The Association of Physicians' Religious Characteristics With Their Attitudes and Self-Reported Behaviors Regarding Religion and Spirituality in the Clinical Encounter

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Context: Controversy exists regarding whether and how physicians should address religion/spirituality (R/S) with patients.

Objective: This study examines the relationship between physicians' religious characteristics and their attitudes and self-reported behaviors regarding R/S in the clinical encounter.

Methods: A cross-sectional mailed survey of a stratified random sample of 2000 practicing U.S. physicians from all specialties. Main criterion variables were self-reported practices of R/S inquiry, dialogue regarding R/S issues, and prayer with patients. Main predictor variables were intrinsic religiosity, spirituality, and religious affiliation.

Results: Response rate was 63%. Almost all physicians (91%) say it is appropriate to discuss R/S issues if the patient brings them up, and 73% say that when R/S issues comes up they often or always encourage patients' own R/S beliefs and practices. Doctors are more divided about when it is appropriate for physicians to inquire regarding R/S (45% believe it is usually or always inappropriate), talk about their own religious beliefs or experiences (14% say never, 43% say only when the patient asks), and pray with patients (17% say never, 53% say only when the patient asks). Physicians who identify themselves as more religious and more spiritual, particularly those who are Protestants, are significantly more likely to endorse and report each of the different ways of addressing R/S in the clinical encounter.

Conclusions: Differences in physicians' religious and spiritual characteristics are associated with differing attitudes and behaviors regarding R/S in the clinical encounter. Discussions of the appropriateness of addressing R/S matters in the clinical encounter will need to grapple with these deeply rooted differences among physicians.

Key Words: religion, spirituality, ethics

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In recent years, religion/spirituality (R/S) has received increasing attention in the education of health care professionals. Many medical schools have instituted courses on R/S and medicine,[1] and organizations such as the American Association of Medical Colleges (AAMC) have developed guidelines and educational objectives for such courses.[2]

These efforts to develop professional norms and guidelines are challenged by ongoing controversy regarding the ways and means by which physicians or other health care professionals should engage patients regarding R/S.[3–7] Should physicians inquire about patients' religious beliefs? Should they engage in dialogue with their patients about R/S? When, if ever, should they pray with their patients?

Data suggest that, for many patients, R/S concerns are a prominent part of the experience of illness.[8–11] Thus, some have argued that physicians should give *attention* to such concerns as a part of patient-centered, holistic, comprehensive care.[3,12,13] However, R/S can also be sensitive, controversial, and divisive. Thus, others have suggested that physicians who discuss R/S concerns may cross professional boundaries and become offensive and coercive.[5,14,15]

We wondered whether these controversies might, in part, be rooted in physicians' own religious beliefs. If so, then discussions which view R/S matters as analogous to other areas of professional competence may, at least partially, miss the point. We found in an earlier study that physicians often invoke their own religious beliefs in explaining their approaches to R/S with patients.[16,17] We therefore hypothesized that disagreements and differing behaviors among practicing physicians might reflect differences in physicians' religious and spiritual characteristics.

Earlier survey studies have generated conflicting evidence in this regard. A study of family physicians found that those with greater religiosity were slightly more likely to refer patients to religious clergy.[18] A study of primary care physicians from medical centers in the Southeast found that those with more

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frequent attendance at religious services and those with higher spiritual well-being scores were more likely to endorse physician-initiated R/S inquiry and prayer with patients.[19] In addition, a recent study of residents at 1 institution found that those with greater levels of personal spirituality and those reporting more frequent organized religious activity were more likely to believe they should play a role in patients' R/S lives.[20] Yet, a small study of pediatricians did not find that a strong personal R/S orientation was associated with engaging in such discussions,[21] and Chibnall and Brooks[22] found that, after accounting for physicians' self-reported discomfort, physician religiosity was not associated with physicians' behaviors. All of these previous studies have been limited by relatively small samples drawn from one or more medical centers and/or specific physician specialties. In addition, none of the studies examined whether physicians' particular religious *affiliations* are also associated with their attitudes and behaviors. To build on the findings of these studies, we conducted a large national survey of US physicians.

