# Spirituality, Religiosity, and Health: a Comparison of Physicians' Attitudes in Brazil, India, and Indonesia

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#### Abstract

*Background* One of the biggest challenges in the spirituality, religiosity, and health field is to understand how patients and physicians from different cultures deal with spiritual and religious issues in clinical practice.

*Purpose* The present study aims to compare physicians' perspectives on the influence of spirituality and religion (S/R) on health between Brazil, India, and Indonesia.

*Method* This is a cross-sectional, cross-cultural, multicenter study carried out from 2010 to 2012, examining physicians' attitudes from two continents. Participants completed a self-rated questionnaire that collected information on sociodemographic characteristics, S/R involvement, and perspectives concerning religion, spirituality, and health. Differences between physicians' responses in each country were examined using chi-squared, ANOVA, and MANCOVA.

*Results* A total of 611 physicians (194 from Brazil, 295 from India, and 122 from Indonesia) completed the

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survey. Indonesian physicians were more religious and more likely to address S/R when caring for patients. Brazilian physicians were more likely to believe that S/R influenced patients' health. Brazilian and Indonesians were as likely as to believe that it is appropriate to talk and discuss S/R with patients, and more likely than Indians. No differences were found concerning attitudes toward spiritual issues.

*Conclusion* Physicians from these different three countries had very different attitudes on spirituality, religiosity, and health. Ethnicity and culture can have an important influence on how spirituality is approached in medical practice. S/R curricula that train physicians how to address spirituality in clinical practice must take these differences into account.

Keywords Medical education  $\cdot$  Physician attitudes  $\cdot$  Religion and medicine  $\cdot$  Spirituality

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# Introduction

Many articles have been published in peer-reviewed journals on the connection between religion, spirituality, and health [1]. The majority of studies have shown that those who are more involved in spiritual or religious (S/R) activities have better physical and mental health, better quality of life, and lower mortality [1–3].

In view of this evidence, many professional organizations, such as the American College of Physicians, the American Medical Association, the American Nurses Association, and the Association of American Medical Colleges, have come to officially recognize that addressing the spiritual needs of patients is an important component of health care and that should be a part of clinical practice [4, 5].

In fact, several studies have shown patients want to discuss these issues with their physicians, and a significant proportion of physicians and medical students acknowledge that assessing and addressing spiritual needs related to illness are important [6–9]. However, few health professionals have had specific training on S/R in medical school and seldom assess and address the spiritual needs of patients routinely [9–11]. In addition, most S/R studies are from Western countries (North America and Europe) where Christian-majority populations predominate. Research on attitudes of physicians from countries where most of the population is Muslim, Hindu, or Buddhist is rare [1, 12, 13].

Within this context, one of the biggest challenges is to understand how patients and physicians from different cultures deal with this issue. According to Curlin et al. [14], "little is known about the ways in which physicians' religious commitments affect the ways they relate to, and provide care to patients."

The ethnicity and/or cultural background of physicians may be associated with their willingness to engage in such discussions. Several studies have shown that religious background of physicians has an important influence on medical decisions related to end-of-life issues [15], ethical issues [16], and the physician-patient relationship [17]. For example, in a recent study of 2000 US physicians, Curlin et al. [15] found that those who were Muslim or Hindu were more likely to object to physician-assisted suicide and terminal sedation and less likely to feel they should disclose information. However, most studies addressing these issues have been conducted in non-Christian physicians. Furthermore, few studies have assessed the differences between countries concerning spiritual/religious issues and their impact on health.

Understanding such differences and the possible barriers could foster the integration of S/R in medicine globally and could help the implementation of more universal S/R training for health professionals that take into account their culture and religious backgrounds. Therefore, the present study seeks to compare physicians' perspectives from three very different cultural/religious environments on the influence of S/R on health, including their religious backgrounds and practices, their willingness and preparedness to address S/R issues, and the role that S/R plays in their clinical practice and the medical school curriculum.

# Methods

This cross-sectional, cross-cultural, multi-center study was carried out from 2010 to 2012 in three economically emerging countries from two continents.

