

Original Article

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The effectiveness of spiritual care training on medical students' self-reported competencies: A quasi-experimental study

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Abstract

Objectives. To evaluate the effectiveness of spiritual care training on medical students' self-reported competencies.

Methods. This is a quasi-experimental (controlled and non-randomized) study including 115 Brazilian medical students. Participants were enrolled into 2 groups: fourth-year students ($n = 64$) who received spiritual care training and sixth-year students ($n = 51$) who did not receive this training – control group (i.e., usual teaching). Participants answered a self-reported Spiritual Care Competence Scale. Comparisons between groups were performed and effect sizes were reported.

Results. Providing a spiritual care training resulted in significantly higher self-reported scores for the dimensions of “Assessment” ($d = 0.99$), “Improvement of care” ($d = 0.69$), “Counseling” ($d = 0.88$), “Referral” ($d = 0.75$), and “Total Spiritual Care” ($d = 1.044$) as compared to the control group. Likewise, 21 out of 27 items of the Spiritual Care Competence Scale were significantly higher for the intervention group, presenting effect sizes (d) ranging between 0.428 and 1.032.

Significance of results. Medical students receiving spiritual care training showed greater self-reported competencies as compared to those in the usual teaching. These results reinforce the importance of promoting spirituality teaching in medical schools.

Introduction

The current concept of health encompasses a more broad and integrative view, which goes beyond only treating diseases and physical symptoms (Evangelista et al. 2016) and includes biological, psychological, social, environmental, and spiritual aspects (Schlitz 2008). Based on this concept, medical care has moved into a patient-centered approach, which embraces sensitive aspects of personal, cultural, and spiritual values (Catalyst 2017; Evangelista et al. 2016; Osório et al. 2017).

There is growing evidence (Lucchetti and Lucchetti 2014) highlighting the importance of religiosity/spirituality (RS) on health outcomes (Gonçalves et al. 2015; Li et al. 2016; Vitorino et al. 2018). Religion is understood as a system of beliefs, rituals, practices, and symbols observed by a community and designed to facilitate access to the sacred and the transcendent (God or a Higher Power) (Koenig et al. 2012). Spirituality, on the other hand, is defined as a dynamic dimension of human life that relates to the way people express themselves through beliefs, values, or practices, representing individuals' search for transcendence and connection to themselves, their families, others, the community, society, and nature and what is meaningful or sacred (Puchalski et al. 2009).

A recent meta-analysis of 48 longitudinal studies showed that RS significantly impacts the mental health of individuals, generally resulting in better outcomes (Garssen et al. 2021). These results are also observed for spiritual and religious interventions, as noted in another meta-analysis of 23 randomized controlled trials that found a reduction in clinical symptoms (e.g., reducing anxiety and depressive symptoms, stress, and alcoholism) (Gonçalves et al. 2015). Within this context, several medical organizations have supported the inclusion spiritual care in clinical practice (Moreira-Almeida et al. 2014).

Despite these recommendations, studies show that physicians have several barriers to address spiritual issues in clinical practice (Vasconcelos et al. 2020). According to a cross-sectional survey with 2000 US physicians, although 73% of them encouraged patients' spiritual practices, 45% still believed that it was inappropriate to ask patients about RS issues (Curlin et al. 2006).

Most common barriers reported were lack of time, fear of offending patients, and unpreparedness (López-Tarrida *et al.* 2021; Lucchetti *et al.* 2010; Vasconcelos *et al.* 2020). Aiming to reduce the barriers and to promote the addressing of these topics by medical students, medical schools started to incorporate “Spirituality and Health” training in their curricula (Wenham *et al.* 2021).

Indeed, several initiatives have already been carried out worldwide. A group of UK medical students received training in health and spirituality, and the participants felt better prepared to address spiritual issues with their patients (Bell *et al.* 2010). In the same line, Smothers *et al.* (2019) found that US medical students receiving RS training expressed an increased willingness to include RS in their future practice, were more comfortable, and were more willing to approach a patient with RS concern. Results were maintained even in randomized controlled trials. In Brazil, Osório *et al.* (2017) found that students receiving RS training received higher scores on knowledge tests, felt more comfortable and prepared, broke down several RS barriers, and demonstrated more skills to take spiritual history when compared to the control group.

