Do Religious Physicians Disproportionately Care for the Underserved?

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ABSTRACT

PURPOSE Religious traditions call their members to care for the poor and marginalized, yet no study has examined whether physicians' religious characteristics are associated with practice among the underserved. This study examines whether physicians' self-reported religious characteristics and sense of calling in their work are associated with practice among the underserved.

METHODS This study entailed a cross-sectional survey by mail of a stratified random sample of 2,000 practicing US physicians from all specialties.

RESULTS The response rate was 63%. Twenty-six percent of US physicians reported that their patient populations are considered underserved. Physicians who were more likely to report practice among the underserved included those who were highly spiritual (multivariate odds ratio [OR] = 1.7; 95% confidence interval [CI], 1.1-2.7], those who strongly agreed that their religious beliefs influenced their practice of medicine (OR = 1.6; 95% CI, 1.1-2.5), and those who strongly agreed that the family in which they were raised emphasized service to the poor (OR = 1.7; 95% CI, 1.0-2.7). Physicians who were more religious in general, as measured by intrinsic religiosity or frequency of attendance at religious services, were much more likely to conceive of the practice of medicine as a calling but not more likely to report practice among the underserved.

CONCLUSIONS Physicians who are more religious do not appear to disproportionately care for the underserved.

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INTRODUCTION

Codes of medical ethics have called physicians to care for the poor for centuries, from the birth of the Hippocratic tradition in ancient Greece,[1] through the middle ages in Europe,[2] and into modern America.[3] In spite of such ongoing moral exhortation, many poor patients and communities continue to be medically underserved.[4-9]

Physicians have compelling reasons to avoid practicing among the poor. Physicians who choose to work in underserved settings often forgo academic opportunities, professional prestige,[7] and free time,[10] and accept reduced salaries, diminished control over the work environment,[4] and increased bureaucratic interference.[10] These and other extrinsic[11,12] and objective[13] workplace characteristics diminish the appeal of underserved settings.

Although the poor are underserved, they are not unserved; many physicians choose to practice in underserved settings. Those who do tend to identify intrinsic and intangible rewards of their work, such as making a difference in society, having a positive impact on the lives of patients who are otherwise marginalized, and living in a way congruent with their personal hopes and aspirations.[10,14] These subjective rewards express ways in which physicians may relate to their work among the underserved more as a calling than as a job.[12,13]

The concept of calling is currently used in the work literature to refer broadly to work done with a sense of inner direction and aimed at improving the world.[13,15] In the words of Bellah,[16] a calling "constitutes a practical ideal of activity and character that makes a person's work morally inseparable from his or her life." Although a calling can be either religious or secular in orientation, religious factors may be particularly influential in calling physicians to practice among the underserved because Christian,[17] Buddhist,[18] Hindu,[19] Jewish,[20] and Muslim[21] scriptures all call the faithful to serve the poor.

Previous studies have noted that physicians choose to practice among the underserved because of their hopes, aspirations, beliefs, personal values, and basic orientations to humanity,[10,14] yet no study to date has quantitatively examined associations between physicians' religious characteristics and their work among the underserved. In an earlier qualitative study, we found that clinicians from a sample of faith-based community health centers uniformly described their work among the underserved as a response to a religious sense of calling.[22] Building on those findings, this study uses data from a national survey of a probability sample of physicians to examine whether physicians who are more religious, who conceive of their practice of medicine as a calling, or both are also more likely to report caring for the underserved.

METHODS

Design and Sampling

This study's methods have been described in detail elsewhere.[23,24] We mailed a confidential, self-administered, 12-page questionnaire to a stratified random sample of 2,000 practicing US physicians aged 65 years or younger, chosen from the American Medical Association Physician Masterfile—a database intended to include all physicians in the United States. We included modest oversamples of psychiatrists and several other subspecialties to enhance the power of analyses that are not central to this article. Physicians received up to 3 separate mailings of the questionnaire, and the third mailing offered $20 for participation. This study was approved by the University of Chicago Institutional Review Board.

