



# Human Development Index and its association with staff spiritual care provision: a Middle Eastern oncology study

Gil Bar-Sela<sup>1</sup> · Michael J. Schultz<sup>2</sup> · Karima Elshamy<sup>3</sup> · Maryam Rassouli<sup>4</sup> · Eran Ben-Arye<sup>5</sup> · Myrna Doumit<sup>6</sup> · Nahla Gafer<sup>7</sup> · Alaa Albashayreh<sup>8</sup> · Ibtisam Ghrayeb<sup>9</sup> · Ibrahim Turker<sup>10</sup> · Gulcin Ozalp<sup>10</sup> · Sultan Kav<sup>11</sup> · Rasha Fahmi<sup>12</sup> · Sophia Nestoros<sup>13</sup> · Hasanein Ghali<sup>14</sup> · Layth Mula-Hussain<sup>15</sup> · Ilana Shazar<sup>16</sup> · Rana Obeidat<sup>17</sup> · Rehana Punjwani<sup>18</sup> · Mohamad Khleif<sup>19</sup> · Gulbeyaz Can<sup>20</sup> · Gonca Tuncel<sup>10</sup> · Haris Charalambous<sup>21</sup> · Safa Faraj<sup>14</sup> · Neophyta Keoppi<sup>22</sup> · Mazin Al-Jadiry<sup>14</sup> · Sergey Postovsky<sup>23</sup> · Ma'an Al-Omari<sup>24</sup> · Samaher Razzaq<sup>14</sup> · Hani Ayyash<sup>25</sup> · Khaled Khader<sup>26</sup> · Rejin Kebudi<sup>27</sup> · Suha Omran<sup>28</sup> · Osaid Rasheed<sup>29</sup> · Mohammed Qadire<sup>30</sup> · Ahmet Ozet<sup>31</sup> · Michael Silbermann<sup>32</sup>

Received: 25 August 2018 / Accepted: 5 March 2019 / Published online: 20 March 2019  
© Springer-Verlag GmbH Germany, part of Springer Nature 2019, corrected publication 2019

## Abstract

**Background** Although staff spiritual care provision plays a key role in patient-centered care, there is insufficient information on international variance in attitudes toward spiritual care and its actual provision.

**Methods** A cross-sectional survey of the attitudes of Middle Eastern oncology physicians and nurses toward eight examples of staff provision of spiritual care: two questionnaire items concerned prayer, while six items related to applied information gathering, such as spiritual history taking, referrals, and encouraging patients in their spirituality. In addition, respondents reported on spiritual care provision for their last three advanced cancer patients.

**Results** Seven hundred seventy responses were received from 14 countries (25% from countries with very high Human Development Index (HDI), 41% high, 29% medium, 5% low). Over 63% of respondents positively viewed the six applied information gathering items, while significantly more, over 76%, did so among respondents from very high HDI countries ( $p$  value range,  $p < 0.001$  to  $p = 0.01$ ). Even though only 42–45% overall were positively inclined toward praying with patients, respondents in lower HDI countries expressed more positive views ( $p < 0.001$ ). In interaction analysis, HDI proved to be the single strongest factor associated with five of eight spiritual care examples ( $p < 0.001$  for all). Significantly, the Middle Eastern respondents in our study actually provided actual spiritual care to 47% of their most recent advanced cancer patients, compared to only 27% in a parallel American study, with the key difference identified being HDI.

**Conclusions** A country's development level is a key factor influencing attitudes toward spiritual care and its actual provision. Respondents from lower ranking HDI countries proved relatively more likely to provide spiritual care and to have positive attitudes toward praying with patients. In contrast, respondents from countries with higher HDI levels had relatively more positive attitudes toward spiritual care interventions that involved gathering information applicable to patient care.

**Keywords** Spiritual care · Human Development Index · Middle East · Oncology · Palliative care · Prayer

## Introduction

Spiritual care is part of holistic, patient-centered care and ideally should be provided on a basic level by all staff and

more extensively by professional spiritual caregivers when the needs are greater [1, 2]. Studies consistently show, although to varying degrees, that patients would like their physicians and nurses to inquire regarding their spiritual needs and resources [3–6]. However, medical staff are consistently less comfortable doing so and, in practice, provide spiritual care less often than patients would like [7–9]. Various studies have considered physicians' and nurses' attitudes toward spiritual care and their actual provision of specific kinds of such care [10–14].

✉ Gil Bar-Sela  
gil\_ba@clalit.org.il

Extended author information available on the last page of the article

Staff-provided spiritual care can assume a variety of forms, although the basis of all these interventions is showing care for patients and trying to get to know them better as a person. Some interventions are structured to gather information that can be applied to patient care. These include taking a spiritual history, asking about referrals to a professional spiritual caregiver (chaplain) or to sources of religious or spiritual support within the patient's community [15, 16]. Other forms of care, such as asking about patients' spiritual resources that could potentially be accessed and encouraging patients in their religious/spiritual (r/s) beliefs and practices or even helping them to do so, help enable patients to feel seen and to give expression to their spirituality even while hospitalized [12]. Still, other forms of care are more open-ended, enabling patients to share and express spiritual distress; being attentive, caring, and accepting and thereby strengthening the relationship between staff and patient; and searching for hope and for ways for patients to continue living out their values [17–19].