Although studies have shown that physicians, students, and specialists in medical education recognize the need for training to address patients’ RS issues, most published studies did not include control groups, undermining the current evidence (Lucchetti *et al.* 2012a; Wenham *et al.* 2021). Likewise, different from others in the literature, our study has compared fourth-year students receiving spiritual care training (SCT) against final-year students, aiming to show that, even with few hours in the curriculum, these participants could achieve better results as compared to the most experienced students in the medical school. Understanding the effectiveness of RS training in this context could help medical educators to identify gaps in their teaching and promote the incorporation of this topic in their curricula. Therefore, this study aims to investigate the effectiveness of an SCT on the self-reported spiritual care competencies of medical students as compared to a control group.

Methods

Study design

This quasi-experimental (controlled and non-randomized) study was performed at the Faculty of Medicine of Itajubá (FMIT), Brazil, in the year 2019. The present study received the approval of the Research Ethics Committee of the Faculty of Medicine of Itajubá, Brazil (No. 3,047,469), and all participants signed an informed consent form.

Location, population, and sample

FMIT is a private school located in the state of Minas Gerais, Brazil. In 2019, FMIT had around 602 students and its curriculum alternated traditional and active learning strategies.

Inclusion and exclusion criteria

Medical students were included if they were 18 years or older and duly enrolled in the fourth or sixth years of FMIT. Students who received a previous SCT or who were already exposed to “Spirituality and Health” content (*i.e.*, lectures, videos, and articles) were not included. Specifically, for the intervention group (fourth-year students), participants were excluded if they missed more than 25% of the SCT classes.

Intervention –SCT

The SCT was provided by a professor with a Ph.D. and experience in the “Spirituality and Health” field, with several publications on this topic. The main objective of the training was the acquisition of knowledge and development of attitudes and skills concerning spiritual assessment and care. The SCT was conducted for an entire semester. The proposed mandatory training for participants consisted of 12 in-person theoretical classes (50-minute classes delivered once a week), which used traditional (lectures) and active learning (case discussions and group interactions). Students were also trained to take a spiritual history through theoretical and practical classes. A theoretical class presented some instruments to take spiritual history (Faith, belief, meaning; Importance and influence; Community; Address/action in care (FICA), Sources of hope; Organized religion; Personal spirituality and practices; Effects on medical care and end-of-life issues (HOPE), Spiritual belief system; Personal spirituality; Integration with a spiritual community; Ritualized practices and restrictions; Implications for medical care; Terminal events planning (SPIRIT), and Faith, Existential, Practices, Importance and Influence, Community, Assistance, Terminality, Action in treatment (FEPICATA) tools) and students received online content (*i.e.*, videos from experts such as Dr. Christina Puchalski and Dr. Giancarlo Lucchetti and from the “Research Center in Spirituality and Health the Nucleus for Research in Spirituality and Health” – Federal University of Juiz de Fora, Brazil). After this initial training, a simulated practical class using the role play technique was performed. After the role play, practical classes with real patients were used. In pairs, students took spiritual histories of the outpatients attending the Primary Care Health Units, using FICA, HOPE, SPIRIT, and FEPICATA tools. Finally, students presented to their colleagues a summary of the answers of their patients. Finally, the technique of debriefing was used (highlighting what was positive and negative of this experience and deconstructing some barriers). The final class was a moment of feedback for the students who had the opportunity of making critics and compliments concerning the training. The topics of this training are summarized in Table 1.

Control group (usual teaching, not receiving SCT)

For the control group, sixth-year medical students were included. We selected these students because they were completing the medical course, and therefore, they were those students with greater clinical experience in our medical school. It is important to highlight that the control group has received no content on “Spirituality and Health.”