Study Instrument

The primary criterion variable was physicians' responses to the question, "Is your patient population considered underserved?" (response options: yes and no). To cross-check the validity of this measure, we also asked physicians to estimate the percentage of their patients who were uninsured or recipients of Medicaid, and we asked them to indicate whether they practiced in any of several typical safety net settings (free clinic, community health center or migrant health center, public or county hospital, or other rural health center).

Primary predictor variables included measures of physicians' religious characteristics. *Intrinsic religiosity*—the extent to which individuals embrace their religion as the "master motive" that guides and gives meaning to their life[25]—was measured 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 statements are derived from Hoge's Intrinsic Religious Motivation Scale[26] and have been validated extensively in prior research.[26-28] Intrinsic religiosity was categorized as low if physicians disagreed with both statements, moderate if they agreed with 1 but not the other, and high if they agreed with both. *Organizational*,[29] or *participatory*,[30] *religiosity* was measured as physicians' frequency of attendance at religious services, categorized as never, once a month or less, or twice a month or more. Physicians' religious affiliations were categorized as none (included atheist, agnostic, and none), Protestant, Catholic, Jewish, or other (included Buddhist, Hindu, Mormon, Muslim, Eastern Orthodox, and other). Additionally, we asked physicians to what extent they agreed with the statement, "My religious beliefs influence my practice of medicine."

Many people consider themselves spiritual but not religious,[23] and there has been a trend toward the study of spirituality over religion.[31-33] Because there is still disagreement as to what spirituality means,[33,34] we allowed physicians to classify themselves by asking, "To what extent do you consider yourself a spiritual person?" Spirituality was categorized as high if physicians answered highly spiritual, moderate if they answered moderately spiritual, and low if they answered slightly or not at all spiritual.

Because we hypothesized that a sense of calling would be associated with care of the underserved, we asked physicians to what extent they agreed with the statement, "For me, the practice of medicine is a calling." In addition, because studies suggest that those who eventually work in underserved settings are likely to have begun medical training with that orientation already in place,[8,35,36] we asked physicians to what extent they agreed with the statement, "The family in which I was raised emphasized the importance of serving those with fewer resources."

We examined physician demographics (age, sex, ethnicity, region, and foreign medical graduation) and practice characteristics (primary specialty, board certification, educational loan repayment, and work in

Table 1. Characteristics of Respondents (N = 1,144)

Characteristics	No. (%) or Mean (SD)	Characteristics	No. (%) or Mean (SD)
Demographic characteristics		**Religious characteristics**	
Age, years, mean (SD)	49.0 (8.3)	Spirituality	
Women	300 (26)	Low	294 (26)
Ethnicity		Moderate	535 (48)
Asian	138 (12)	High	293 (26)
Black, non-Hispanic	26 (2)	Intrinsic religiosity	
Hispanic/Latino	57 (5)	Low	407 (37)
White, non-Hispanic	869 (78)	Moderate	292 (27)
Other	31 (3)	High	399 (36)
Region		Attendance at religious services	
South	386 (34)	Never	114 (10)
Midwest	276 (24)	Once a month or less	499 (44)
Northeast	264 (23)	Twice a month or more	515 (46)
West	216 (19)	Religious affiliation	
Foreign medical graduates	224 (20)	None*	117 (10)
Practice characteristics		Catholic	244 (22)
Primary specialty		Jewish	181 (16)
Family practice	158 (14)	Other religion	157 (14)
General internal medicine	129 (11)	Protestant	428 (38)
Internal medicine subspecialties	231 (20)	Religious beliefs influence medicine	
Obstetrics and gynecology	80 (7)	Strongly disagree/disagree	485 (43)
General pediatrics	87 (8)	Agree	426 (38)
Pediatric subspecialties	60 (5)	Strongly agree	208 (19)
Psychiatry	100 (9)	**Intrinsic motivations for work**	
Surgical subspecialties	100 (9)	Family emphasized service to the poor	
Other	197 (17)	Strongly disagree/disagree	232 (21)
Board certified	988 (87)	Agree	548 (49)
Receive educational loan repayment	14 (1)	Strongly agree	343 (31)
Work in an academic health center	354 (32)	Practice of medicine is a calling	
		Strongly disagree/disagree	316 (29)
		Agree	438 (40)
		Strongly agree	352 (32)

Note: Totals do not all sum to 1,144 because of partial nonresponse. Percentages do not all sum to 100 because of rounding error.

