religious radio and television were less popular, with only 7% engaging in such activity on a

daily basis; however, 38% of the sample did report watching or listening to such programs at least one or more times per month. Many older patients found close friendships in their church congregations, and over half reported that at least four of their five closest friends came from this source.

Prayer was both frequent and salient to a large majority of patients (Table 3). Two thirds (65%) strongly and 17% moderately agreed that prayer was important in their lives. Nearly 60% strongly disagreed and another 14% moderately disagreed that "While dealing with difficult times in my life, I *don't* get much personal strength and support from God."

A majority reported having experienced a positive effect from religion. Over half (55%) strongly disagreed

TABLE 2. RELIGIOUS CHARACTERISTICS OF THE SAMPLE (N = 106)* WITH COMPARISONS TO THE U.S. POPULATION 65 YEARS AND OVER ON AVAILABLE DATA^{3,33,34}

Characteristic	Sample (%)	General Population (%)
Religious Denomination		
Protestant	58.5	66
Catholic	31.1	24
Jewish	1.9	3
None	4.9	4
Orthodox Christian Beliefs		
Belief in a personal God	90.5	—
Belief in Jesus as divine	83.9	93
Belief in miracles (literally)	75.7	—
Belief in the Devil	75.7	—
Church Attendance		
Once a week or more	54.4	49
Several times a month	5.9	—
Other Religious Community Activity		
Once a week or more	27.0	21
Several times a month	6.0	—
Private Prayer		
Once a day or more	71.5	—
Religious Programs (TV/radio)		
Daily	6.8	—
Several times a month or more	37.9	53
Read Bible or Other Religious Literature		
Once a day or more	28.0	—
Several times a week	15.0	—
Number of Patient's Five Closest Friends		
Who Are Members of Same Church		
Congregation (N = 92)		
Four or five	52.2	—
Two or three	22.9	—
One or none	25.0	—
Recognition of Old Testament Prophets		
(religious knowledge) (N = 74)		
No errors on 3 of 6 names	33.8	—

* Where N varies by 10% (of 106) or more due to missing data, N is given in parentheses.

and 14% moderately disagreed with the statement, "I do not experience God's intervention in my life in any concrete or personal way," and 70% strongly and 17% moderately agreed that they personally experience God's love and care. Sixty-two percent claimed strongly that their relationship with God helped to prevent loneliness, while 19% were in moderate agreement with them. Nearly three quarters (73%) strongly agreed and another 12% moderately agreed that "I feel *most fulfilled* when in close communion with God." To the statement, "My religious faith is the *most important* influence in my life," over half (55%) responded completely true and 27% mostly true. Finally, two thirds (66%) definitely agreed to and another 20% tended to agree to the statement, "One should seek God's guidance when making every important decision." Responses to the items in the IR scale (Table 4) were similarly one-sided, underscoring the depth of patients' commitment to their religious beliefs.

Associations Between Religious and Health Variables There was generally an inverse relationship between the health indicators and the religious activities and attitudes (Table 5). This is particularly true with nonorganizational types of religious activity, such as private prayer, Bible reading, and observing religious TV and radio programs. There also was a tendency for respondents with lower health scores to score higher on intrinsic religiosity. The private devotional and ideological aspects of religion, then, were particularly salient for elderly patients in poor health.

Patients with a recent history of cancer showed consistently lower levels of religious community activity, private devotional activities, and, to a lesser extent, intrinsic religiosity. No such associations were evident for hypertension. Individuals with mild to moderate dementia tended to score higher than the nondemented on religious indicators; however, due to the relatively small numbers involved, the difference failed to reach statisti-

