Spiritual and Religious Beliefs and Practices of Family Physicians
A National Survey

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BACKGROUND. The current movement in American medicine toward patient-centered or relationship-centered care highlights the importance of assessing physician core beliefs and personal philosophies. Religious and spiritual beliefs are often entwined within this domain. The purpose of this study was to identify the personal religious and spiritual beliefs and practices of family physicians and to test a valid and reliable measure of religiosity that would be useful in physician populations.

METHODS. An anonymous survey was mailed to a random sample of active members of the American Academy of Family Physicians who had the self-designated professional activity of direct patient care. Physicians reported their religious and spiritual beliefs and practices, including frequency of religious service attendance and private prayer or spiritual practice, and self-reported intrinsic or subjective religiosity.

RESULTS. Seventy-four percent of the surveyed physicians reported at least weekly or monthly service attendance, and 79% reported a strong religious or spiritual orientation. A small percentage (4.5%) of physicians stated they do not believe in God. A 3-dimensional religiosity scale that assessed organized religious activity, nonorganized religious activity, and intrinsic religiosity was determined to be a valid and reliable measure (α = .87) of physician religious and spiritual beliefs and practices.

CONCLUSIONS. Family physicians report religious and spiritual beliefs and practices at rates that are comparable with the general population.

KEY WORDS. Religion and medicine; family practice; characteristics. *(J Fam Pract 1999; 48:98-104)*

Several decades of research have produced overwhelming evidence that a person's beliefs, values, and attitudes influence his or her susceptibility to disease, decision to seek treatment, treatment compliance, and, ultimately, satisfaction and recovery.[1] The influence of religious and spiritual beliefs in medical settings is particularly salient in the United States, since longitudinal survey data reveal that religion and spirituality continue to be major and consistent factors in the lives of most Americans.[2,3] Religious and spiritual beliefs wield significant influence on how patients view health care issues,[4,5] and some beliefs may have a direct effect on clinical outcomes.[6]

In physician populations, religious and spiritual beliefs directly affect behavior and attitudes that have an impact on patient care. One study from the United Kingdom[7] found that psychiatrists who attend religious services are more likely to encourage patients to seek religious help and to refer patients to religious leaders than those who did not attend such services. This correlates with recent results from a national survey of American family physicians.[8] The growing research on physician-assisted suicide and euthanasia in the United States also supports the link between religious and spiritual beliefs and physician attitudes. Oncologists with no religious affiliation are more likely to have favorable attitudes toward physician-assisted suicide and active euthanasia than Catholic or Protestant physicians.[9] Religious and spiritual factors may directly influence behavior as well. For example, physicians with no religious affiliation are associated with administering a lethal injection in an end-of-life care setting.[10]

The current movement in American medicine toward patient-centered[11] or relationship-centered[12] care further underscores the importance of exploring physicians' religious and spiritual beliefs. Core beliefs and personal philosophy help to calibrate the requisites of physicians' self-awareness within the physician-patient relationship.[13] A knowledge of self, skills that promote contemplation and reflection, and the values of self-care, self-awareness, and self-growth are cornerstone areas[11] in this domain and are often entwined with religious and spiritual beliefs.

Despite the importance of these findings, few studies have examined physician religious beliefs and practices or have used a valid and reliable measure of religiosity.

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One university medical center survey found that physicians had lower reported rates of belief in a Higher Power, church attendance, and use of religious beliefs as a coping strategy when compared with patients, patients' families, and nurses.[14] Another survey of family physicians and patients[15] had similar findings, with physicians having significantly lower rates of religiosity (belief in God, prayer, feeling close to God) than patients. In addition to documenting the gap in reported religious beliefs between physicians and patients, the lack of a uniform measure of religiosity in these studies highlights the need for development and standardization of this variable.

To address these issues, we performed a post-hoc analysis of our nationwide physician survey study of the prevalence and patterns of patient referral to clergy and pastoral care providers.[8] The survey included questions for measuring physician religious beliefs and practices, because physician religiosity had been found to be positively correlated with a tendency to refer to clergy.[14] Our objectives in this analysis were to identify the personal religious and spiritual beliefs and practices of family physicians and to test a valid and reliable measure of religiosity that would be useful in physician populations.