* Includes atheist, agnostic, and none.

academic health center) as covariates. Categories for all predictor variables are listed in Table 1.

Analysis

Case weights[37] were assigned and included in analyses to account for the sampling strategy and modest differences in response rate by sex and foreign medical graduation. We first generated estimated proportions for each survey item. We then used the χ^2 test to examine the association between each predictor and the criterion variable. Finally, we used multivariate logistic regression analysis to examine whether associations persisted after controlling for other covariates. These analyses were conducted for the full study population and then repeated for the subpopulations of primary care physicians (general internists, general pediatricians, and family physicians) and family physicians. All analyses were conducted using the statistical software Stata/SE 9.0 (Stata Corp, College Station, Tex).

RESULTS

Survey Response

Of the 2,000 potential respondents, an estimated 9% were ineligible because their addresses were incorrect or they were deceased. Among eligible physicians, our response rate was 63% (1,144/1,820). (Details of response rate estimation[24] and physicians' religious characteristics[23] have been provided elsewhere.) Respondent characteristics are listed in Table 1.

Foreign medical graduates were less likely to respond than US medical graduates (54% vs 65%, $P < .01$), and men were slightly less likely to respond than women (61% vs 67%, $P = .03$). These differences

Table 2. All Physicians (N = 1,144): Self-Reported Practice Among the Underserved, Stratified by Physician Sex, Specialty, Religious Characteristics, and Intrinsic Motivations

	Practice Among the Underserved		
	Bivariate		Multivariate
Characteristics (n*)	%	*P* Value	OR (95% CI)
Sex			
Male (817)	25	.03	1.0 (referent)
Female (284)	32		1.0 (0.7-1.6)
Primary specialty			
Family practice (156)	31		1.0 (referent)
General internal medicine (128)	26		0.7 (0.4-1.2)
Medicine subspecialties (223)	21		0.6 (0.3-1.0)
Obstetrics and gynecology (77)	23	.04	0.6 (0.3-1.3)
General pediatrics (84)	34		1.1 (0.6-2.2)
Pediatric subspecialties (55)	38		1.2 (0.5-2.8)
Psychiatry (96)	40		1.8 (1.0-3.2)
Surgical subspecialties (97)	25		0.7 (0.4-1.3)
Other (185)	21		0.6 (0.3-1.0)
Religious characteristics			
Spirituality			
Low (283)	21		1.0 (referent)
Moderate (516)	26	.02	1.4 (0.9-2.0)
High (287)	32		1.7 (1.1-2.7)†
Intrinsic religiosity			
Low (394)	27		1.0 (referent)
Moderate (281)	22	.15	0.8 (0.5-1.2)
High (388)	29		1.1 (0.8-1.6)
Attendance at religious services			
Never (112)	28		1.0 (referent)
Once a month or less (480)	26	.90	1.0 (0.6-1.6)
Twice a month or more (499)	26		1.0 (0.6-1.6)
Religious affiliation			
None (110)	35		1.0 (referent)
Catholic (236)	26		0.7 (0.4-1.2)
Jewish (173)	16	.02	0.3 (0.2-0.6)†
Other religion (135)	28		1.0 (0.5-1.9)
Protestant (418)	28		0.7 (0.4-1.1)
Religious beliefs influence medicine			
Strongly disagree/disagree (467)	26		1.0 (referent)
Agree (415)	23	.005	0.8 (0.6-1.2)
Strongly agree (202)	36		1.6 (1.1-2.5)†
Intrinsic motivations for work			
Family emphasized service to poor			
Strongly disagree/disagree (225)	20		1.0 (referent)
Agree (533)	27	.05	1.3 (0.9-2.1)
Strongly agree (329)	31		1.7 (1.0-2.7)†
Practice of medicine is a calling			
Strongly disagree/disagree (302)	25		1.0 (referent)
Agree (427)	25	.22	0.9 (0.6-1.4)
Strongly agree (343)	31		1.2 (0.8-1.8)

Note: Bivariate results present percentages of physicians in each predictor category (left-hand column) who reported that their patient population is considered underserved. Tests of association are by survey design adjusted χ^2 tests. These values are followed by multivariate odds ratios (ORs) with 95% confidence intervals (95% CIs), which are by survey design adjusted logistic regression tests that control for age, sex, primary specialty, ethnicity, region, foreign medical graduation, board certification, loan repayment, and working in an academic medical center (tests for sex and specialty also control for religious characteristics and intrinsic motivations).