METHODS

Design and Study Population

The methods for this study have been reported elsewhere.[23] We mailed a confidential, self-administered, 12-page questionnaire to a stratified random sample of 2000 practicing U.S. physicians age 65 or younger, chosen from the American Medical Association Physician Masterfile—a database intended to include all physicians in the US. We included modest oversamples of psychiatrists and several other subspecialties that deal particularly with death and severe suffering to enhance the power of analyses which are not central to this manuscript (regarding end-of-life care and psychiatry). The effects of this sampling strategy are accounted for in all statistical analyses, as described in this report.

Data Collection

Physicians received up to 3 separate mailings of the questionnaire, titled "Religion and Spirituality in Medicine: Physicians' Perspectives (RSMPP)." The third mailing offered $20 for participation. To decrease error from data entry, all data was double-keyed, cross-compared, and corrected against the original questionnaires. The study was approved by the University of Chicago Institutional Review Board.

Study Instrument

Criterion Variables

Multiple survey items assessed physicians' attitudes and self-reported behaviors regarding R/S in the clinical encounter. These items were written by the authors after thorough review of the spirituality and medicine literature and data gathered from a series of qualitative pilot interviews. Items were then pretested and revised for clarity and cogency through multiple iterations of expert panel review.[24] The terms *religion* and *spirituality* are closely related and used in overlapping ways within the medical literature. As such, in the survey items that constituted our criterion variables, we did not define the terms as distinct concepts but presented them together and allowed respondents to apply their own working definitions.

Predictor Variables

Intrinsic religiosity is perhaps the most widely validated measure of religiosity[25,26] and is intended to measure the extent to which an individual embraces his or her religion as the "master motive" that guides and gives meaning to his or her life.[27] Intrinsic religiosity was measured here as agreement or disagreement with 2 statements, "I try hard to carry my religious beliefs over into all my other dealings in life," and "My whole approach to life is based on my religion." Both measures are derived from the longer Hoge's Intrinsic Religious Motivation Scale[28] and have been validated extensively in prior research.[27–31] For the purposes of our analysis, physician religiosity was categorized as low if the physician agreed with neither statement, moderate if the physician agreed with one but not the other, and high if the physician agreed with both statements.

Some have noted that many persons who are not religious may still be *spiritual*.[32] In fact, in recent years there has been a trend toward the study of spirituality over religion,[32–34] although there is still disagreement as to what *spirituality* means.[34,35] In this study, physicians were asked "To what extent do you consider yourself a spiritual person?" Physician spirituality was categorized as high if the physician answered "highly spiritual," moderate if the physician answered "moderately spiritual," and low if the physician answered "slightly" or "not at all spiritual."

Religiosity and spirituality are related concepts, and we found that they were correlated with one another (coefficient 0.49) and had the same directions of association with the criterion variables. We therefore combined the 2 variables to create 1 nine-category predictor variable "religiosity/spirituality" as shown in Tables 1 and 3.

Physicians were also asked, "What is your religious affiliation?" Response categories were *Catholic*, *Jewish*, *Other religion* (includes Buddhist, Hindu, Mormon, Muslim, Eastern Orthodox, and Other), *Protestant*, and *None* (includes Atheist, Agnostic, and None).

To examine barriers to further interaction with patients regarding R/S, we asked physicians to note if any of the following discourage them from discussing R/S with patients: 1) general discomfort discussing religious matters, 2) insufficient knowledge/training, 3) insufficient time, 4) concern about offending patients, and 5) concern that colleagues will disapprove.

Control Variables

Physician age, gender, foreign versus U.S. medical graduation, region, and primary specialty were derived from the AMA Masterfile data. Physician ethnicity was measured with 2 questionnaire items. Categories for each of these variables are listed in Table 1.