Brazil is a highly religious South American country, in which only 5 % of Brazilians report having no religion, 83 % consider religion very important in their lives, and 37 % attend religious services at least once a week. The most frequent religious affiliations are Christian—Catholicism (68 %), Protestant/Evangelicals (23 %), and Kardecist Spiritism (2.5 %) [18]. The allopathic physician density in the country (general practitioners and specialists) is estimated to be 18 physicians per 10,000 population [19].

India is a culturally diverse Asian country whose population is affiliated with four major religious groups: Hindus (80.5 %), Muslims (13.4 %), Christians (2.3 %), and several others including Sikhs, Buddhists, and Jains (3.8 %) [20]. For a population of 1.2 billion, India has approximately six allopathic physicians and two "complementary and alternative medicine" physicians per 10,000 population [21].

Indonesia is also a south Asian country that is 87.2 % Muslim, 7.0 % Protestants, 2.9 % Catholics, 2.7 % Hindus, 0.7 % Buddhists, 0.1 % Khong Hu Chus, 0.1 % others, and 0.4 % unknown [22]. The physician density in Indonesia country is estimated to be six allopathic physicians per 10,000 population [23].

# Procedures

Registered physicians were enrolled into the study from the following settings: Marília University Hospital, Faculty of Medicine, Marilia Medical School in Brazil; Goa University Medical College, Sweekaar-Upkaar Rehabilitation Institute for the Handicapped, BRKR Government Ayurvedic Medical College, Gandhi Institute of Yoga and Naturopathy, Central Research Institute of Unani Medicine, JSPS Government Homeopathic Medical College in Hyderabad, and the National Institute of Siddha Medical Sciences in Chennai, India; and the Faculty of Medicine, University of Airlangga in Surabaya, Indonesia.

Participants completed a self-administered questionnaire adapted and expanded from previous studies in the USA conducted by Curlin et al. [14, 24, 25]. The questionnaire collected the following information: sociodemographic data (age, gender, and country (Table 1)); religious/spiritual characteristics, including religious affiliations and religious and spiritual beliefs; and perspectives on religion, spirituality, and health, including observations and interpretations of the influence of S/R on health.

The questionnaire was then grouped in the following aspects (subscales):

Attitudes toward spiritual issues (Cronbach's alpha=
0.750) using the following questions: "(1) I listen carefully and empathetically," "(2) I try to change the subject in a tactful way," "(3) I encourage patients in their own religious/spiritual beliefs and practices," "(4) I respectfully share my own religious ideas and experiences," and "(5) I pray with the patient," with the following possible answers: never, rarely, sometimes, often, and always. Scores range from 5 to 25 and higher values indicate more positive attitudes toward spiritual issues.

- Opinions/influence of S/R on health (Cronbach's alpha= 0.649) using the following questions: "Considering your experience, how often do you think religion/ spirituality...": "(1)...helps patients to cope with and endure illness and suffering," "(2)...causes guilt, anxiety, or other negative emotions that lead to increased patient suffering," "(3)...gives patients a positive, hopeful state of mind," "(4)...leads patients to refuse, delay, or stop medically indicated therapy," "(5)...helps to prevent "hard" medical outcomes like heart attacks, infections, or even death," with the following possible answers: never, rarely, sometimes, often, and always. Scores range from 5 to 25, and higher values indicate more positive opinions regarding the influence of S/R on health.
- Frequency with which spirituality is addressed (Cronbach's alpha=0.872) using the following questions:
  "in the following clinical situations, how often do you inquire about religious/spiritual issues?: When a patient