* The n values vary slightly from those in Table 1 because of partial nonresponse.

† P <.05.

were accounted for by case-weighting. Response rates did not differ by age, region, or board certification, and we found no differences in intrinsic religiosity by response wave. 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." In addition, the proportion of respondents who reported religious affiliations as atheist, agnostic, or none declined slightly in later waves (P <.05). These latter findings suggest that nonreligious physicians may have been slightly more likely to respond than religious physicians.

Practice Among the Underserved

Twenty-six percent of physicians reported that their patient populations are considered underserved. As expected, compared with other physicians, they reported higher proportions of patients who were uninsured or recipients of Medicaid (mean, 48% vs 22%, P <.001) and were more than 3 times as likely to report working in a typical safety net setting (38% vs 11%, P <.001). They were also slightly younger (mean age, 48 vs 49 years, P = .03) and were more likely to work in an academic medical center (38% vs 25%, P <.001) and receive educational loan repayment (4.2% vs 0.4%, P <.001). They did not differ from other physicians with respect to ethnicity, region, foreign medical graduation, or board certification.

As displayed in Table 2, women were more likely than men to report practice among the underserved, although this difference did not persist after controlling for other covariates. The highest rates of practice among

Table 3. Primary Care Physicians (n = 374): Self-Reported Practice Among the Underserved, Stratified by Physician Sex, Religious Characteristics, and Intrinsic Motivations

	Practice Among the Underserved		
	Bivariate		Multivariate
Characteristics (n*)	%	*P*	OR (95% CI)
Sex			
Male (248)	30	.80	1.0 (referent)
Female (120)	31		0.7 (0.3-1.3)
Religious characteristics			
Spirituality			
Low (87)	20		1.0 (referent)
Moderate (164)	29	.01	2.0 (1.0-4.1)†
High (116)	39		3.0 (1.5-6.1)†
Intrinsic religiosity			
Low (110)	30		1.0 (referent)
Moderate (106)	22	.08	0.9 (0.4-1.7)
High (140)	36		1.4 (0.8-2.5)
Attendance at religious services			
Never (29)	40		1.0 (referent)
Once a month or less (157)	28	.43	0.6 (0.3-1.5)
Twice a month or more (180)	30		0.8 (0.3-1.8)
Religious affiliation			
None (37)	40		1.0 (referent)
Catholic (75)	32		0.7 (0.3-1.8)
Jewish (35)	22	.51	0.4 (0.2-1.3)
Other religion (58)	27		0.8 (0.3-2.1)
Protestant (162)	29		0.7 (0.3-1.5)
Religious beliefs influence medicine			
Strongly disagree/disagree (143)	27		1.0 (referent)
Agree (145)	23	<.001	0.9 (0.5-1.5)
Strongly agree (76)	49		3.0 (1.6-5.5)†
Intrinsic motivations for work			
Family emphasized service to poor			
Strongly disagree/disagree (77)	20		1.0 (referent)
Agree (181)	33	.08	1.8 (0.9-3.5)
Strongly agree (108)	33		1.9 (0.9-4.0)
Practice of medicine is a calling			
Strongly disagree/disagree (103)	25		1.0 (referent)
Agree (135)	25	.61	1.1 (0.6-2.0)
Strongly agree (123)	31		1.5 (0.8-2.7)

Note: Bivariate results present percentages of physicians in each predictor category who report their patient populations are considered underserved. Tests of association are by survey design adjusted χ^2 tests. These values are followed by multivariate odds ratios (ORs) with 95% confidence intervals (95% CIs), which are by survey design adjusted logistic regression tests that control for age, sex, ethnicity, region, foreign medical graduation, board certification, loan repayment, and working in an academic medical center (test for sex also controls for religious characteristics and intrinsic motivations).