Analysis

Case weights[36] were assigned and included in analyses to account for the sampling strategy and modest differences in response rate by gender and foreign medical graduation. Missing data and items marked "Does not apply" were excluded from analyses. We first generated estimated proportions for each survey item. We then dichotomized the crite-

TABLE 1. Respondent Characteristics (n = 1144)*

Age in years (SD)	49.0 (8.3)
Women, n (%)	300 (26)
Board certified, n (%)	988 (87)
Foreign medical graduates, n (%)	224 (20)
Race/ethnicity, n (%)	
Asian	158 (12)
Black, non-Hispanic	26 (2)
Hispanic/Latino	57 (5)
White, non-Hispanic	869 (78)
Other	31 (3)
Region, n (%)	
Northeast	264 (23)
South	386 (34)
Midwest	276 (24)
West	216 (19)
Primary specialty, n (%)	
Family practice	158 (14)
General internal medicine	129 (11)
Internal medicine subspecialties	231 (20)
Obstetrics and gynecology	80 (7)
Pediatrics and its subspecialties	147 (13)
Psychiatry	100 (9)
Surgical subspecialties	100 (9)
Other	197 (17)
Religious Affiliation, n (%)	
Catholic	244 (22)
Jewish	181 (16)
Other religion	139 (13)
Protestant	427 (39)
None	117 (11)

Religiosity/spirituality, n (%)

	Spirituality		
Religiosity	Low	Moderate	High
Low	199 (18)	168 (15)	39 (4)
Moderate	60 (5)	173 (16)	58 (5)
High	19 (2)	187 (17)	189 (17)

*N-counts do not all sum to 1144 because of partial nonresponse.

rion variables at the point most closely approximating 50% and used the Pearson χ^2 test to examine their univariate associations with physician religiosity/spirituality, religious affiliation, and self-reported barriers to discussing R/S. Finally, we used multivariate logistic regression to see which univariate associations remained after adjusting for other covariates. All analyses take into account survey design and case weights by utilizing the survey commands of Stata/SE 8.0 (Stata Corp, College Station, TX).

RESULTS

Survey Response

Of the 2000 potential respondents, 1144 participated in the survey. Forty-seven questionnaires were returned by the postal service as undeliverable and were therefore considered ineligible. To estimate the proportion of the remaining 809 questionnaires that was mailed to eligible physicians, we did the following: At the close of data collection, we used identical telephone and internet search techniques to try to locate and contact 30 physician respondents and 30 physicians from those with unknown eligibility. We were able to locate 27 of 30 (0.90) respondents and 22 of 30 (0.73) of those with unknown eligibility and therefore estimated that 83% ($1 - [0.90 - 0.73]$) of the 809 unknowns were in fact eligible. Our estimated response rate among eligible physicians is therefore 63% (*Response Rate 4* from the American Association for Public Opinion Research *Standards Definitions*: $1144/(1144 + 0.83*809)$[37]). Respondent characteristics are listed in Table 1.

Checks for Response Bias

Foreign medical graduates were less likely to respond than U.S. medical graduates (54% vs. 65%, $P < 0.01$), and men were slightly less likely to respond than women (61% vs. 67%, $P = 0.03$). These differences were accounted for by case-weighting. Response rates did not differ by age, region, or board certification. Furthermore, we found no differences in intrinsic religiosity by response wave, and after the close of formal data collection, we contacted 20 nonrespondents among whom 75% (compared with 58% of respondents) agreed with the statement, "I try hard to carry my religious beliefs over into all my other dealings in life." Counter to our expectations, the proportion of respondents who reported religious affiliations as *Atheist*, *Agnostic*, or *None* declined slightly in later waves ($P < 0.05$). These findings suggest that nonreligious physicians may have been slightly more likely to respond to our survey than religious physicians.