TABLE 3. RESPONSES OF PATIENTS TO QUESTIONNAIRE ITEMS CONCERNING SALIENCE OF RELIGION AND ITS PERCEIVED ROLE IN COPING*

	Strong/Moderate Agreement (%)	Slight Agreement or Disagreement (%)	Strong/Moderate Disagreement (%)
Rely very little on religious beliefs when dealing with stress and difficulties†	27.3	—	72.7
Prayer not helpful in coping with stress and difficult times	19.0	12.0	69.0
Prayer important in my life	82.1	7.9	9.9
God not a source of strength and support during difficult times	14.6	11.5	74.0
Do not experience God's intervention in personal life (N = 91)	18.7	12.1	69.2
Experience God's love and care	87.7	5.1	7.1
Relationship with God helps prevent loneliness	80.5	10.3	9.3
Feel most fulfilled when in close communion with God (N = 92)	84.8	5.4	9.8
Religious faith is the most important influence in my life‡	82.1	—	17.9

* The original response options for all items (except those noted below) were strongly agree, moderately agree, slightly agree, slightly disagree, moderately disagree, and strongly disagree; these responses were trichotomized to yield the percentages presented here. Where N varies by 10% (of 106) or more due to missing data, N is given in parentheses.

† The response options for this item were strongly agree, agree, disagree, or strongly disagree; these were dichotomized for the purposes of this table.

‡ Response options for this item were completely true, mostly true, mostly untrue, completely untrue; these were dichotomized to yield the percentages here.

TABLE 4. PATIENTS' RESPONSES TO ITEMS COMPRISING THE INTRINSIC RELIGIOSITY SCALE*

	Definitely True or Tends to Be So (%)	Unsure (%)	Definitely Untrue or Tends to Be So (%)
My faith involves all of my life	74.5	6.1	19.4
In my life I experience the presence of the Divine (that is, of God)	76.6	10.6	12.8
Although I am a religious person, I refuse to let religious considerations influence my everyday affairs (N = 91)	41.7	7.7	52.7
Nothing is as important to me as serving God as best as I know how	81.0	7.4	11.6
My faith sometimes restricts my actions (N = 91)	69.3	4.4	26.4
My religious beliefs are what really lie behind my whole approach to life	79.0	3.2	17.9
I try hard to carry my religion over into all my other dealings in life (N = 93)	79.6	2.2	18.3
One should seek God's guidance when making every important decision	85.4	4.2	10.5
Although I believe in religion, I feel there are many more important things in life	27.4	4.2	68.4
It doesn't matter so much what I believe as long as I lead a moral life	48.4	3.1	48.4

* Hoge's 10-item scale²⁷ designed to measure religious commitment (see text); each item is scored on a scale of 1 to 5, with a maximum score of 50. The original five response options for each item were trichotomized to yield the percentages presented in this table. Where N varies by 10% (of 106) or more due to missing data, N is given in parentheses.

TABLE 5. COMPARISON OF RELIGIOUS BEHAVIORS AND ATTITUDES WITH HEALTH CHARACTERISTICS FOR ELDERLY MEDICAL PATIENTS (WILCOXON RANK SUM TEST)

Health Characteristic	Organizational Religious Activity			Religious Behaviors and Attitudes Nonorganizational Religious Activity			Intrinsic Religiosity		
	N	Mean Rank	Z	N	Mean Rank	Z	N	Mean Rank	Z
Physical Health									
1,2 (poor)	44	42.6		46	48.5		42	46.8	
3,4 (excellent)	46	48.3	1.05	46	44.5	0.72	45	41.4	1.01
Objective Health									
3–8 (poor)	50	49.6		51	54.4		46	47.5	
9–12 (excellent)	47	48.4	0.21	46	43.0	2.01†	46	45.5	0.38
Cancer									
Present	8	29.1		8	33.3		7	40.7	
Absent	88	50.3	2.09†	88	49.9	1.63*	84	46.4	0.55
Hypertension									
Present	36	47.3		36	49.4		34	43.3	
Absent	60	49.2	0.33	60	48.0	0.24	57	47.6	0.44
Dementia									
Present	7	62.5		7	67.4		7	63.5	
Absent	90	48.0	1.34	91	48.1	1.74	86	45.7	1.68
Mental Health									
Chronic Anxiety									
Present	12	40.3		14	42.8		11	41.6	
Absent	83	49.1	1.05	82	49.5	0.83	81	47.2	0.66
Depressive Symptoms									
Present	24	41.0		24	47.8		21	41.5	
Absent	71	50.4	1.47	72	50.5	—	71	48.0	0.98
Health Behaviors									
Smoking (any amount)									
Present	19	36.7		16	36.3		17	36.8	
Absent	73	49.1	1.83*	77	49.2	1.76*	72	46.9	1.46
Alcohol (≥1 drk/wk)									
Present	29	35.2		31	32.0		26	35.8	
Absent	64	52.4	2.89‡	63	55.2	3.91‡	64	49.4	2.25*