Procedures

Data collection was carried out from November to December 2019 by one of the study’s researchers. Before starting data collection, this researcher received orientation about the objectives and application of the scales and knowledge concerning the field of “Spirituality and Health.” The questionnaires were applied during the classes, respecting each participant’s privacy. The average time for answering the total questionnaire was approximately 20 minutes.

The students who received SCT (fourth-year) and the student who did not receive SCT (sixth-year) answered the same questionnaires. Data collection for the fourth-year students was performed on the last week of the SCT (December 2019) and for the sixth-year students was on the last week in November.

Table 1. Themes covered during the SCT

Themes	Minutes/class
Contextualization on Health and Spirituality	50 min
Concepts: religion, religiosity, and spirituality on health	50 min
National and international demographic aspects of religion, religiosity, and spirituality	50 min
Scientific evidence of religiosity/spirituality on physical and mental health, quality of life, and well-being	50 min
Why, how, and when to include spirituality in clinical practice?	50 min
Religiosity and spirituality in primary care (patient, caregiver, and family approach)	50 min
Religiosity and spirituality and serious illnesses (patient, caregiver, and family member approach)	50 min
Assessment and implementation of spiritual care in clinical practice	50 min
How to identify religious and spiritual struggles	50 min
Chaplaincy and other spiritual support services	50 min
Communication on spirituality and health	50 min
Taking spiritual history 1: theoretical class	50 min
Taking spiritual history 2: Simulated practical class (role play)	50 min
Taking spiritual history 3: Practical class with real patients ^a	200 min
Debriefing: taking spiritual history	50 min
Feedback	50 min

^aDuring the internship in Primary Health Care.

Outcome

Spiritual care competence

We used the Spiritual Care Competence Scale to assess self-reported spiritual care competences (Dezorzi et al. 2019). This scale assesses the perception of students concerning the acquisition of spiritual care competencies in health education and was originally developed in Dutch and later validated into the English, Polish, and Chinese languages (van Leeuwen et al. 2009). The validation and cross-cultural adaptation into Brazilian Portuguese occurred in 2018 (Dezorzi et al. 2019). The 27-item scale has 6 subscales: assessment and implementation of spiritual care – “Assessment” (6 items), professionalization and quality improvement of spiritual care – “Improved Care” (6 items), individualized patient support and counseling – “Counseling” (6 items), “Referral” (3 items), attitude toward patient spirituality – “Attitude” (4 items), and “Communication” (2 items). The scale contains 27 items scored on a 5-point scale ranging from “completely disagree” (1) to “completely agree” (5), and higher scores indicate more self-report spiritual care competences. The scale presented excellent reliability in its Brazilian validation and in this study, with a total Cronbach's alpha of 0.920 and 0.927, respectively (Dezorzi et al. 2019).

Associated variables

Sociodemographic and spiritual and religious beliefs: Sociodemographic variables include age (years), sex (female or male),

and whether the participants lived alone (yes or no). General aspects of religiosity and spirituality were also assessed using the following variables: belief in a higher being (yes or no), religion (yes or no), church attendance (never, once a month, twice a month, and once a week), levels of religiosity/spirituality: “Do you consider yourself a person” (higher religious and higher spiritual – RS; higher religious and low spiritual – Rs; low religious and higher spiritual – rS, and low religious and low spiritual – rs); the importance of religion to student's life (not at all important, a little, medium, quite important, and very much); and the importance of spirituality in student's life (not at all important, a little, medium, quite important, and very much).

Sample size

The G*Power software was used to calculate the minimum sample to perform the study. To determine the effect size, we used a previous study which compared the effectiveness of SCT as compared to a control group using the “Spiritual Care Competence Scale” (Hu et al. 2019). Authors found significant differences for all dimensions of the scale ranging from $d = 0.8$ to $d = 1.21$. Therefore, we adopted the lower effect value to calculate the sample size, that is, $d = 0.83$. A *priori* analysis showed that in order to compare the difference between the means of 2 independent groups using $d = 0.80$, two-tailed, alpha value of 5% ($\alpha = 0.05$), and 1-Beta = 0.95, the minimum sample required would be 78 students (39 students for each group).