Physicians' Attitudes and Self-Reported Behaviors

As seen in Table 2, the large majority (91%) of physicians believe it is usually or always appropriate to discuss R/S issues when a patient brings them up, and when R/S issues arise, 73% say they often or always encourage patients' own beliefs and practices. In contrast, physicians are almost evenly divided regarding whether it is appropriate for physicians to inquire about patients' R/S, and whether they themselves ever do. Although half of physicians inquire at least rarely, only 1 in 10 does so often or always. Doctors are likewise divided about when it is appropriate for a physician to talk about his or her own religious beliefs or experiences with patients, something that 43% endorse "whenever the physicians senses it would be appropriate," but only 12% report doing often or always.

One of the most controversial areas is prayer with patients. Less than a third of doctors endorse praying with patients whenever the physician senses it is appropriate, and the large majority (81%) say they rarely or never pray with their patients.

We found that only 1% of physicians believe they spend too much time addressing R/S issues, whereas 38% say they spend too little. When asked to identify barriers that discourage them from discussing R/S with patients, physicians were most likely to note insufficient time (48%), con-

TABLE 2. Survey Responses Regarding Religion/Spirituality in Clinical Practice

	Response Categories	Physicians, %*
Attitudes		
In general, is it appropriate or inappropriate for a physician to inquire about a patient's religion/spirituality?	Always appropriate	10
	Usually appropriate	45
	Usually inappropriate	37
	Always inappropriate	8
In general, is it appropriate or inappropriate for a physician to discuss religious/spiritual issues when a patient brings them up?	Always appropriate	35
	Usually appropriate	56
	Usually or always inappropriate	9
When, if ever, is it appropriate for a physician to talk about his or her own religious beliefs or experiences with a patient?	Never	14
	Only when the patient asks	43
	Whenever the physician senses†	43
When, if ever, is it appropriate for a physician to pray with a patient?	Never	17
	Only when the patient asks	53
	Whenever the physician senses†	29
Overall, do you think the amount of time you spend addressing religious/spiritual issues is:	Too much	1
	Too little	38
	The right amount	61
Behaviors		
How often do you inquire about patients' religious/spiritual issues?	Never	49
	Rarely	17
	Sometimes	25
	Often or always	10
I respectfully share my own religious ideas and experiences . . .‡	Never	27
	Rarely	32
	Sometimes	29
	Often or always	12
I encourage patients in their own religious/spiritual beliefs and practices . . .‡	Never or rarely	7
	Sometimes	19
	Often	38
	Always	35
I try to change the subject in a tactful way . . .‡	Never	39
	Rarely	37
	Sometimes	19
	Often or always	6
I pray with the patient . . .‡	Never	47
	Rarely	34
	Sometimes	15
	Often or always	4

*Total physician n-count varies by item from 1045 to 1102 because of partial nonresponse and the exclusion from the denominator of those who marked "Does not apply." Standard errors for all estimates in this table ≤ 1.6%. Because of rounding, percentages do not always sum to 100.

†"Whenever the physician senses it would be appropriate."

‡These items preceded by: "When religious/spiritual issues come up in discussions with patients . . ."

cern about offending patients (40%), insufficient knowledge/training (26%), and a general discomfort with discussing religious matters (23%). Only 4% noted concern that their colleagues will disapprove.

Religious Characteristics as Predictors of Attitudes and Behaviors

Physician R/S and religious affiliation were strongly associated with physicians' attitudes and behaviors regarding R/S in the clinical encounter. For simplicity, Tables 3 and 4 show the associations only for behaviors, but parallel associations were found for all measures listed in Table 2.

As seen in Table 3, physicians who are more religious and more spiritual also are more likely to report the practice of each behavior related to addressing R/S in the clinical encounter. In general, religiosity and spirituality interact such that, at a given level of one, an increase in the other increases the likelihood of endorsing and reporting the behavior. Of note, compared with physicians of low religiosity and spirituality (18% of all physicians), those with high religiosity and