* $P \leq 0.10$, † $P \leq 0.05$, ‡ $P \leq 0.01$ (2-tailed P corrected for ties).

In reading this table, higher mean rank indicates higher levels of religious activity or intrinsic religiosity.

cal significance. Most demented patients were incapable of completing questionnaires and required the assistance of a first degree relative or caregiver. What effect this may have had on responses is unclear.

Consistent, although nonsignificant, trends emerged between religion and mental health variables (Table 6). Patients with either chronic anxiety or depressive symptoms reported lower levels of both organizational and nonorganizational religious activity, as well as intrinsic religiosity. Again, the differences were quite small.

Religious differences were most marked in the health behavior arena. Persons who smoked or used alcohol were significantly less likely to engage in religious community activity and private devotional behaviors, and more likely to score lower on intrinsic religious orientation.

Sex Differences Relationships between health and religious variables varied depending on sex (Table 6). For

subjective health, opposite patterns emerged with regard to organized religious activity. Women who perceived their health as moderately good or excellent were significantly more likely to report high levels of church activity. Among men lower levels of both subjective and objective health were associated with higher levels of organized religious activity. Neither subjective nor objective health status was related to frequency of private devotional activities and intrinsic religiosity among women. On the other hand, men with lower self-rated or objective health scores showed consistently higher involvement in private devotional activity and higher scores on intrinsic religiosity. Although none of the latter differences reached statistical significance, their consistency is notable.

Among male cancer patients, both organizational and nonorganizational religious activity was lower than for men without cancer. The small number and consequent failure of the observed differences to reach statistical

TABLE 6. COMPARISON OF RELIGIOUS BEHAVIORS AND ATTITUDES WITH HEALTH CHARACTERISTICS FOR ELDERLY MEDICAL PATIENTS DICHOTOMIZED BY SEX (WILCOXON RANK SUM TEST)