METHODS

Study Population

Prior to its initiation, the nationwide physician survey study was reviewed and approved by the Human Subjects Committee of the University of Kansas Medical Center. Study subjects were selected from the membership list of the American Academy of Family Physicians (AAFP). We included physicians who were active members of the AAFP (N = 44,194), and whose self-designated professional activity was direct patient care. The requirements for active AAFP membership include family practice residency training, unrestricted licensure, specified continuing medical education, and engagement in the practice, teaching, or administration of family practice or in the practice of emergency medicine.[16] Using these criteria, a random sample of 756 physicians was obtained.

Survey Methods

A self-administered, anonymous questionnaire was mailed to all eligible physicians during October 1997. A pre-addressed stamped return envelope and a cover letter from the senior investigator explaining the nature of the survey, our affiliation with the University of Kansas Medical Center, and an invitation to participate were enclosed with each questionnaire. Approximately 2 weeks after the initial mailing, all subjects were sent a post card reminder. Data collection was completed in December 1997.

Questionnaire Content

The questionnaire consisted of 11 fixed-item responses, 5 questions that gathered demographic information, and one open-ended question asking for comments. The survey was prefaced with the instruction, "Please circle the answer which most accurately describes your feelings and choices." Five questions measured physician religious beliefs and practices. These items were derived from questions developed by the National Opinion Research Center[17] and the Index of Core Spiritual Experiences scale,[18] and were preferentially selected according to a previously tested and validated 3-dimensional model of religiosity.[19] 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. To avoid compromising item integrity, and on the recommendations of an expert panel regarding operational definitions of religion and spirituality in health care settings,[20] we chose to use the terms religious and spiritual interchangeably for this study.

The final section of the survey gathered data on physician characteristics such as sex, age, length of practice, primary practice site, and religious denomination. Questions were pretested and revised after pilot testing with a group of eligible physicians at our institution. Physicians from the pilot group were excluded from the sample. The survey took less than 5 minutes to complete.

Data Analysis

After recoding and reverse-scoring the items as necessary, descriptive data for responses to the religiosity questions and physician characteristics were calculated. For questions with more than one answer option, each option was treated as a separate item. Returned surveys that were only partially completed were included in the data set, but individual items that were not completed were excluded from analysis.

Responses to the 5 religious belief and practice items were factor analyzed to determine whether our measure of religiosity should be treated as a single dimension or as the 3-dimensional construct suggested by Chatters and colleagues.[19] Cronbach's α was calculated as a measure of the internal reliability of the resulting measure. An analysis of variance (ANOVA) was conducted on the categories of age, length of practice, primary practice site, and self-reported religious denomination to compare religiosity across different demographic variables. A t test was performed using the sex data set. The dependent variable in each of these tests was the total score on the religiosity scale. A 2-sided P value of $<.05$ was considered statistically significant. For any significant ANOVA, a post-hoc mean comparison was conducted. All analyses were performed using Statistical Package for the Social Sciences 7.5 computer software (SPSS, Chicago, Ill, 1996).

TABLE 1

Characteristics of Study Physicians Compared with Complete AAFP Membership

Characteristic	Full-Respondent Physicians, %	Partial-Respondent Physicians, %	AAFP Member Physicians, %
Sex	N = 342	N = 55	N = 44,191
Male	78.7	81.8*	79.1
Age, years	N = 367	N = 67	N = 44,123
<30	1.4	0.0	1.1
30 to 40	34.9	20.9†	35.8
41to 55	47.1	56.7†	44.5
56 to 65	9.3	13.4†	11.9
>65	7.4	9.0	6.6
Primary practice site	N = 357	N = 63	N = 26,260
Urban	56.3†	57.1	68.4

Note: Full-respondent physician refers to those respondents who answered all of the items on religiosity, not necessarily all of the demographic items. Statistical percentage comparisons for full-respondent physicians are with the AAFP member physicians. Percentage comparisons for partial-respondent physicians are with the full-respondent physicians.
AAFP denotes American Academy of Family Physicians.
*P <.05.
†P <.001.

RESULTS

Response Rate

The response rate was 58% (438 of 756 physicians). Three hundred eighty-six completed surveys were returned after the first mailing; one was returned as undeliverable. To compare our sample with the AAFP membership, we split the study's physician category into 2 groups, those who completed the religiosity items (full-respondent physicians) and those who did not complete all of those items (partial-response physicians). There was no statistically significant difference in either sex or age distribution between the full-respondent physicians in our sample and the national AAFP membership; however, a greater percentage of study physicians designated a rural practice site compared with the total AAFP membership (P <.001). Table 1 compares the characteristics of the study physicians with the active membership of the AAFP.