Data analysis

Data were analyzed using the Statistical Package for the Social Sciences – SPSS® version 26 (SPSS Inc.). Descriptive analyses, Chi-squared test, and Fisher's exact test were used to compare sociodemographic and the religious/spiritual aspects of participants. Student's *t*-tests were used to compare the scores of the Spiritual Care Competence Scale and its subdimensions between fourth- and sixth-year medical students. Effect sizes (Cohen *d*) were used to assess the magnitude of the difference between groups. Cohen classified effect sizes as small ($d = 0.2$), medium ($d = 0.5$), and large ($d \geq 0.8$) (Carson 2012). A $p < 0.05$ was adopted as significant, and a 95% confidence interval was used.

Results

A total of 115 students participated in this study: 64 fourth-year students and 51 sixth-year students. Table 2 shows the characteristics of the participants. The mean age was 24.41 (SD 2.40), and most participants were females (73%). Concerning the spiritual and religious beliefs, 88.7% believe in God or a Superior Being, 73% had a religion, 44% attend at least once a week to a religious service, 49.5% declared that religion was important to their lives, and 82.7% declared that spirituality was important to their lives. When comparing these variables between groups, no significant differences were found ($p > 0.05$).

The comparison of the self-reported spiritual care competence items is shown in Table 3. The students submitted to the SCT presented significantly higher scores in the following dimensions: “Assessment” ($p < 0.001$; Cohen's $d = 0.993$), “Improved care” ($p < 0.001$; Cohen's $d = 0.693$), “Counseling” ($p < 0.001$; Cohen's $d = 0.886$), and “Total Spiritual Care” ($p < 0.001$; Cohen's $d = 1.044$) as compared to the control group. The dimensions “Attitude” ($p = 0.184$; Cohen's $d = 0.249$) and “Communication”

Table 2. Comparison of sociodemographic and religious/spiritual characteristics of participants ($n = 115$)

Variables	Total	Fourth year ($n = 64$)	Sixth year ($n = 51$)	p
	n (%)	n (%)	n (%)	
Sex				
Male	31 (27.00)	17 (26.60)	14 (27.50)	0.915 ^a
Female	84 (73.00)	47 (73.40)	37 (72.50)	
Resides alone				
Yes	39 (33.90)	22 (34.40)	17 (33.30)	0.907 ^a
No	76 (66.10)	42 (65.60)	34 (66.70)	
Belief in God or a Higher Being				
Yes	102 (88.70)	55 (85.90)	47 (92.20)	0.381 ^b
No	13 (11.30)	9 (14.10)	4 (7.80)	
Religion				
Yes	84 (73.00)	46 (71.90)	38 (74.50)	0.834 ^a
No	31 (27.00)	18 (28.10)	13 (25.50)	
Going to a religious temple				
Never	22 (19.10)	11 (17.20)	11 (21.60)	
Once a month	13 (11.30)	6 (9.40)	7 (13.70)	0.784 ^a
Twice a month	29 (25.20)	17 (26.60)	12 (23.50)	
Once a week	51 (44.40)	30 (46.80)	21 (41.20)	
Levels of religiosity/spirituality				
RS	24 (20.90)	13 (20.30)	11 (21.60)	
Rs	6 (5.20)	5 (7.80)	1 (2.00)	
rS	65 (56.50)	32 (50.00)	33 (64.60)	0.200 ^b
rs	20 (17.40)	14 (21.90)	6 (11.80)	
Importance of religion				
Not important	19 (16.50)	12 (18.80)	7 (13.70)	
A little bit	11 (9.60)	7 (10.90)	4 (7.80)	
Medium	28 (24.40)	15 (23.40)	13 (25.50)	0.862 ^b
Quite important	38 (33.00)	19 (29.70)	19 (37.3)	
Very much	19 (16.50)	11 (17.20)	8 (15.70)	
Importance of spirituality				
Not important	5 (4.30)	4 (6.30)	1 (2.00)	
A little bit	6 (5.20)	4 (6.30)	2 (3.90)	
Medium	9 (7.80)	6 (9.40)	3 (5.90)	0.196 ^b
Quite important	50 (43.60)	31 (48.30)	19 (37.30)	
Very much	45 (39.10)	19 (29.70)	26 (50.90)	

RS: high religious and high spiritual; Rs: high religious and low spiritual; rS: low religious and high spiritual; and rs: low religious and low spiritual.