Health Characteristic	Organizational Religious Activity						Religious Behaviors and Attitudes Nonorganizational Religious Activity						Intrinsic Religiosity					
	Men			Women			Men			Women			Men			Women		
	N	Mean Rank	Z	N	Mean Rank	Z	N	Mean Rank	Z	N	Mean Rank	Z	N	Mean Rank	Z	N	Mean Rank	Z
Physical Health																		
Subjective health																		
1, 2 (poor)	12	16.5		31	26.5		12	15.0		33	32.3		11	16.2		30	30.0	
3, 4 (excellent)	16	13.0	1.12	30	35.6	2.03†	16	14.2	0.26	30	31.7	0.12	15	11.5	1.53	30	31.0	0.23
Objective health																		
3-8 (poor)	11	18.4		38	31.6		11	17.0		39	32.1		10	16.6		35	35.3	
9-12 (excellent)	18	12.9	1.74*	29	37.1	1.11	18	13.8	0.99	28	35.4	0.69	17	12.5	1.28	29	30.2	1.10
Cancer																		
Present	4	10.0		4	20.8		4	12.6		4	23.1		3	15.3		4	25.4	
Absent	25	15.8	1.30	62	34.3	1.39	25	15.4	0.56	62	34.2	1.12	24	13.8	0.80	59	32.5	0.75
Hypertension																		
Present	9	13.2		27	33.4		9	12.4		27	35.5		8	9.9		26	31.8	
Absent	20	15.8	0.80	39	33.6	0.03	20	16.2	1.11	39	32.1	0.70	19	15.7	1.75*	37	32.1	0.07
Dementia																		
Present	2	20.3		5	41.5		2	28.5		5	35.8		2	23.3		5	39.5	
Absent	27	14.6	0.93	62	33.4	0.91	27	14.0	2.39†	63	34.4	0.15	25	13.3	1.70*	60	32.5	0.80
Mental Health																		
Chronic Anxiety																		
Present	3	16.2		9	25.2		3	20.5		11	24.6		3	13.1		8	19.6	
Absent	26	14.9	0.26	56	34.3	1.35	26	14.4	1.21	56	35.3	1.70*	24	21.3	1.70*	56	34.4	2.11†
Depressive Symptoms																		
Present	3	12.2		21	27.4		3	14.3		21	30.4		3	13.2		18	24.2	
Absent	26	15.3	0.63	44	35.7	1.68*	26	20.8	1.29	45	35.0	0.91	24	20.7	1.54	46	35.8	2.24†
Health Behaviors																		
Smoking (any amount)																		
Present	7	13.3		12	23.7		7	11.1		9	26.4		7	9.6		10	29.9	
Absent	20	14.3	0.28	52	34.5	1.85*	20	15.0	1.16	56	34.1	1.14	18	14.3	1.42	53	32.4	0.40
Alcohol (≥ 1 drink/wk)																		
Present	17	13.9		12	20.4		17	11.2		14	25.1		15	10.5		11	29.6	
Absent	11	15.5	0.53	52	35.3	2.53†	11	19.6	2.71†	52	35.2	1.77*	11	17.6	2.34†	52	32.5	0.49

* $P \leq 0.10$, † $P \leq 0.05$, ‡ $P \leq 0.01$ (2-tailed P corrected for ties).

In reading this table, higher mean rank indicates higher levels of religious activity or intrinsic religiosity.

significance make conclusions from this data very tenuous. However, a similar but stronger trend is also noted among women. Again, the inverse relationship between religious activity and cancer is consistent and statistically significant for the men and women as a whole (Table 5).

Regardless of sex, little difference in religious activities and attitudes was observed between patients with and without hypertension. The single exception is that men with hypertension scored significantly lower on intrinsic religiosity than those without hypertension.

Among dementia patients there were consistently higher scores on religious behaviors and attitudes for both sexes, but there were only two men and five women with dementia, so this finding must be sharply qualified as merely suggestive of a possible relationship.

In the area of mental health, religious behaviors and attitudes were significantly lower among elderly women patients with *depressive symptoms* than among

those without such symptoms. A similar, although non-significant, trend was observed among men. Women patients with *chronic anxiety* also reported significantly lower levels of both private devotional activity and intrinsic religiosity and a tendency to be less involved in organized religious community activity. Similar trends emerged among men with chronic anxiety, except that religious community activity was slightly higher.

Finally, significantly lower levels of church attendance and participation in other religious group activities were noted among women who smoked or consumed moderate to large quantities of alcohol. Among the men, there was a consistent tendency in the same direction, but the only trends reaching statistical significance were between alcohol use and the frequency of private devotional activity (NORA) and intrinsic religiosity.

Hence, religious behaviors and attitudes of older medical patients are consistently higher among individuals with good mental health (except dementia) and

fewer adverse health behaviors. These findings are particularly striking for women, but there were an insufficient number of men in each diagnostic category to make fair comparison. Sex differences seem less pronounced in the relationship between religious variables and physical health parameters.