Since the sample size was determined before the study began, we retrospectively conducted a power analysis to detect a correlation coefficient of 0.15 or greater, at 2-tailed α = 0.05. We determined our sample size of 438 to have slightly less than 90% power.[21]

Physician Religious Beliefs and Practices

Table 2 lists the frequency of responses and confidence intervals for the 5 survey questions about religious and spiritual beliefs and practices. Almost three fourths (74%) of the respondents reported attending religious or spiritual services at least weekly or monthly, while 10% reported no attendance. More than one third (35%) spend time in daily private religious or spiritual practices, and 49% of the physicians reported such activity at least monthly. A majority of the physicians (79%) reported a strong religious or spiritual orientation, and 77% acknowledged feeling at least somewhat close to God or a Higher Force. In addition, most physicians (65%) reported having at least one affective spiritual experience. A small percentage (4.5%) of respondents indicated that they do not believe in God.

Religiosity Scale

The 5 items used to measure religious and spiritual beliefs and practices were factor analyzed using principal axis, varimax rotation. A single factor, which accounted for 66% of the variance, emerged as the best explanation of the variance among items when analyzed by eigenvalue magnitude and visual inspection of the scree plot.[22] A scale consisting of the 5 items was analyzed for internal consistency. Cronbach's α for these items was .87, indicating good to high reliability.

Two instrument items provided information that would be expected to be associated with scores on a measure of religiosity. One demographic item (religious denomination) listed "none" as a response option. An additional fixed-item question allowed physicians to indicate that they did not believe in God. Conceptually, physicians who indicated no affiliation with any religious denomination or who do not believe in God would be expected to score lower on a scale of religiosity. Table 3 represents an analysis of religiosity scale scores for physicians with no reported religious denomination and those who do not believe in God, compared with all other physicians. In both cases, physicians had significantly (P <.001) lower religiosity scores, providing evidence of scale validity.

Differences in Level of Religious Belief

Table 4 reports physician characteristics and their levels of religious and spiritual belief and practices. Among demographic variables, only religious denomination and primary practice site demonstrated a significant difference in religiosity scores. Jewish physicians scored significantly lower than Protestant (P <.001) or Catholic (P = .003) physicians. In addition, physicians with urban primary

TABLE 2

Family Physicians' Responses to Religious Beliefs and Practices Items in Survey

Item	Family Physicians, %	95% CI
About how often do you attend religious or spiritual services? (N = 427)		
Daily	0.7	0.0, 1.5
Weekly	52.0	47.3, 56.7
Monthly	22.2	18.3, 26.1
Once a year	15.7	12.2, 19.2
Not at all	9.4	6.6, 12.2
About how often do you spend time in private religious or spiritual practices? (N = 426)		
Daily	34.7	30.2, 39.2
Weekly	35.2	30.7, 39.7
Monthly	13.8	10.5, 17.1
Once a year	9.2	6.5, 11.9
Not at all	7.0	4.6, 9.4
How strongly religious (or spiritually oriented) do you consider yourself to be? (N = 432)		
Not at all	6.3	4.0, 8.6
Not very strong	14.6	11.3, 17.9
Somewhat strong	36.6	32.1, 41.1
Strong	42.5	37.8, 47.2
How often have you felt as though you were very close to a powerful spiritual force that seemed to lift you outside yourself? (N = 392)		
Often	17.9	14.1, 21.7
Several times	27.0	22.6, 31.4
Once or twice	20.4	16.4, 24.4
Never	34.7	30.0, 39.4
How close do you feel to God (or a Higher Force)? (N = 424)		
Extremely close	35.1	30.6, 39.6
Somewhat close	42.7	38.0, 47.4
Not very close	17.7	14.7, 21.3
I don't believe in God	4.5	2.5, 6.5

CI denotes confidence interval.

TABLE 3

Validity Assessment of Religiosity Scale

Instrument Item	Standardized Religiosity Score, Mean*	SD	N	*t*	*P*
Religious denomination					
None	7.78	3.06	17	8.58	<.001
All other answers	15.50	3.64	336		
How close do you feel to God (or a Higher Force)?					
I don't believe in God	5.53	1.87	17	9.64	<.001
All other answers	12.38	2.90	353		

SD denotes standard deviation; N denotes total number of respondents.
*Mean scores are calculated with the comparison item removed.
Note: Not all of the items on the religious belief scale had an equal number of answer options. Consequently, some items weigh more heavily in a total raw score. To control for this, raw item scores were standardized and then summed to create a standardized total score. Standardized item scores have a mean of 3 and standard deviation of 1.

practice sites had lower scores (P = .042) than their suburban counterparts.