Table 1	Sociodemographi	c, religious, and	l spiritual c	haracteristics
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	India	Brazil	Indonesia	Chi-squared	p value
Gender					
Male	121 (42.9 %)	145 (74.7 %)	55 (45.8 %)		
Female	161 (57.1 %)	49 (25.3 %)	65 (54.2 %)	50.76	< 0.001
Age <sup>a</sup>	32.5 (10.7)	37.7 (11.0)	29.1 (3.8)	29.11 <sup>a</sup>	< 0.001
What is your religious affiliation?					
None	7 (2.4 %)	9 (5.1 %)	2 (1.6 %)		
Other	10 (3.4 %)	0 (0.0 %)	7 (5.7 %)		
Hindu	203 (68.8 %)	0 (0.0 %)	2 (1.6 %)		
Muslim	39 (13.2 %)	0 (0.0 %)	104 (85.2 %)		
Christian	36 (12.2 %)	166 (94.9 %)	7 (5.7 %)	693.70	< 0.001
To what extent do you consider yourself a religious person? Would you say you are .					
Very/moderately religious	209 (71.8 %)	133 (68.6 %)	112 (91.8 %)		
Slightly religious/not religious at all	82 (28.2 %)	61 (31.4 %)	10 (8.2 %)	24.09	< 0.001
To what extent do you consider yourself a spiritual person? Would you say you are					
Very/moderately spiritual	196 (67.1 %)	173 (89.2 %)	107 (87.7 %)		
Slightly spiritual/not spiritual at all	96 (32.9 %)	21 (10.8 %)	15 (12.3 %)	41.30	< 0.001
Think about how you try to understand and deal with major problems in your life: To what extent is each of the following in volved in the way you cope?					
I try to make sense of the situation and decid what to do without relying on God	e				
A great deal/somewhat	143 (53.2 %)	138 (71.1 %)	37 (31.9 %)		
A little/not at all	126 (46.8 %)	56 (28.9 %)	79 (68.1 %)	45.77	< 0.001
I look to God for strength, support and guida	nce				
A great deal/somewhat	233 (82.3 %)	156 (80.4 %)	117 (97.5 %)		
A little/not at all	50 (17.7 %)	38 (19.6 %)	3 (2.5 %)	19.20	< 0.001

There were 611 total respondents, but this varies slightly by outcome due to partial nonresponse

<sup>a</sup> ANOVA test

...," "(1)...presents with a minor illness or injury," "(2)...faces a frightening diagnosis or crisis," "(3)... faces the end of life," "(4)...suffers from anxiety or depression," "(5)...faces an ethical dilemma," with the following possible answers: never, rarely, sometimes, often, and always. Scores range from 5 to 25 and higher values indicate more likeliness to address S/R when caring for patients.

- Religious characteristics (Cronbach's alpha=0.738) using the following questions: "(1) I feel a deep sense of responsibility for reducing pain and suffering in the world," "(2) The family in which I was raised emphasized the importance of serving those with fewer resources," "(3) For me, the practice of medicine is a calling," "(4) My religious beliefs influence my practice of medicine," "(5) I find it challenging to remain faithful to my religion in my work as a physician," "(6) My experiences as a physician have caused me to question my religious beliefs," "(7) I try hard to carry my religious beliefs over into all my other dealings in life," "(8) My whole approach to life is based on my religion," with the following possible answers: strongly agree, agree, disagree, and strongly disagree. Scores range from 8 to 32 and higher values indicate more religious opinions.
- Appropriateness of addressing spiritual issues (Cronbach's alpha=0.664) using the following questions:
  "(1) In general is it appropriate or inappropriate for a physician to discuss religious/spiritual issues when a patient brings them up?", "(2) In general, is it appropriate or inappropriate for a physician to inquire about a patient's religion/spirituality?," with the following possible answers: always appropriate, usually appropriate, usually inappropriate, and always inappropriate. Scores range from 2 to 8 and higher values indicate more appropriate to talk and discuss S/R with patients.

#### **Statistical Analysis**

Completed surveys were collected at each site, entered into an Excel spreadsheet, and analyzed using SPSS version 21.0 (SPSS Inc.). Comparisons between the three countries (Brazil, Indonesia, and India) on demographic variables were analyzed with ANOVA and  $\chi^2$ . Significant differences were found among the groups for age, gender, and religion (age: F[2, 579]=29.116, p<0.001; gender:  $\chi^2=50.76, p<0.001$ ; religion:  $\chi^2=693.70, p<0.001$ ), so these three variables served as covariates in following analyses. A MANCOVA was used to assess group differences on the five S/R opinions and attitudes subscales. Univariate tests were used if the MANCOVA was statistically significant. Bonferroni-corrected pairwise comparisons were used to further evaluate differences

between groups if the univariate test was statistically significant. A p < 0.05 was considered significant.