DISCUSSION

This study reveals that Christian religious beliefs, activities, and attitudes are highly prevalent among older patients of a geriatric assessment clinic in central Illinois. Differences in levels of intrinsic religiosity and both organizational and nonorganizational religious activity were discovered between the patients with and those without mental disorders, physical disorders, and adverse health-related behaviors.

Prevalence and Impact of Religion The impact that these elderly patients claimed religion had on their lives was remarkable. The majority were frequent church attenders, found most of their close personal friends in their religious community, and engaged in private prayer at least daily. A significant proportion also read religious literature on a daily basis, often tuned into religious TV and radio programs, and were involved in Bible study or prayer groups during the week. The salience of religion as a cultural influence on their world view and their lives in general is underscored by the finding that a majority strongly claimed religion to be the most important influence in their lives and used religious beliefs for guidance when making important decisions.

Religion and Mental Health Limited evidence supports a role for religion as a buffer against psychiatric illnesses in later life. Wolff³⁷ studied the effects of religious belief on a group of elderly psychiatric patients over a 3-year period and concluded that such beliefs helped them to overcome loneliness and despondency. Numerous investigators have found "loneliness" to be closely associated with depression and suicide.^{38,39} In a national Harris survey, loneliness ranked fourth among twelve serious problems for older adults.⁴⁰ Almost two thirds of our respondents reported that their relationship with God was an important factor helping them to deal with loneliness, and three fourths indicated that they felt most fulfilled when in close communion with God.

Patients with either chronic anxiety or depressive symptoms in this study were less involved in religious activity and had lower scores on intrinsic religiosity. In a recent epidemiologic survey, Goldberg et al⁴¹ similarly found a significantly lower number of depressive symptoms among women aged 65 to 75 years who had social networks of greater homogeneity in terms of age, sex, and religion; church groups were particularly important in this regard. Why religion has a more powerful impact

on mental health among women than men is not clear. National surveys have repeatedly confirmed the greater frequency and importance of religious behaviors and beliefs among women.¹ Sociologists have attributed the gender differences to numerous psychological and social variables.^{42,43}

Several investigators have found correlations between religious group participation, commitment, and prayer and the relief of symptoms of depression and anxiety among conservative Christian groups.^{31,44,45} Although they did not limit their subjects to the elderly and provided little comment on sex differences, their findings strengthen the conclusion that there is a genuine link between religion and mental health.

In another approach to this subject, we questioned older patients concerning the extent to which religion provided them with emotional support and assistance in coping with difficult problems in life. Conventional wisdom suggests a strong relationship between maladaptation or failure to cope and depression or other emotional illness. The majority of our sample strongly agreed that their religious beliefs and practices enabled them to cope more successfully with tension and provided strength and support when dealing with difficult problems. From their perspective, religion represents a positive force and a resource upon which to draw during troublesome experiences.

Social Support A considerable proportion (52%) of older patients claimed that four or five of their five closest friends were members of their church congregation. This underscores the powerful source of social support that religious congregations provide. Social support buffers the harmful effects of stressful life changes on health in younger populations.⁴⁶ Berkman and Syme⁴⁷ found the age-adjusted relative risk of mortality for disabled persons with low social network indexes was 3.5 times that of similar individuals with high levels of social support. Krauss⁴⁸ has demonstrated that social support may reduce the negative impact on subjective well-being of such stressors as bereavement, crime, and social network crises. In fact, both cross-sectional and prospective cohort studies have confirmed its direct benefits on overall mental health, particularly in reducing the incidence of depressive symptoms.^{41,49,50} The positive consequences of social support are especially strong for women. Frequent religious service attendance significantly increases the availability of informal support;⁵¹ some studies among older adults have found involvement in religious organizations to be more highly correlated with mental health indicators like life satisfaction than involvement in nonreligious organizations.^{52,53} Religious organizations may influence good mental health through the mechanism of social support alone.

In summary, our evidence supports the literature that suggests that there is a high level of religious beliefs and

practices among older adults, that these have a positive influence on mental health, and that religion has a potentially powerful impact on health care attitudes and behaviors in late life.