^aChi-square test.

^bFisher's Exact Test.

($p = 0.738$, Cohen's $d = 0.064$) were not significant. When the 27 items of the Spiritual Care Competence Scale were analyzed separately, 21 items showed statistically significantly higher scores for the SCT students as compared to the control group students, with effect sizes ranging from Cohen's $d = 0.428$ to 1.032. The other 6 items were not significant ($p > 0.05$).

Discussion

Our results indicate that providing an SCT for medical students could result in greater self-reported spiritual care competences as compared to students who did not receive such training. In our sample, SCT had a positive effect on the perception of the provision of overall spiritual care, as well as for the subdimensions, "Assessment," "Improved Care," "Counseling," and "Referral." Our findings corroborate with previous studies in medical/health-care students but also in several health-care professions (Crozier et al. 2022; Lovanio and Wallace 2007; Osório et al. 2017; Smothers et al. 2019; Thompson and MacNeil 2006; Van Leeuwen et al. 2008; Wasner et al. 2005; Yilmaz and Gurler 2014), highlighting that offering training in "Spirituality and Health," even with small insertions, may improve the way participants' address and value such content. These results reinforce the importance of providing SCT among medical students (Crozier et al. 2022) and foster the discussion of spirituality, motivating the implementation of SCT in Brazilian and international medical curricula (Lucchetti et al. 2012b).

As reported previously, most of the literature on SCT relies on uncontrolled studies. Unfortunately, these studies generate low evidence due to the lack of a control group. The evidence for these studies have shown that, after being exposed to an STC, medical students had significantly higher understanding of the role of the chaplain in the hospital setting, more knowledge concerning the influence of spirituality on health, more positive attitudes toward spirituality, better quality of care, more comfort, greater willingness to approach a patient, improvements in the doctor-patient relationship, and a decrease in the barriers for addressing religious and spiritual issues (Gonçalves et al. 2016; Graves et al. 2002; Piscitello and Martin 2020; Smothers et al. 2019; van de Geer et al. 2018).

However, more solid evidence was observed when control groups were inserted in the studies. Although most controlled studies have found positive findings such as an increase in moral sensitivity after receiving spirituality training (Jalili et al. 2020), reduction in the stress associated with clinical practice, improvement of the provision of spiritual health (Hsiao et al. 2012), improvements in skills, attitudes, and knowledge, reduction of barriers (Osório et al. 2017), and improvement of spiritual care competencies (Hu et al. 2019) as compared to a control group; there are other studies that failed to find differences in skills and clinical practice for those receiving SCT (Anandarajah and Mitchell 2007; Musick et al. 2003), revealing that theoretical content is more easily changed in comparison to skills.

In the specific case of our study, participants in the intervention group showed significantly higher scores for the following self-reported spiritual care competencies: "Assessment" (e.g., write on a patient's spiritual needs), "Improved Care" (e.g., identify problems relate to spiritual care), "Counseling" (e.g., provide a patient with spiritual care), and "Referral" (e.g., refer to a spiritual/religious leader) but not for "Attitudes" (e.g., Open to a patient's spiritual/religious beliefs) and "Communication" (e.g., listen actively to

Table 3. Comparison between self-reported Spiritual Care Competence ($n = 115$)