Participants gave written informed consent and the study was approved by the ethics committee of Marilia Medical School, Brazil; Institutional Review Boards and the Commissioner of AYUSH (acronym for Ayurveda, Yoga-Naturopathy, Unani, Siddha, and Homeopathy) and the national governing body for TCAM Institutes, India; and the ethics committee of the Faculty of Medicine, University of Airlangga at Surabaya, Indonesia.

# Results

The final sample consisted of 611 physicians (194 from Brazil, 295 from India, and 122 from Indonesia). The response rate varied from 95.0 % in Brazil (single center) to 49.1 % in India (multiple centers). The majority of physicians in India (57.1 %) and in Indonesia (54.2 %) were female, compared to the majority in Brazil who were male (74.7 %) (p<0.001). Brazilian physicians were older (37.7 years) than Indian (32.5 years) or Indonesian (29.1 years) physicians (p<0.001) (Table 1).

The religious affiliation of Indian physicians was Hindu (68.8 %) followed by Muslim (13.2 %); for Brazilian physicians, it was Christian (94.9 %) followed by no religious affiliation (5.1 %); and for Indonesian physicians, it was Muslim (85.2 %) followed by Christian (5.7 %). Indonesian physicians were more likely to considered themselves religious compared to Brazilian physicians. Brazilian physicians were more likely to say they were spiritual compared to Indian physicians. Almost all Indonesian physicians (97.5 %) looked to God for strength, support, and guidance, followed by 82.3 % of Indian physicians and 80.4 % of Brazilian physicians reported that they relied on God (68.1 %) when making important decisions, compared to 46.8 % of Indians physicians and 28.9 % of Brazilian physicians (p < 0.001).

Table 2 describes physicians' attitudes regarding the influence of S/R on patients' health. Indonesian physicians (compared to Brazilian and Indian) were more likely to believe that S/R had an influence on patients' health and this influence was positive. The majority of Indonesian (66.4 %) and Brazilian (60.3 %) physicians said that they inquired about patients' S/R issues, whereas fewer Indian physicians acknowledged this (49.8 %). However, Indian physicians who did so said they inquired more often. Regardless of country, most (95.9 % of Brazilian, 82.6 % of Indonesian and 72.9 % of Indian physicians) reported that they had never had any formal training on assessing or addressing S/R in medicine.

The overall MANCOVA (Table 3) was statistically significant (F[10, 726]=27.12, p<0.001), indicating that S/R subscales were significantly different across the countries.

Table 2 Physicians' opinions regarding the influence of spirituality and religiousness (S/R) on patients' health and its appropriateness<sup>a</sup>

	India	Brazil	Indonesia	Chi-square	p value
Overall, how much influence do yo think religion/spirituality has on p					
Very much/much					
Some	189 (64.9 %)	107 (55.2 %)	105 (86.1 %)		
A little/very little or none	81 (27.8 %)	53 (27.3 %)	16 (13.1 %)		
	21 (7.2 %)	34 (17.5 %)	1 (0.8 %)	44.36	< 0.001
Is the influence of religion/spirituali on health generally positive or ne					
Generally positive	192 (67.8 %)	135 (70.7 %)	99 (81.1 %)		
Generally negative	7 (2.5 %)	18 (9.4 %)	4 (3.3 %)		
Equally positive and negative	84 (29.7 %)	38 (19.9 %)	19 (15.6 %)	23.10	< 0.001
Do you ever inquire about patients' religious/spiritual issues?					
Yes	128 (49.8 %)	117 (60.3 %)	73 (66.4 %)		
No	129 (50.2 %)	77 (39.7 %)	37 (33.6 %)	10.18	0.006
How often do you inquire?					
Rarely/sometimes	92 (74.8 %)	104 (88.9 %)	66 (86.8 %)		
Often/always	31 (25.2 %)	13 (11.1 %)	10 (13.2 %)	9.49	0.009
Overall, do you think the amount of time you spend addressing religio					
Too little	10 (3.7 %)	33 (17.0 %)	8 (6.8 %)		
The right amount	132 (48.7 %)	119 (61.3 %)	50 (42.7 %)		
Too much	129 (47.6 %)	42 (21.6 %)	59 (50.4 %)	52.96	< 0.001
Have you had any formal training regarding religion/spirituality in r	nedicine?				
Yes	80 (27.1 %)	8 (4.1 %)	21 (17.4 %)		
No	215 (72.9 %)	186 (95.9 %)	100 (82.6 %)	42.19	< 0.001