* The n values do not all sum to 374 because of partial nonresponse.

† $P < .05$.

the underserved were reported by psychiatrists (40%), and the lowest were reported by medical subspecialists (21%). Yet, in multivariate analyses, no significant differences persisted between family physicians and physicians from any other specialty.

With respect to religious characteristics, physicians who were more likely to practice in underserved communities included those with high spirituality, those who strongly agreed that their religious beliefs influenced their practice of medicine, those with no religious affiliation, and those who grew up in families that strongly emphasized service to the poor. Physicians who were more religious in general (as measured by intrinsic religiosity or frequency of attendance at religious services) were not more likely to report care for the underserved, nor were those who viewed the practice of medicine as a calling.

As displayed in Table 3, these patterns of association were also found in analyses limited to the subpopulation of primary care physicians, although effect sizes and significance levels differed somewhat. Among the smaller subpopulation of family physician respondents (n = 158, data not shown), those who were highly spiritual were 4 times as likely as those with low spirituality to report practice among the underserved (45% vs 11%, $P = .005$), and those who strongly agreed that their religious beliefs influenced their practice of medicine were twice as likely as those who disagreed (46% vs 22%, $P = .04$). No other associations were statistically significant.

To test whether our findings were sensitive to the way that practice among the underserved was operationalized, we repeated the analyses using a different criterion measure. When we defined practice among the underserved as either (1) reporting practice in a typical safety net health center or (2) reporting that at least 50% of one's patients were uninsured or had Medicaid (30% of physicians met 1 of these 2 criteria), we found the same patterns of association as are shown in Table 2, although the only association that reached statistical significance was that with spirituality.

Although measures of general religiosity were not associated with practice among the underserved, physicians who were more religious by any measure were substantially more likely to report that their families emphasized service to the poor and that for them the practice of medicine was a calling (Table 4). Combining religious characteristics and measures of motivation had little effect on practice among

Table 4. Associations of Physicians' Religious Characteristics With 2 Intrinsic Work Motivations

Characteristics	Family Emphasized Service to Poor (Strongly Agree) (%)	*P* Value (χ^2)	Practice of Medicine is a Calling (Strongly Agree) (%)	*P* Value (χ^2)
All physicians (N = 1,144)	29	–	30	–
Spirituality				
Low	21		17	
Moderate	28	<.001	26	<.001
High	41		53	
Intrinsic religiosity				
Low	23		18	
Moderate	28	<.001	26	<.001
High	37		47	
Religious attendance				
Never	27		22	
Once a month or less	25	.01	24	<.001
Twice a month or more	34		38	
Religious affiliation				
None*	24		20	
Catholic	27		28	
Jewish	26	<.001	20	<.001
Protestant	28		37	
Other religion	48		35	
Religious beliefs influence medicine				
Strongly disagree/disagree	21		16	
Agree	27	<.001	26	<.001
Strongly agree	54		73	

Note: Percentages of physicians from each religious category who strongly agreed with each of the 2 measures of intrinsic motivation. For example, among those with low spirituality, 21% strongly agreed that their family emphasized service to the poor. Tests of association are by survey design adjusted χ^2 tests.

* Includes atheist, agnostic, and none.

the underserved. For example, among the subset of physicians from all specialties who reported a religious affiliation, had high intrinsic religiosity, attended religious services twice a month or more, and grew up in families that emphasized serving those with fewer resources (n = 264), 90% agreed that their religious beliefs influenced their practice of medicine, and 86% viewed their practice of medicine as a calling. The proportion who reported practice among the underserved (31%) did not differ significantly from that found among those with no religious affiliation, however (35%, $P = .48$).

DISCUSSION

In this large, cross-sectional survey of US physicians from all specialties, we found that religious physicians were not more likely to report practice among the underserved, although they were more likely to view their practice of medicine as a calling. In a prior study, we found that physicians who worked in faith-based urban community health centers explained their decision to work among the underserved as resulting from a distinctively religious calling.[22] The present study suggests that although physicians who practice among the underserved may explain their work in religious terms, religious physicians do not appear to disproportionately care for the underserved.