DISCUSSION

Identifying Religious and Spiritual Beliefs

The purpose of this study was to identify the personal religious and spiritual beliefs and practices of family physicians and to test a valid and reliable measure of physician religiosity. Our results suggest that the personal religious and spiritual beliefs and practices of family physicians are much stronger than previously reported. The study of Vermont family physicians by Maugans and Wadland[15] and a recent study by Oyama and Koeing[23] of family physicians in North Carolina and Texas are benchmarks of inquiry in this area. In the Maugans and Wadland survey, 5 belief items—the existence of God, God as a personal entity, prayer, the existence of an afterlife, and feeling close to God—were used to assess physician and patient religious beliefs. Based on the answers to these items, physicians were reported as being significantly less religious than patients.[15] One item that appeared both in our study and in the Vermont study (closeness to God) allows some comparison of physician beliefs. Seventy-seven percent of our respondents acknowledged feeling at least somewhat close to God or a Higher Force. Although the questions were worded differently, this percentage is much higher than the 43% of Vermont physicians who responded to this belief item, and is similar to the 74% of study patients who answered affirmatively. Eleven percent of the physicians in the Vermont study did not believe in God, and only 4.5% of our respondents reported this lack of belief. Regional differences may account for the discordance in reported religiosity in these 2 studies, since population-based survey data from the General Social Survey (GSS) demonstrate consistent regional variations in reported religiosity.[24]

Regional variations may also help reconcile the Vermont study with the findings of Oyama and Koenig. With the exception of frequency of daily prayer, Oyama and Koenig's recent study of physicians in North Carolina and Texas found

no significant differences between family physicians and patients in measures such as organizational religious activities (church attendance, other religious group activity), nonorganizational religious activities (Bible reading, religious media participation), and intrinsic religious attitudes.[23] Although the authors conclude that patients are more involved in religious beliefs and practices than physicians, their findings lose significance when age and sex are controlled.[23]

If the generalizability of these 2 regional studies to a more national population is suspect, does a gap still exist in reported religious and spiritual beliefs and practices between family physicians and patients? The survey item regarding feelings of closeness to God provides some illumination. Table 5 compares this item with 2 others that are matched in our survey and in the GSS developed by the National Opinion Research Center. Of the physicians in our survey, 4.5% report that they do not believe in God, compared with 1.4% of the general population who do not believe. However, the percentage of physicians who feel at least somewhat close to God or a Higher Force (77%) is comparable with that of most Americans (84%). If religiosity is viewed in terms of identified religious denomination and frequency of religious service attendance, family physicians appear to be more religious than their patients. The GSS and our survey data suggest that family physicians attend religious services more frequently and are more often affiliated with a specific religious denomination than the general population.

Measuring Physician Religiosity

The second purpose of our study was to devise a valid and reliable measure of physician religiosity. When tested by factor analysis and Cronbach's α, our measure was found to be a reliable and valid instrument in a physician population. Whether viewed as a single or multidimensional construct, the complexity of assessing the religiosity variable remains.[25] In physician populations, religiosity has been largely assessed by religious denomination.[9,10] Instrument design and psychometric scale analysis are rarely reported in these studies, which hampers interpretation of the data. Although we selected a 3-dimensional model of religiosity that had been previously tested and validated using a large population-based database,[19] the factor analysis of the 5 items did not support a 3-factor model for our sample. There are at least 2 explanations for this difference. First, 2 of the 3 factors were represented in our scale by only 1 item, which reduces the likelihood that these 2 factors would emerge from only the variance presented by these single items. Second, the 3-factor model had been validated in an exclusively African American population,[19] which might limit the generalizability to our population.

Jewish physicians scored lower on our scale of religiosity, when compared with Protestant and Catholic physicians. This may be because the scale items that were used to assess subjective or intrinsic religiosity reflected a more mystical than ascetic orientation. In some faith traditions, the maintenance of certain practices (eg, Jewish kashrut) takes precedence over other practices that pro-

TABLE 4

Physician Characteristics and Their Levels of Religious and Spiritual Beliefs and Practices