Religion and Physical Health Among patients who either perceived their health as poorer or were objectively rated as being in worse health, private devotional activity and intrinsic religiosity tended to be *higher*. On the other hand, organized religious community activity was more frequent among persons with better subjective and objective health. Jeffers and Nichols,⁵⁴ examining the relationship of attitudes to well-being in the first Duke Longitudinal Study of Aging, have similarly reported that religion was especially important for disabled older adults. These findings suggest that sicker and feebler patients, although less involved in organized religious activity, rely more on private devotional activity to express their religiosity. This explanation is supported by the research of Mindel and Vaughan²⁹ and of the second Duke Longitudinal Study of Aging⁵, which found that, although church attendance declines with advancing age and disability, private devotional activities and religious attitudes remain relatively stable.

The significantly higher levels of religious community activity among women who report better subjective health deserves attention. Subjective health is closely associated with mortality rates in older populations⁴⁰ and thus an important health variable. Several investigators have shown that church attendance is positively correlated with subjective health, fewer physical symptoms, and lower mortality rates.^{13,14,47,55,56} The precise implications of such findings are not clear and have stirred much controversy. Levin and Markides⁵⁷ recently found that when controlled for "physical capacity," the correlation between subjective health and church attendance dropped to a nonsignificant level. They concluded that religious attendance may be an indicator of physical capacity to be active or get to church, rather than a moderator of the disease process. One might similarly speculate that the association between church attendance and lower mortality rates may be confounded by functional capacity and disability. Before definitive statements can be made in this regard the findings of Levin and Markides need to be replicated in longitudinal studies utilizing standardized measures of functional disability and employing outcomes that include mortality rates and frequency of physical symptoms, as well as subjective health.

Several investigators have attributed the association between church attendance and health to the church's function as a social network for members.⁴⁷ Cohen and colleagues⁵⁸ have recently shown in a longitudinal study of 133 elderly New York City residents that social networks, through providing social support, exert a direct effect on reducing physical symptoms. Church-re-

lated social networks might also provide a ready avenue for dissemination of information about health care resources and facilitate access to those resources.

Additional benefits derived from the "religious nature" of such institutions have also been proposed. Zuckerman et al¹² investigated the effect of religiousness on mortality rates of 400 elderly residents of New Haven, Connecticut, measuring religiousness by frequency of church attendance, self-assessed religiosity, and extent to which religion was a source of strength. Although all variables were significantly associated with lower mortality rates (especially among the elderly in poorer health), "strength from religion" was the best predictor, making it unlikely that the benefits of religiousness were predominantly due to the social contacts associated with church attendance. Although we did not address mortality rates, we found few significant relationships between intrinsic religiosity and general health indicators in our study. In summary, then, it is not clear what social or religious factors are operative in the relationship between church attendance and health, nor the extent to which physical disability confounds the relationship.

Religion and Specific Physical Illnesses Are religious behaviors and attitudes associated with specific disease states? The results from our study were mixed. Cancer patients exhibited significantly lower levels of religious behaviors, those with hypertension showed little difference, and patients with dementia had higher religious activity and commitment scores.

Cancer Although the number of cancer patients in the sample was small ($n = 8$), their levels of both community oriented and private devotional religious activities were significantly lower. For intrinsic religiosity, a similar weak trend did not reach statistical significance. Sex had little effect on these relationships. Several epidemiologic studies have reported lower rates of cancer among such religious groups as Mormons^{59,60} and various Christian groups.⁶¹ These findings have been attributed primarily to diet and other health-related behaviors (lower rates of smoking, alcohol use, etc). Likewise, we found significantly lower religious activity and commitment scores among patients who smoked or consumed moderate to large quantities of alcohol.