There were 611 total respondents, but this varies slightly by outcome due to partial nonresponse

<sup>a</sup> Those who marked "Does not apply" are not included in the denominator

Follow-up univariate tests indicated that opinions (p < 0.001), frequency p < 0.001), appropriateness (p < 0.001) and religious

Table 3 Countries' differences assessed by MANCOVA

	India	Brazil	Indonesia	F	p value
Attitudes	15.72	15.41	16.02	0.196	0.289
Opinions/influence <sup>a</sup>	15.00	17.86	16.45	32.56	< 0.001
Frequency <sup>b</sup>	16.91	16.04	21.17	24.29	< 0.001
Religious opinions <sup>c</sup>	22.43	20.01	24.24	46.63	< 0.001
Appropriateness <sup>d</sup>	5.43	6.05	6.31	10.26	< 0.001

Controlled for gender, age, and religion

<sup>a</sup> Brazil × India (p<0.001), Brazil × Indonesia (p<0.001), India × Indonesia (p<0.001)

 $^{\rm b}$ Brazil × India (0.496), Brazil × Indonesia (<br/>  $p{<}0.001),$ India × Indonesia ( $p{<}0.001)$ 

 $^{\rm c}$ Brazil × India (<0.001), Brazil × Indonesia ( $p{<}0.001$ ), India × Indonesia ( $p{=}0.002$ )

 $^{\rm d}$ Brazil × India (<0.001), Brazil × Indonesia (<br/>  $p{=}0.152$ ), India × Indonesia (<br/>  $p{<}0.001$ )

opinions (p < 0.001) were statistically different among groups. Attitudes were not significant (p=0.289).

Pair-wise comparisons indicated

- Opinions/influence: Brazilian physicians were more likely to believe that S/R influenced patients' health than Indians (*p*<0.001) and Indonesians (*p*<0.001), and Indonesians physicians were more likely to believe that S/R influenced patients' health than Indians (*p*<0.001).</li>
- Frequency with which spirituality is addressed: Indonesian physicians were more likely to address S/R when caring for patients than Brazilians (p<0.001) and Indians (p<0.001), and Brazilian physicians were as likely as Indian physicians to address S/R (p=0.496).
- Religious opinions: Indonesian physicians had more religious opinions than Brazilians (p<0.001) and Indians (p=0.002), and Indians had more religious opinions than Brazilians (p<0.001).
- Appropriateness of addressing spiritual issues: Brazilian and Indonesians were as likely as to believe that it is

appropriate to talk and discuss S/R with patients, and more likely than Indians (p < 0.001).

# Discussion

We found that Indonesian physicians were more religious and more likely to address S/R when caring for patients. Brazilian physicians were more likely to believe that S/R influenced patients' health. Likewise, Brazilian and Indonesians were as likely as to believe that it is appropriate to talk and discuss S/R with patients, and more likely than Indians. However, no differences were found concerning attitudes toward spiritual issues.

Although some of these findings may appear contradictory, such as the fact that Indonesian physicians considered themselves more religious than Brazilian physicians, whereas Brazilian physicians considered themselves more spiritual, this can likely be explained by the way spirituality and religiosity have come to be defined. According to Koenig et al. [26], spirituality "may (or may not) lead to or arise from the development of religious rituals and the formation of community." Elsewhere, Puchalski et al. [27] defined spirituality as "the aspect of humanity that refers to the way individuals seek and express meaning and purpose and the way they experience their connectedness to the moment, to self, to others, to nature, and to the significant or sacred." Based on these views, a physician who considered him/herself spiritual might not necessarily be involved in a formal religion.