Characteristic*	Standardized Religiosity Score, Mean	SD	N	Test Value	P
All respondents	15.07	4.01	370		
Sex					
Men	15.32	3.97	269	t = 1.92	.056
Women	14.29	4.39	73		
Age, years					
<30	15.35	3.30	5	F = 2.25	.063
30 to 40	15.07	4.06	128		
41 to 55	14.65	4.19	173		
56 to 65	15.77	3.28	34		
>65	16.95	3.15	27		
Length of practice, years					
<5	15.35	4.02	57	F = 2.21	.087
5 to 15	14.59	4.15	164		
16 to 25	15.25	3.94	88		
>25	16.08	3.43	58		
Primary practice site					
Rural	15.29	3.70	80	F = 2.59	.037
Semirural	14.91	4.15	76		
Suburban	15.72	3.92	117		
Urban	14.05	4.29	73		
Inner city	16.91	3.72	11		
Religious denomination					
Protestant	16.05	3.32	206	F = 21.13	<.001
Catholic	15.18	3.65	83		
Jewish	11.61	4.49	16		
Muslim	15.27	0.12	2		
Other	14.67	4.03	29		
None	7.78	3.06	17		

*Note: For all independent variables, Levene's test for equality of variances was conducted. Variances were found to be statistically equal. Post-hoc analyses were conducted on 2 variables: primary practice site, where means for suburban and urban religiosity scores were found to be statistically different (P = .042) and religious denomination, where the mean religiosity score for Jewish physicians was lower than Protestant (P <.001) and Catholic (P = .003) physicians.

SD denotes standard deviation; N denotes total number of respondents.

TABLE 5

Religious and Spiritual Beliefs and Practices of Study Physicians and the General Population

Item	Family Physicians, %	General Population, %[17]
Religious denomination*	(N = 414)	(N = 32,277)
Protestant	56.8	63.7
Catholic	23.9	24.8
Jewish	5.6	2.1
Muslim	0.5	
Other	8.2	1.9
None	5.1	7.3
Frequency of religious or spiritual service attendance	(N = 426)	(N = 32,113)
At least daily	0.7	
At least weekly	50.7	29.6
At least monthly	21.7	22.3
Several times a year		13.2
Once a year or less	15.3	21.1
Not at all	9.1	13.9
How close do you feel to God (or a "Higher Force")?	(N = 424)	(N = 10,009)
Extremely close	35.1	31.8
Somewhat close	42.7	52.3
Not very close	17.7	9.5
Not close at all		5.0
I don't believe in God	4.5	1.4

*Items are quoted from our family physician survey; the wording on the General Social Survey (GSS) was slightly different. Because no Muslim category was offered on the GSS, a religious denomination of other may include Muslim.

mote union with God (eg, prayer). An additional explanation could be the disparity in attitudes, beliefs, and practices among the 3 Judaic traditions (orthodox, reformed, and conservative). Our scale also did not account for religiosity as a culturally based construct, which may account for lower religious institutional participation and personal integration of held beliefs among Jewish physicians.

Physicians who practice in urban settings also had lower religiosity scores than suburban physicians. There are 2 hypotheses for this finding. First, urban physicians may choose to be less institutionally affiliated and practice in a locale that is distant and disparate from their residence. This can provide a degree of personal anonymity and may release physicians from religiously based social roles and expectations within the community. Second, physicians with idiosyncratic religious and spiritual beliefs, independent of any faith tradition, may gravitate toward a more urban environment, where these beliefs may be validated and supported. Our measure lacked the sensitivity to identify these more individually held beliefs.

LIMITATIONS

Our study had several limitations. A higher proportion of our study population reported a rural primary practice site than did the general AAFP membership. We collapsed the 5 response categories for primary practice site (rural, semirural, suburban, urban, and inner city) into the 2 (urban and rural) recorded by the AAFP, which may account for the difference between our sample and the AAFP membership. Although there are regional variations in reported religiosity,[24] we did not include region of practice as part of our demographic data. An oversampling of physicians from those geographic areas with higher religiosity could have resulted in higher percentages of reported religious beliefs and practices. However, good item construction from established measures, pilot testing and scale refinement, a high alpha coefficient, and factor analysis support the reliability and validity of our scale. Although our response rate of 58% was modest, it is comparable with other survey studies of physicians in active clinical practice.[26,27] The sample population in our study was family physicians, and the generalizability of these findings to other specialties is unclear.

CONCLUSIONS

We found that family physicians report rates of religious belief and practice that are comparable with those of the general population. A measure of religiosity that incorporates 3 dimensions—organized religious activity, nonorganized religious activity, and subjective or intrinsic religiosity—can be a reliable and valid assessment of physician-reported religiosity. This measure may have utility in studies examining physician-patient interactions by providing one indication of physician core beliefs and personal philosophy.