TABLE 3. Physician Behaviors Stratified by Religiosity and Spirituality

		Univariate, % Spirituality			Multivariate Odds Ratio [95% Confidence Interval] Spirituality		
Behavior	**Religiosity**	**Low**	**Moderate**	**High**	**Low**	**Moderate**	**High**
I do inquire about R/S (ever)	**Low**	23	48	51	Referent	2.7 [1.6–4.8]*	2.2 [0.9–5.1]
	Moderate	36	47	70	1.3 [0.6–3.0]	2.0 [1.2–3.7]*	5.1 [2.2–12.0]*
	High	40	60	76	1.5 [0.5–4.7]	3.8 [2.2–6.7]*	6.6 [3.5–12.5]*
I share my own R/S ideas and experiences (sometimes, often, or always)	**Low**	11	24	27	Referent	1.6 [0.8–3.1]	1.5 [0.5–4.7]
	Moderate	15	38	66	1.0 [0.4–3.0]	2.7 [1.4–5.3]*	5.9 [2.4–14.4]*
	High	40	59	76	3.3 [1.1–9.8]*	5.8 [2.9–11.4]*	11.6 [5.6–24.3]*
I always encourage patients' R/S beliefs and practices	**Low**	20	31	53	Referent	1.9 [1.0–3.3]*	3.6 [1.5–8.6]*
	Moderate	37	34	62	2.4 [1.0–5.3]*	2.0 [1.1–3.8]*	6.4 [2.9–14.3]*
	High	51	42	41	4.8 [1.6–14.5]*	2.7 [1.5–5.0]*	2.4 [1.3–4.4]*
I never try to change the subject (when R/S comes up)	**Low**	22	33	55	Referent	1.6 [0.9–2.8]	4.1 [1.6–10.3]*
	Moderate	38	32	61	1.9 [0.9–4.1]	1.5 [0.8–2.7]	4.5 [2.0–10.0]*
	High	43	40	56	2.4 [0.8–7.6]	2.1 [1.2–3.8]*	3.4 [1.9–6.1]*
I pray with patients (ever)	**Low**	30	43	45	Referent	1.3 [0.7–2.3]	1.3 [0.5–3.4]
	Moderate	30	53	74	0.7 [0.3–1.5]	1.5 [0.9–2.7]	2.7 [1.2–6.1]*
	High	77	69	76	5.2 [1.4–19.2]*	2.5 [1.4–4.4]*	3.5 [1.9–6.5]*

Table lists the proportion of physicians who report each behavior, broken down by 9 strata of religiosity/spirituality. For example, among those physicians who had low religiosity and low spirituality, 23% reported ever inquiring about R/S.

Total physician n-count varies by item from 1037 to 1049 because of partial nonresponse and the exclusion from the denominator of those who marked "Does not apply."

$P < 0.0001$ ($\chi 2$) for all univariate analyses.

Multivariate analyses by logistic regression include religious affiliation, barriers to discussing R/S, age, gender, ethnicity, foreign versus U.S. medical graduation, region, and primary specialty.

*$P < 0.05$.

spirituality (17% of all physicians) are more than 3 times as likely to say they spend *too little* time discussing R/S with patients (63% vs. 18%, $P < 0.0001$), despite the fact that they are more likely to report R/S inquiry and more likely to say they never change the subject when R/S issues comes up. Those of high religiosity and high spirituality differ from those of low religiosity and low spirituality (at $P < 0.05$) on every attitude and behavior measure even after adjusting for differences in religious affiliation, self-reported barriers to discussing R/S, specialty, and other covariates.

As seen in Table 4, Protestants were most likely to report R/S inquiry, discussion of the physician's own R/S beliefs and experiences, and prayer with patients. In multivariate analyses adjusting for religiosity/spirituality and other covariates, Catholics, Jews, and those with other religious affiliations were all more likely than Protestants to say they always encourage patients' own R/S beliefs and practices. Jewish physicians were less likely than Protestants to report R/S inquiry, discussion of the physician's own R/S beliefs and experiences, and prayer with patients.