In general, our study had a different approach comparing to other studies. We have compared physicians of different countries and other authors have compared physicians of different religions. Although this is a different research questions, previous literature can help to understand our findings. Curlin et al. [14] found that Hindu physicians in the USA had lower intrinsic religiosity and tended to believe that religious beliefs had less influence on their practice of medicine compared to Muslim and Christian physicians. In their study of 1800 obstetrician–gynecologists, Lawrence et al. [28] found that Muslim physicians were more likely to object to artificial insemination using donor sperm and to in vitro fertilization using donor sperm, compared with non-Evangelical Protestants.

In a study of 3733 UK medical practitioners, Seale [16] found that specialists in care of the elderly were more likely to be Hindu or Muslim than other doctors, whereas palliative care specialists were more likely to be Christian. He also found religious backgrounds were responsible for different attitudes toward end-of-life care. Likewise, in a study of the views of 254 university students from India and 150 from Kuwait that examined the ethics of ending the lives of severely neurologically impaired newborns, Kamble et al. [29] found that Kuwaiti students (the majority of whom were Muslim) were more likely to oppose ending the life of a newborn under

any condition, whereas Indian students (Hindu majority) were more likely to favor it and judge it acceptable depending on the circumstances.

These religious and cultural differences in attitude and practice have important implications for societies that are rapidly becoming multicultural (i.e., Europe and North America). Having information about different cultural groups and their attitudes toward and skill in dealing with cultural diversity, then, has become increasingly necessary [30].

In the field of S/R, cultural and religious aspects seem particularly important. Physicians often have difficulty knowing how to engage patients in meaningful discussions about S/R in order not to offend them [31]. In a recent study with 3630 Brazilian medical students [10], the most common reasons for not addressing S/R issues were "fear of imposing religious beliefs" (47.5 %) and "fear of offending patients" (35.8 %).

Thus, S/R training in medical school should take into account not only patients' religious views and how this could influence their health, which are very important for the development of a S/R curriculum, but also the religious and cultural background of physicians, which could impact the addressing of these issues in clinical practice.

According to Puchalski [32], one of the key components of physician training in S/R is the review of major religious traditions and the addressing of specific aspects of religious or cultural traditions that may affect health care choices and coping skills. In addition, physicians should be able to discuss the relationships between spirituality, religious beliefs, and cultural traditions [4]. The results of the present study underscore the importance of creating a globally oriented curriculum for physicians in S/R that respects different cultures and traditions.

Our findings have important implications for development of a globally oriented S/R curriculum in other ways as well. For instance, only 3–17 % of physicians felt that they spent too little time with S/R issues, suggesting that the majority of physicians did not want to deal with such issues more than they did currently. Since these physicians did not have formal training on how to assess and address S/R (varying from 72.9 to 95.9 %), they were not used to addressing these issues in clinical practice (varying from 49.8 to 66.4 %). Such information could help educators developing medical curriculum on S/R.

Recent efforts have attempted to evaluate the role of S/R in patient care. In 2014, the US "National Competencies in Spirituality and Health" gathered a group of faculty from seven US medical schools together and reported the following competencies: to apply knowledge of health care systems to advocate spirituality in patient care; to acquire the foundational knowledge necessary to integrate spirituality in patient care; to integrate spirituality into routine clinical practice; to establish compassionate presence and action with patients, families, and colleagues; to incorporate spirituality in professional and personal development; and to communicate with patients, families, and health care team about spiritual issues. Likewise, Puchalski et al. [33], reporting on the results of an international conference, proposed recommendations for health education, such as developing competency standards for health professionals that address attitudes, skills, and behaviors; creating curricula that cover the definitions of spiritual care, self-awareness, cultural sensitivity, assessment and skills; and conducting research to determine the adequacy of existing curricula, among others.