Although dietary habits provide one explanation for lower cancer rates among religiously oriented adults, an alternative explanation introduces psychosocial factors as important interacting variables. Greer⁶² and Grossarth-Maticek⁶³ provide comprehensive reviews on the role of psychosocial factors in cancer etiology. Whether through dietary or psychological mechanisms, lower cancer rates among more religiously involved individuals is a consistent finding in the literature.

One possible explanation for our finding of lower

religious activity among cancer patients is that the disability conferred by the disease restricted access to church attendance and other group-related religious behaviors. Our finding of lower levels of private devotional activity and intrinsic religiosity in this group, however, is less easily explained by that hypothesis. The possibility of chance variation in such a small sample must also be entertained.

Hypertension In general, no consistent difference in either religious activity or intrinsic religiosity was found between normotensive and hypertensive patients. Hypertensive men, however, did report consistently lower levels of religious community activity, private devotional activity, and intrinsic religiosity than the normotensive men. The differences were small, reaching statistical significance only for intrinsic religiosity scores. This pattern of lower blood pressure among more religiously involved men also has been reported by others. Graham et al,¹⁷ studying 355 white men free of diagnosable coronary heart disease, found significantly lower systolic and diastolic mean blood pressures among those attending church at least once a week than among those attending less frequently. This relationship remained significant after controlling for age, obesity, cigarette smoking, and socioeconomic status. Others, studying both sexes, have also reported an inverse relationship between blood pressure and level of religious involvement.^{15,16} Kaplan's literature review of the relationship between religious activity and coronary artery disease speculates that religion's protective effect may be mediated by religious social mechanisms that 1) maintain hope, 2) regulate depression, fear, and anxiety, and 3) provide protection through social—personal integration.¹⁹

Dementia In contrast to older patients with cancer and hypertension, those with mild to moderate dementia consistently reported higher levels of religious activity and intrinsic religiosity. Although the group is too small to test statistical significance, the differences persisted among both sexes and were evident for both organized and nonorganized religious activity and for intrinsic religiosity.

Why religiosity should be higher among patients in early stages of dementia is unclear. We know of no studies that have addressed this issue, and conclusions drawn from the small number of demented patients in this sample ($n = 7$) remain tenuous at best. Religiosity somehow may be causally related to dementia, or symptoms of dementia may contribute to greater religiosity. Recognition of failing cognitive capacity by persons in the early stages of disease often results in significant psychological stress and represents a major adaptive challenge. One might speculate that religion is utilized to help cope with their distress. Unfortunately, the cross-sectional design of our study precludes infer-

ences concerning which of the above mechanisms is more likely.

Methodologic Considerations The cross-sectional nature of the data makes it impossible to determine the direction of causality in the observed relationships between religious and health variables. In some cases, the number of patients in specific disease categories was too small ($n < 10$) to meet the underlying assumptions of the Mann–Whitney U test, but the analyses were included to indicate differences that are consistently in one direction, suggesting the possibility of a causal relationship and underscoring the need for research employing large sample sizes. The reader should also bear in mind that multiple significance testing may have contributed to some of the significant associations obtained here.

The effect of geographic location on the prevalence rates of religious activities and attitudes is difficult to estimate, and generalization of these results to geriatric patients in other localities should be done with caution. However, the mid-Illinois area is not especially known as a center of religious activity, and it is not generally included in the "Bible Belt" region of the United States. Replication of this study in other areas of the country, notably the West and Northeast would be helpful in defining the extent to which the findings of this study may be generalized. The instrument used to measure religious variables may be obtained by contacting the senior author.

CONCLUSIONS

This study has demonstrated that religious beliefs, activities, and attitudes represent powerful forces in the lives of older medical patients and are related to both mental and physical health. On the basis of the high frequency and self-rated importance of such activities and attitudes, we must reject the null hypotheses that religious behaviors and commitment are not prevalent among elderly medical patients and have little influence on their lives. The third null hypothesis, that there is no association between physical or mental health and levels of religious activity and commitment, also must be rejected. The evidence is particularly strong among women with regard to mental health parameters.

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