Self-Reported Barriers as Predictors of Behaviors

Among the barriers to discussing R/S with patients, concern that colleagues will disapprove was not associated (at $P < 0.05$) with any attitude or behavior and was therefore omitted from multivariate models. In both univariate and multivariate analyses, physicians who noted insufficient time were modestly *more* likely to report R/S inquiry (58% vs. 44%, multivariate odds ratio 1.9, 95% confidence interval [95% CI] 1.3–2.6), and those who reported concern about offending patients were modestly less likely to say they never try to change the subject (31% vs. 44%, OR 0.6, 95% CI 0.4–0.8).

In univariate analysis, physicians who reported general discomfort with discussing religious matters or insufficient knowledge and training were less likely to report each of the physician behaviors (χ^2: $P < 0.01$), but they were also more likely to have low religiosity/spirituality. For example, among physicians of low religiosity and low spirituality, 44% noted general discomfort and 41% insufficient knowledge and training. Among physicians with high religiosity and high spirituality, those barriers were only endorsed by 3% and 7% respectively ($P < 0.0001$). After adjusting for religious characteristics and other covariates, insufficient knowledge/training was not associated with any behavior, but physicians reporting general discomfort remained less likely to report religious inquiry (OR 0.6, 95% CI 0.4–0.9), discussion of the physician's own R/S beliefs and experiences (OR 0.2, 95% CI 0.1–0.4), never changing the subject (OR 0.4, 95% CI 0.3–0.7), and prayer (OR 0.5, 95% CI 0.3–0.8).

CONCLUSIONS

Almost all physicians believe it is appropriate to discuss R/S issues when a patient brings them up, at which point

TABLE 4. Physician Behaviors Stratified by Religious Affiliation

Behavior	Religious Affiliation	Univariate, %	Multivariate OR [95% CI]
I do inquire about R/S (ever)	Protestant	62	Referent
	Catholic	51	0.6 [0.5–1.2]
	Jewish	34	0.5 [0.3–1.0]*
	Other	47	0.8 [0.4–1.4]
	None	39	0.6 [0.0–1.0]
I share my own R/S ideas and experiences (sometimes, often, or always)	Protestant	53	Referent
	Catholic	46	0.8 [0.5–1.3]
	Jewish	13	0.3 [0.2–0.6]*
	Other	46	0.6 [0.3–1.2]
	None	15	0.3 [0.1–0.6]*
I always encourage patients' R/S beliefs and practices	Protestant	33	Referent
	Catholic	43	1.8 [1.2–2.8]*
	Jewish	31	1.7 [1.0–2.9]*
	Other	48	2.2 [1.2–3.8]*
	None	24	1.1 [0.6–2.0]
I never try to change the subject (when R/S comes up)	Protestant	44	Referent
	Catholic	41	1.2 [0.8–7.6]
	Jewish	32	1.0 [0.6–1.6]
	Other	39	1.0 [0.6–1.7]
	None	27	0.8 [0.4–1.4]
I pray with patients (ever)	Protestant	69	Referent
	Catholic	57	0.7 [0.5–1.1]
	Jewish	22	0.2 [0.1–0.4]*
	Other	64	0.9 [0.5–1.1]
	None	20	0.2 [0.1–0.4]*

Total physician n-count varies by item from 1042 to 1064 because of partial nonresponse and the exclusion from the denominator of those who marked "Does not apply."

$P \leq 0.0005$ ($\chi 2$) for all univariate associations except *never change subject* ($P = 0.01$).

Multivariate analyses by logistic regression include religiosity/spirituality, barriers to discussing R/S, age, gender, ethnicity, foreign versus U.S. medical graduation, region, and primary specialty.

*$P < 0.05$.

the great majority say they encourage patients in their own R/S beliefs and practices. Fewer physicians initiate discussions with patients about R/S, talk about their own R/S ideas and experiences, or pray with patients.