Clearly, research in medical education and curriculum development in spirituality and health are needed to further investigate the role of spirituality and health globally and how best to address this important issue in medical education and clinical care outside of North America [5]. Based on our findings, we believe there is a need to understand spirituality, religiosity and their influence on health in a more broad way, valuing and including patients' beliefs, cultural aspects, diversity and local particularities.

# Limitations

This was not a nationwide study and may not apply to physicians practicing in more rural areas of the countries examined. Furthermore, the questions asked in this survey may not have completely captured the ways in which S/R might have been expressed by the physicians here [14]. Finally, we opted to compare countries and not religious affiliations. Although we agree that religious affiliations are important in such comparisons, we believe that cultural aspects are even more important. For instance, Muslims across countries can differ in their levels of religious commitment, openness to multiple interpretations of their faith, and acceptance of various sects and movements [34]. Thus, comparing different cultures is important to understand what role S/R plays in health care in different societies.

# Conclusion

The present study reveals that physicians from different cultures and geographical regions may have very different attitudes and practices regarding integrating S/R into patient care. These findings underscore the important role that ethnic and cultural differences can have on medical practice. Thus, we would advocate for the development of a global S/R training curriculum that takes into account these particularities.

**Conflict of Interest** The authors declare that there are no conflicts of interest.

Human and Animal Rights and Informed Consent Authors conformed to the Helsinki Declaration concerning human rights and informed consent and that they followed correct procedures concerning treatment of humans and animals in research.

#### References

- Lucchetti G, Lucchetti ALG, Espinha DCM, Oliveira LR, Leite JR, Koenig HG. Spirituality and health in the curricula of medical schools in Brazil. BMC Med Educ. 2012;12(1):78.
- Lucchetti G, Lucchetti AL, Koenig HG. Impact of spirituality/ religiosity on mortality: comparison with other health interventions. Explore (NY). 2011;7(4):234–8.
- Bonelli RM, Koenig HG. Mental disorders, religion and spirituality 1990 to 2010: a systematic evidence-based review. J Relig Health. 2013;52(2):657–73.
- 4. Puchalski CM, Blatt B, Kogan M, Butler A. Spirituality and health: the development of a field. Acad Med. 2014;89(1):10–6.
- Lucchetti G, Lucchetti ALG, Puchalski CM. Spirituality in medical education: global reality? J Relig Health. 2012;51(1):3–19.
- Curlin FA, Sellergren SA, Lantos JD, Chin MH. Physicians' observations and interpretations of the influence of religion and spirituality on health. Arch Intern Med. 2007;167(7):649–54.
- Ramakrishnan P, Dias A, Rane A, Shukla A, Lakshmi S, Ansari BK, et al. Perspectives of Indian Traditional and Allopathic Professionals on Religion/Spirituality and its role in medicine: basis for developing an integrative medicine program. J Relig Health. 2013.
- Ramakrishnan P, Rane A, Dias A, Bhat J, Shukla A, Lakshmi S, et al. Indian Health Care Professionals' Attitude Towards Spiritual Healing and its role in alleviating stigma of psychiatric services. J Relig Health. 2014.
- Ehman JW, Ott BB, Short TH, Ciampa RC, Hansen-Flaschen J. Do patients want physicians to inquire about their spiritual or religious beliefs if they become gravely ill? Arch Intern Med. 1999;159(15): 1803–6.
- Lucchetti G, de Oliveira LR, Koenig HG, Leite JR, Lucchetti AL. Medical students, spirituality and religiosity-results from the multicenter study SBRAME. BMC Med Educ. 2013;13:162.
- Lucchetti G, Lucchetti AL, Espinha DC, de Oliveira LR, Leite JR, Koenig HG. Spirituality and health in the curricula of medical schools in Brazil. BMC Med Educ. 2012;12:78.
- 12. Gorsuch RL. Measurement: the boon and bane of investigating religion. Am Psychol. 1984;39(3):228–36.
- Lucchetti G, Lucchetti ALG. Spirituality, religion and health: over the last 15 years of field research (1999–2013). Int J Psychiatry Med. 2014;48(3):199–215.
- Curlin FA, Lantos JD, Roach CJ, Sellergren SA, Chin MH. Religious characteristics of US physicians. J Gen Intern Med. 2005;20(7):629–34.
- Curlin FA, Nwodim C, Vance JL, Chin MH, Lantos JD. To die, to sleep: US physicians' religious and other objections to physicianassisted suicide, terminal sedation, and withdrawal of life support. Am J Hosp Palliat Med. 2008;25(2):112–20.
- 16. Seale C. The role of doctors' religious faith and ethnicity in taking ethically controversial decisions during end-of-life care. J Med Ethics. 2010;36(11):677–82.
- Hebert RS, Jenckes MW, Ford DE, O'Connor DR, Cooper LA. Patient perspectives on spirituality and the patient-physician relationship. J Gen Intern Med. 2001;16(10):685–92.
- Moreira-Almeida A, Pinsky I, Zaleski M, Laranjeira R. Religious involvement and sociodemographic factors: a Brazilian national survey. Rev Psiquiatria Clínica. 2010;37(1):12–5.
- Horovitz DDG, de Faria Ferraz VE, Dain S, Marques-de-Faria AP. Genetic services and testing in Brazil. J community Genet. 2013;4(3):355–75.
- Indian Census 2011 [cited 2014 February 2]. Available from: http:// censusindia.gov.in/Census\_And\_You/religion.aspx.
- Rao KD, Bhatnagar A, Berman P. So many, yet few: human resources for health in India. Hum Resour Health. 2012;10(1):19.

