the most productive researchers was the United States with 71.7% authors, followed by United Kingdom (7.5%), Canada (7.5%) and Germany (3.8%). In this list, no Latin American, African, or Asian researcher was included due to not meeting the inclusion criteria. The most common researchers worldwide were primary care physicians (family medicine, internal medicine, and community medicine) (24.5%), followed by nurses (20.8%), psychiatrists (11.3%), and social workers (9.4%). The United States comprised almost 70% of articles.

Discussion
According to the present study, the most productive researchers in the spirituality and health studies are primary care physicians. This vanguard shows the importance of integrating more humanistic and patient-centered medicine and treating the patient not only as a disease carrier but also as a biopsychosocial being. The merit for these findings could be related to the family medicine and internal medicine programs that incorporated this issue in their curricula, as well as medical school funding, the humanistic characteristic of these carriers, and the interest of family medicine journals in this field. We hope this study can motivate primary care physicians to continue the scientific study of spirituality and health.

Is It Possible to Sustain a Halt in the Decline of Medical Students’ Patient-Centered Beliefs?

To the Editor:
The progressive degradation of patient-centered beliefs among medical students is well documented. However, results from a recent study suggest that this decline may not be inevitable. Using an innovative curriculum that emphasized longitudinal contact with patients and faculty, as well as extensive mentoring and specially designed educational experiences, Krupat et al demonstrated that the degradation of patient-centered beliefs among third-year medical students can be temporarily halted. While the results of this study are informative and promising, it is unclear if such a halt can be sustained once students have left the influence of a targeted curriculum. The purpose of this study was to answer this question by measuring medical students’ patient-centered beliefs at the start and end of a similarly innovative third-year curricular experience, as well as shortly before they graduated from medical school.

Methods
Following approval by the institutional review board, we retrospectively examined de-identified student data on patient-centered beliefs from the class of 2009 at one campus of a three-campus state medical school located in the southwest United States. This cohort of 47 students participated in a traditional third- and fourth-year clinical curriculum; however, during their third year (i.e., 2007–2008), they also took part in an innovative clinical experience known as the Continuity Clinic Experience (CCE). CCE required the students to meet for two half days per month in an assigned departmental clinic (family medicine, internal medicine, obstetrics-gynecology, or psychiatry). The clinic assignments—as well as an assignment to a faculty mentor within the department—were for the entire academic year (September through June). During each of the two half days, students participated in both clinical and didactic activities. Although each department was free to structure these activities according to its clinical needs, all departments shared a set of common educational objectives, namely, longitudinal contact with patients and faculty mentors, professional development in clinical and communication skills, and extended discussions and didactic teaching on medical and psychosocial issues, communication, and professionalism.

The students’ patient-centered beliefs were assessed at three times: in the third year at the beginning of CCE (T1) and at the end of CCE as part of a course evaluation (T2) and in the fourth year shortly before graduation as part of a post-Match survey (T3). The instrument used to assess patient-centered beliefs was the Patient-Practitioner Orientation Scale (PPOS), a well-validated, 18-item, Likert format, self-report inventory that measures patient-centered beliefs across two subscales: sharing (power and information sharing in a medical visit) and caring (consideration of patients’ feelings, lifestyle, and expectations in a medical visit). Scores on the PPOS range from 1–6, with higher scores indicating a more patient-centered orientation.

References
Results
Of the 47 students, PPOS scores were available for 39 (83%) at T1 and T2 and 21 (45%) at T3. Means for the total PPOS score, as well as the sharing and caring subscales scores, are presented in Table 1. Repeated measures ANOVA revealed no significant differences between T1 and T2 on the PPOS total, sharing, or caring scores; however, a comparison of T1 and T3 scores revealed significant declines in all three scores ($P<.000$).

Discussion
Consistent with Krupat and colleagues’ findings, the results of our study suggest that a similarly innovative curriculum can indeed halt the progressive decline in patient-centered beliefs among third-year medical students. However, our study adds two additional insights. First, given that our curricular innovation was similar, but not identical to, the one used by Krupat et al, our results suggest that medical educators have some freedom in how they implement curricular innovations that promote patient-centered beliefs. Although longitudinal contact with patients and faculty mentors is a factor common to both innovations, future research is needed to determine if this factor alone is enough to halt the progressive decline of patient-centered beliefs.

Second, the significant drop in PPOS scores between T1 and T3 suggests that time-limited curricular interventions for third-year medical students may not be enough to completely halt the erosion of patient-centered beliefs or to sustain the benefits such interventions provide. This finding is not surprising given the well-documented negative influence of the hidden curriculum on patient-centered beliefs. Perhaps innovative educational interventions such as ours or that of Krupat et al need to be extended throughout the fourth year to combat the deleterious effects of the hidden curriculum; however, this too is a question for future research.

Because of the small numbers in our study and lack of a control group, the results of our study should be interpreted with caution. Nevertheless, our study offers important clues on the longstanding problem of progressive degradation of patient-centered beliefs among medical students.

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Table 1
Mean Scores on the Patient-Practitioner Orientation Scale

<table>
<thead>
<tr>
<th></th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total score</td>
<td>4.47</td>
<td>4.46</td>
<td>2.78</td>
</tr>
<tr>
<td>Caring score</td>
<td>4.54</td>
<td>4.58</td>
<td>2.59</td>
</tr>
<tr>
<td>Sharing score</td>
<td>4.41</td>
<td>4.35</td>
<td>2.96</td>
</tr>
</tbody>
</table>

T1—At the beginning of Continuity Clinic Experience
T2—At the end of Continuity Clinic Experience
T3—Shortly before graduating medical school

References

This Letters to the Editor column was edited by Joseph Scherger, MD, MPH.