Physicians' approaches to these matters vary substantially according to physicians' religious characteristics. Physicians who describe themselves as religious or spiritual are much more likely to initiate discussions about R/S and to pray with patients. The influence of physician religiosity and spirituality appears to be mediated partially through influence on the level of general discomfort discussing religious matters and on the level of knowledge and training, but these factors do not explain all of the variation. In a recent publication from this national survey,[23] we reported that 55% of physicians say their religious beliefs influence their practice of medicine. The present findings point to one area of such influence. The clinical and educational implications of this perhaps unsurprising but rarely acknowledged relationship are complex. Clinically, this study suggests that, regardless of any policy efforts to universalize some standard practice of attention to R/S concerns, patients will likely encounter very different approaches depending on the religious characteristics of their physicians.

If patients and physicians choose each other without reference to religious characteristics, Protestant physicians would be most likely to share the religious affiliation of any given patient, simply because the majority of Americans are Protestant.[23] If we suppose that religious concordance leads to greater familiarity and comfort, it is not surprising that Protestant physicians are most likely to interact with patients regarding R/S issues. Likewise, religious and spiritual physicians may be more comfortable interacting with patients regarding R/S because, as prior studies suggest, patients who are more religious are more likely to want their physicians to inquire about and discuss R/S.[38,39] This facilitating influence of religious concordance is likely augmented to the extent that patients and physicians aggregate based on shared religious and spiritual characteristics. The extent to which they do remains unknown and is worthy of study.

Regarding the education of health-professionals, the AAMC has promoted a series of learning objectives whereby graduating medical students should be able to: elicit a spiritual history, apply the understanding of patients' spirituality to appropriate clinical contexts, and "recognize that their own spirituality . . . might affect the ways they relate to, and provide care to, patients."[2] Our study suggests that, despite the first 2 objectives, differences in physicians' religious characteristics may make it difficult for any robust consensus to develop regarding whether and how physicians should address patients' R/S concerns. If so, educators of health professionals might focus on the last, and more modest objective by encouraging medical students and practitioners to become more conscious of and candid about the ways their own religious and spiritual characteristics shape their approach to R/S in the clinical encounter.[7,17,40]

The study has important limitations. First, as a cross-sectional survey our study is not able to explain why physicians with different religious characteristics differ so markedly in their approaches to spirituality and medicine. For example, it seems most plausible that the relationship between physicians' R/S and their level of discomfort discussing R/S issues is explained by the influence of the former on the latter. Yet, our study design does not allow any formal inference regarding causality. We are currently conducting a series of in-depth qualitative studies to provide a thicker description[41] of the ways physicians' understand their religious commitments to influence their clinical practices.

In addition, our criterion variables were explicitly constructed to assess *general* attitudes and behaviors and therefore did not specify particular contexts. Undoubtedly, physicians' attitudes and self-reported behaviors would have differed somewhat based on different clinical scenarios, such as caring for a critically ill inpatient versus caring for a healthy outpatient. Furthermore, all of the main predictor and criterion variables are by self-report. Though our study had a better than average response rate,[42] and we did not find substantial evidence to suggest response bias, religious and other characteristics may have systematically affected physicians' willingness to respond in unmeasured ways. Of note, it is possible to operationalize religiousness and spirituality in different ways, using more items or different constructs.[25,35] Yet, we found similar relationships when we operationalized religiosity by self-assessment ("To what extent do you consider yourself a religious person?"), or by self-reported frequency of attendance at religious services. Finally, the small number of subjects in some of our subpopulations (n-counts listed in Table 1) limits the stability of estimates for those subpopulations, and we note that the multivariate odds ratios should be carefully interpreted as they can appear to overestimate the true "relative risk" of the predictors given the high prevalence of our criterion variables.[43]

Despite these limitations, these data suggest some compelling directions for further research. Throughout much of history, medicine and religion have coexisted in uneasy tension. Both confront the most challenging experiences in life—birth, illness, suffering, disability and death—experiences that raise fundamental questions about human nature and human experience. As the technical power of contemporary medicine has expanded, so has its scope of application. As a result, contemporary medicine is often applied in areas about which different religious (or secular) traditions provide rival explanations and resources for healing. The time may be ripe for a deeper and more fundamental examination of the influence of religion in the lives of doctors, the lives of patients, and in the complex culture of health care.

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