- 22. Sensus Penduduk 2010. Penduduk Menurut Wilayah dan Agama yang Dianut [Population by Region and Religion] Jakarta, Indonesia: Badan Pusat Statistik; 2010 [cited 2014 February 24]. Available from: http://sp2010.bps.go.id/index.php/site/tabel?tid= 321&wid=0.
- 23. Fulton JF. History of medical education. Br Med J. 1953;2(4834): 457–61.
- Curlin F, Lawrence R, Odell S, Chin M, Lantos J, Koenig H, et al. Religion, spirituality, and medicine: psychiatrists' and other physicians' differing observations, interpretations, and clinical approaches. Am J Psychiatr. 2007;164(12):1825–31.
- Curlin FA, Chin MH, Sellergren SA, Roach CJ, Lantos JD. The association of physicians' religious characteristics with their attitudes and self-reported behaviors regarding religion and spirituality in the clinical encounter. Med Care. 2006;44(5):446–53.
- Koenig HG, McCullough ME, Larson DB. Handbook of religion and health. New York: Oxford University Press; 2001.
- Puchalski C, Ferrell B, Virani R, Otis-Green S, Baird P, Bull J, et al. Improving the quality of spiritual care as a dimension of palliative care: the report of the consensus conference. J Palliat Med. 2009;12(10):885–904.

- Lawrence RE, Rasinski KA, Yoon JD, Curlin FA. Obstetriciangynecologists' beliefs about assisted reproductive technologies. Obstet Gynecol. 2010;116(1):127–35.
- 29. Kamble S, Ahmed R, Sorum PC, Mullet E. The acceptability among young Hindus and Muslims of actively ending the lives of newborns with genetic defects. J Med Ethics. 2014;40(3): 186–91.
- Seeleman C, Suurmond J, Stronks K. Cultural competence: a conceptual framework for teaching and learning. Med Educ. 2009;43(3):229–37.
- Sloan RP, Bagiella E, VandeCreek L, Hover M, Casalone C, Jinpu Hirsch T, et al. Should physicians prescribe religious activities? N Engl J Med. 2000;342(25):1913–6.
- Puchalski CM, Larson DB. Developing curricula in spirituality and medicine. Acad Med J Assoc Am Med Coll. 1998;73(9):970–4.
- Puchalski CM, Vitillo R, Hull SK, Reller N. Improving the spiritual dimension of whole person care: reaching national and international consensus. J Palliat Med. 2014;17(6):642–56.
- Barrows HS. An overview of the uses of standardized patients for teaching and evaluating clinical skills. AAMC Acad Med J Assoc Am Med Coll. 1993;68(6):443–51. discussion 51-3.