Dimensions	Total	Fourth year ^a ($n = 64$)	Sixth year ^b ($n = 51$)	p -value	Cohen's d
	Mean (SD)	Mean (SD)	Mean (SD)		
Assessment	19.04 (4.79)	20.96 (3.72)	16.62 (4.93)	<0.001	0.993
Improved care	15.24 (4.87)	16.67 (4.40)	13.45 (4.87)	<0.001	0.693
Counseling	15.21 (5.26)	17.12 (4.65)	12.82 (5.04)	<0.001	0.886
Referral	7.79 (3.16)	8.79 (2.66)	6.52 (3.31)	<0.001	0.756
Attitude	18.05 (2.35)	18.31 (2.10)	17.72 (2.60)	0.184	0.249
Communication	9.12 (1.22)	9.15 (1.14)	9.07 (1.33)	0.738	0.064
Total spiritual care	84.80 (16.06)	91.48 (13.12)	76.43 (15.58)	<0.001	1.044
Item 01. I can report orally and/or in writing on a patient's spiritual needs	3.18 (0.96)	3.54 (1.58)	2.90 (1.00)	0.013	0.484
Item 02. I can tailor care to a patient's spiritual needs/problems in consultation with the patient	3.13 (0.95)	3.35 (0.82)	2.86 (1.03)	0.005	0.526
Item 03. I can adapt care to a patient's spiritual needs/problems through multidisciplinary assessment	3.10 (1.07)	3.39 (1.00)	2.74 (1.05)	0.001	0.633
Item 04. I can record the contribution to spiritual care in the patient's care plan	2.98 (0.93)	3.35 (0.82)	2.51 (0.85)	<0.001	1.005
Item 05. I can report in writing how the patient exercises his or her spirituality	3.23 (1.08)	3.56 (0.92)	2.82 (1.14)	<0.001	0.714
Item 06. I can report orally how the patient exercises his or her spirituality	3.32 (1.03)	3.75 (0.75)	2.78 (1.10)	<0.001	1.030
Item 07. Within the department/unit, I can contribute to quality assurance in the area of spiritual care	2.87 (1.07)	3.14 (1.03)	2.52 (1.02)	0.002	0.604
Item 08. Within the department/unit, I can contribute to professional development in the area of spiritual care	2.63 (1.05)	2.85 (0.98)	2.35 (1.07)	0.010	0.487
Item 09. Within the department/unit, I can identify problems relating to spiritual care in peer discussion sessions	2.77 (1.10)	3.03 (1.02)	2.45 (1.13)	0.005	0.538
Item 10. I can coach other health professionals in the area of spiritual care delivery to patients	2.13 (0.89)	2.32 (0.81)	1.90 (0.94)	0.011	0.478
Item 11. I can make policy recommendations on aspects of spiritual care to the management of the department/unit	2.36 (1.02)	2.57 (0.92)	2.09 (1.08)	0.012	0.478
Item 12. I can implement a spiritual care improvement project in the department/unit	2.46 (1.07)	2.73 (0.96)	2.11 (1.12)	0.002	0.594
Item 13. I can provide a patient with spiritual care	2.80 (1.05)	3.18 (0.88)	2.31 (1.04)	<0.001	0.903
Item 14. I can evaluate the spiritual care that I have provided in consultation with the patient and the health-care team	2.62 (0.99)	3.03 (0.85)	2.11 (0.93)	0.000	1.032
Item 15. I can give a patient information about spiritual facilities within the care institution	2.48 (1.14)	2.65 (1.04)	2.27 (1.25)	0.077	0.330
Item 16. I can help a patient continue his or her daily spiritual practices	2.59 (1.05)	2.92 (0.98)	2.17 (1.01)	0.000	0.753
Item 17. I can attend to a patient's spirituality during the daily care	2.58 (1.05)	3.00 (0.95)	2.05 (0.92)	0.000	1.015
Item 18. I can refer members of a patient's family to a spiritual counselor if they ask me and/or if they express spiritual needs	2.47 (1.07)	2.78 (0.98)	2.07 (1.07)	0.000	0.692
Item 19. I can effectively assign care for a patient's spiritual needs to another care provider/health professional	2.57 (1.14)	2.92 (1.02)	2.13 (1.14)	0.000	0.730
Item 20. I can in a timely and effective manner, at the request of a patient with spiritual needs, refer him or her to a spiritual/religious leader	2.42 (1.19)	2.71 (1.06)	2.05 (1.25)	0.003	0.569
Item 21. I know when I should consult a spiritual advisor concerning a patient's spiritual care	2.79 (1.31)	3.15 (1.11)	2.33 (1.40)	0.001	0.649

(Continued)

Table 3. (Continued.)