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REFERENCES

1. Taylor SE. Health psychology: the science and the field. Amer Psychologist 1990; 45:40-50.
2. Gallup Poll. Religion in America: 1990. Princeton, NJ: Princeton Religion Research Center, 1990.
3. Newport F, Saad L. Religious faith is widespread but many skip church. Gallup Poll. Princeton, NJ: The Gallup Organization, March 29, 1997.
4. Furnham A. Explaining health and illness: lay perceptions on current and future health, the causes of illness, and the nature of recovery. Soc Sci Med 1994; 39:715-25.
5. Ganzini L, Johnston WS, McFarland BH, Tolle SW, Lee MA. Attitudes of patients with amyotrophic lateral sclerosis and their care givers toward assisted suicide. N Engl J Med 1998; 339:967-73.
6. King M, Speck P, Thomas A. Spiritual and religious beliefs in acute illness—is this a feasible area for study? Soc Sci Med 1994; 38:631-6.
7. Neeleman J, King MB. Psychiatrists' religious attitudes in relation to their clinical practice: a survey of 231 psychiatrists. Acta Psychiatria Scan 1993; 88:420-4.
8. Daaleman TP, Frey B. Prevalence and patterns of physician referral to clergy and pastoral care. Arch Fam Med 1998; 7:548-53.

9. Doukas DJ, Waterhouse D, Gorenflo DW, Seid J. Attitudes and behaviors on physician-assisted suicide: a study of Michigan oncologists. J Clin Oncol 1995; 13:1055-61.
10. Meier DE, Emmons CA, Wallenstein S, Quill T, Morrison RS, Cassel CK. A national survey of physician-assisted suicide in the United States. N Engl J Med 1998; 338:1193-201.
11. Laine C. Davidoff F. Patient-centered medicine: a professional evolution. JAMA 1996; 275:152-6.
12. Inui TS. What are the sciences of relationship-centered care? J Fam Pract 1996; 42:171-7.
13. Novack DH, Suchman AL, Clark W, Epstein RM, Najberg E, Kaplan C. Calibrating the physician: personal awareness and effective patient care. JAMA 1997; 278:502-9.
14. Koenig HG, Bearon LB, Hover M, Travis J. Religious perspectives of doctors, nurses, patients, and families. J Past Care 1991; 45:254-67.
15. Maugans TA, Wadland WC. Religion and family medicine: a survey of physicians and patients. J Fam Pract 1991; 32:210-3.
16. American Academy of Family Physicians Membership & Resource Directory: 1997-1998. Kansas City, Mo: American Academy of Family Physicians, 1997:11.
17. Davis JA, Smith TW. General social surveys, 1972-1985. Chicago, Ill: National Opinion Research Center, 1985.
18. Kass JD, Friedman R, Leserman J, Zuttermeister PC, Benson H. Health outcomes and a new index of spiritual experience. J Sci Stud Religion 1991; 30:203-11.
19. Chatters LM, Levin JS, Taylor RJ. Antecedents and dimensions of religious involvement among older Black adults. J Gerontol 1992; 47(soc sci suppl):S269-S78.
20. Larson DB, Swyers JP, McCullough ME, eds. Scientific research on spirituality and health: a consensus report. Rockville, Md: National Institute for Healthcare Research, 1998.
21. Browner WS, Black D, Newman TB, Hulley SB. Estimating sample size and power. In: Designing clinical research. Hulley SB, Cummings SR, eds. Baltimore, Md: Williams & Wilkins, 1988:139-50.
22. Bryant FB, Yarnold PR. Principle-components analysis and exploratory and confirmatory factor analysis. Reading and understanding multivariate statistics. Washington, DC: American Psychological Association, 1995:99-136.
23. Oyama O, Koenig HG. Religious beliefs and practices in family medicine. Arch Fam Med 1998; 7:431-5.
24. Davis JA, Smith TW. General social surveys, 1972-1994. Chicago, Ill: National Opinion Research Center, 1996.
25. Wulff DM. The correlational study of religion. In: Wulff DM, ed. Psychology of religion: classic and contemporary. 2nd ed. New York, NY: John Wiley & Sons; 1997:205-57.
26. Tunis SR, Hayward RS, Wilson MC, et al. Internists' attitudes about clinical practice guidelines. Ann Intern Med 1994; 120:956-63.
27. Halm EA, Causino N, Blumenthal D. Is gatekeeping better than traditional care: a survey of physician's attitudes. JAMA 1997; 278:1677-81.