It is difficult to say why self-reported spirituality is associated with practice among the underserved, in part because spirituality is defined in many ways in the professional literature[33] and presumably also in the minds of physicians. The term *spirituality* has come to convey an aspiration toward connection to the sacred and to others,[33] and this aspirational aspect of spirituality resonates with earlier studies' findings that some physicians choose to practice among the underserved so they can live in a way that resonates with their deepest values and aspirations.[10,14,22] The association might also be partly explained by a trend in American religious history. During the late 19th and 20th centuries, a rift opened up between Christian denominations that were more theologically liberal and those that were more theologically conservative. Mainline and liberal Protestant churches came to promote what some religious historians have called "golden rule Christianity,"[38] whereby they emphasized concrete personal action to right social injustices (such as the misdistribution of physician resources) rather than emphasizing doctrinal orthodoxy. Those who today consider themselves spiritual, but not religious are more likely to have been formed by these mainline and liberal denominations than by their more conservative counterparts.[39] They may therefore be more likely to practice in underserved areas as an expression of commitment to social justice.

In a prior publication, we considered in some detail the relationship between calling and decisions to practice among the underserved.[22] That religious physicians are particularly likely to view their work as

a calling (regardless of their patient population) may suggest that the term calling has such religious overtones that religious physicians are much more likely than secular physicians to think of it as describing themselves. Or it may be that for religious physicians, the vocational meaning of medical practice comes from caring for the sick, whether rich or poor, or from interacting with patients regarding matters of the soul. In support of the latter hypothesis, we found recently that religious physicians are much more likely to report praying with patients and talking with patients about religious and spiritual concerns.[24]

This study has several limitations, the most important of which is that the criterion variable is a subjective, self-reported measure. Although the percentage of physicians in our study who said their patient populations are underserved (26%) is comparable to findings in other studies,[40,41] our results could be biased if physicians' religious characteristics lead them to be more or less likely to describe a given patient population as underserved, or if they lead them to overestimate or underestimate the percentage of their patients who are uninsured or recipients of Medicaid. In addition, although we did not find much evidence for bias in response to the overall study, it is theoretically possible that those who care for the underserved were less likely to respond to the study because of their heavy workload. If so, and if those physicians' religious characteristics differed from those of respondents, such biases could confound our findings. The study furthermore is not able to distinguish those who deliberately choose to practice among the underserved from those who merely end up there for other reasons, nor does it capture many other ways in which physicians may care for the poor. We did not ask physicians what percentage of their work was charity care, whether they volunteered or worked part time in underserved settings, or whether they had traveled to other countries to provide medical care to the poor. It is possible that religious physicians differed from nonreligious physicians on one or more of these measures.

Notwithstanding these limitations, this study does point to possible implications for medical educators, policy makers, and researchers. Rabinowitz and colleagues[41] have suggested that medical school admissions officials could increase the supply of physicians who care for the underserved by giving preference to candidates who possess characteristics known to predict a disposition toward such work. Admissions policies that favor certain religious or spiritual characteristics are not likely to be adopted for many reasons, but if they were, our findings would suggest that admissions officials should ignore both the general religiousness of candidates and their sense of calling to medicine, and should give preference to applicants who consider themselves very spiritual, who either have no religion or strongly agree that the religion they have influences their practice of medicine, or who agree that their families of origin emphasized service to the poor.

At this point, no one knows whether policies to select medical students based on these or any other characteristics would actually increase the supply of physicians to underserved populations. To begin to answer such questions, future research should include a longitudinal study (from medical school matriculation to postgraduate practice) of a large cohort of entering medical students, measuring religious characteristics, intrinsic motivations, and variables known to be associated with practice among the underserved. By measuring pertinent social and demographic variables at several points in time, such a study would provide insights into how physicians' religious and spiritual commitments, sense of calling, and other social and demographic factors interact over the course of medical training to lead some, but not others, to practice among the underserved.

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