Dimensions	Total	Fourth year ^a (n = 64)	Sixth year ^b (n = 51)	p-value	Cohen's d
	Mean (SD)	Mean (SD)	Mean (SD)		
Item 22. I show unprejudiced respect for a patient's spirituality/religiosity regardless of his or her spiritual/religious background	4.56 (0.70)	4.57 (0.70)	4.54 (0.70)	0.826	0.042
Item 23. I am open to a patient's spiritual/religious beliefs, even if they differ from my own	4.47 (0.78)	4.46 (0.77)	4.49 (0.80)	0.885	0.038
Item 24. I do not try to impose my own spiritual/religious beliefs on a patient	4.52 (0.85)	4.68 (0.53)	4.31 (1.10)	0.019	0.428
Item 25. I am aware of my personal limitations when dealing with a patient's spiritual/religious beliefs	4.48 (0.86)	4.57 (0.77)	4.37 (0.95)	0.205	0.231
Item 26. I can listen actively to a patient's life story in relation to his or her illness/special needs	4.54 (0.70)	4.57 (0.61)	4.51 (0.80)	0.607	0.084
Item 27. I have an accepting attitude in my dealings with a patient	4.57 (0.62)	4.57 (0.58)	4.56 (0.67)	0.936	0.015

^aStudents who received SCT.

^bStudents who did not receive SCT.

patient's life story in relation to his or her illness/special needs). The significant improvements observed in the first 4 dimensions is directly related to the theoretical and practical classes (simulated and real patients) that students were subjected, since they have been trained to identify spiritual issues, provide care, take spiritual histories, and understand the role of religious leaders. However, the other 2 nonsignificant dimensions are more related to general communication skills (which tend to be more developed in more experienced students and were not specifically taught in this course) and general attitudes (which tend to be subjected to social desirability bias, since it includes respect, no imposition, unprejudiced respect, among others). Since these are self-reported competencies, it is difficult to say whether these findings would also happen in the real life.

Our findings support the positive outcomes experienced by those submitted to SCT, promoting more confidence and self-reported competencies among medical students and highlighting the feasibility of a required but simple intervention to modify students' perceptions on the topic of spirituality. Medical schools should include such training, not as elective exposures, but as required contents, preferably as longitudinal insertions, where students' exposures happen all over the course. This could be incorporated as S/H disciplines or, ideally, as competencies that could be addressed by modules such as palliative care, geriatrics, pediatrics, and clinical skills courses, among others.

Our study has some limitations that must be addressed. First, this is not a randomized controlled trial, which compromises the homogeneity of the control group. Second, the training was conducted in a single course, which tends to be a small incorporation of the topic in the curriculum. Third, we did not perform a pre-assessment of the self-reported competencies for spiritual care and, for this reason, it was not possible to verify a possible gain of competencies. To minimize this problem, we have compared to students not receiving the intervention. Fourth, the study was conducted only in a single medical school with a small sample of students, thereby limiting generalizability. Finally, as reported previously, this study assessed self-reported perceptions of the students' competencies. Future studies should include objective real-life measures such as patient's observations and Mini-CEX assessments.

Although this study has some limitations, it is important to highlight that this study adds to the current literature assessing

the effectiveness of SCT using a specific SCT scale validated to the Brazilian culture (Dezorzi *et al.* 2019), allowing future comparisons with other national and international studies. It is necessary that studies of this nature be replicated and improved in different regions of Brazil and other countries to have greater evidence accuracy.

In conclusion, medical students receiving SCT showed greater self-reported competencies as compared to those in the usual teaching. These results reinforce the importance of promoting spirituality teaching in medical schools.

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Conflicts of interest. The authors declare that there is no conflict of interest.

Ethical approval. All study procedures involving humans were performed in accordance with the ethical regulations of the institutional and Brazilian national research committee and with the 1964 Helsinki declaration. This project was approved by the Faculty of Medicine of Itajubá – FMIT Research Ethics Committee (protocol number no. 3,047,469).

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