In our efforts to understand better what types of spiritual care staff are already providing and to consider how best to ensure that patients' spiritual needs are being met, we must consider the significance of cultural difference [20]. Which interventions are considered appropriate may vary from culture to culture, even after accounting for differences in attitude arising from differences in training. Because culture and language are closely intertwined, even universal aspects of spirituality and spiritual distress will find varying expressions in different cultures and languages, and staff should appropriately address those particular expressions [21].

Similarly, we can expect culture to be interconnected with the level of development (economic and educational) of a given country, together impacting both on baseline attitudes regarding staff spiritual care provision and on the specific ways in which staff actually provide spiritual care. Specifically, higher rates of prayer are associated with lower national economic production [22]. Furthermore, the availability of medication, especially for palliative medicine, can be quite limited in less economically developed nations [23]. We hypothesize that, in light of more limited medical resources, oncology staff in more economically constrained settings may compensate by providing more extensive spiritual, as well as emotional, support. The Human Development Index (HDI), developed by the United Nations Development Programme, is a composite index factoring in life expectancy, education, and per capita economic production [24]. The HDI scores all the countries of the world, grouping them into four categories: very high, high, medium, and low.

This broad-based study examining the attitudes of oncology nurses and physicians toward spiritual care provision, and the extent to which they provide spiritual care in practice, is both focused and diverse: it examines a geographically based culture, Middle Eastern culture, while at the same time drawing from countries across the HDI spectrum. In this way, the

authors hope to evaluate the differences between Middle Eastern respondents and those from other regions of the world, while considering the impact of varying levels of development within the study sample.

## Methods

### Sample

Our sample was a cross-sectional survey of physicians and nurses treating patients with advanced cancer in 14 Middle Eastern countries. After the study was proposed to all members of the Middle East Cancer Consortium (MECC), the study coauthors self-selected to lead the project. The authors distributed hard copy questionnaires to all oncology physicians and nurses in their respective institutions, and sent two email reminders over a 5-month period (July–November 2015) from distribution to final collection. Questionnaires were distributed to 1177 physicians and nurses, and 834 completed questionnaires (79% response rate, nurses; 63% response rate, physicians) were received. Twenty-one respondents who failed to answer the key question regarding spiritual care provided to their three most recent terminal cancer patients were excluded. Because the study was limited to physicians and nurses who care for advanced cancer patients, we included a test question confirming that this criterion had been met, thereby excluding an additional 43 respondents who indicated that they had no advanced cancer patients. Our final sample size was 770. The study protocol was approved by the first author's institutional review board.

### Study measures

For purposes of cross-cultural comparison, this study largely replicated the Religion and Spirituality in Cancer Care (RSCC) study carried out in Boston [3]. The questionnaire opened with definitions of spirituality [25], religion, and spiritual care [7]. Eight items (“spiritual care examples”) suggested examples of spiritual care provision and inquired about respondents' perceptions of how often it is appropriate for members of their profession to provide each of those eight spiritual care items to advanced, incurable cancer patients, on a 6-point Likert-type scale. Following the RSCC study, responses of three or more (at least occasionally appropriate) were considered as an endorsement of that item [3]. One item regarding the theoretical impact of spiritual care asked how positive or negative regular, appropriate staff spiritual care provision would be, answered on a 7-point Likert-type scale. One item surveying respondents' actual practices asked respondents to how many of their last three advanced, incurable cancer patients they had provided any type of spiritual care; if that answer was one or more, respondents were asked on a 7-

point Likert-type scale about the impact that care had on their relationship with the patient. Two yes/no items inquired regarding respondents' prior spiritual care training and their interest in further training. One Likert-type item asked respondents about their perceptions of the contribution of spiritual well-being to patients' quality of life.

### Demographic and professional questions

Respondents were asked their gender, religiosity, spirituality, religion, the extent to which their *r/s* beliefs influence their practice of medicine (“intrinsic *r/s*”), country of residence, profession, years of experience, percentage of patients with advanced cancer, and oncology specialty.

### Professional spiritual care

For this study, we added four items to gauge respondents' familiarity with the profession of spiritual care providers, their desire to learn more about professional spiritual care, the presence (yes/no) of a professional spiritual care provider at their workplace, and the question “If it were up to you, would you place a professional spiritual care provider on the staff at your workplace?”

### Statistical analysis

We employed the chi-square test to compare distributions between responses, grouped by Human Development Index (HDI), in terms of respondent demographic and professional characteristics and attitudes regarding spiritual care. For each of the eight spiritual care examples, we further carried out a Chi-square Automatic Interaction Detector (CHAID) analysis. This analysis determines in a stepwise fashion which items demonstrate the greatest impact on the dependent variable, in this case, respondent attitudes toward the spiritual care examples given.

In addition, we conducted a bivariate analysis regarding responses to the “theoretical impact” item. We employed the chi-square test regarding staff interest in receiving training and in incorporating a professional spiritual caregiver in their staff. Finally, we conducted a multivariate analysis regarding actual spiritual care provision to one or more of the respondents' last three terminal cancer patients, including all factors significant in a bivariate analysis.

## Results

### Sample demographics

As Table 1 illustrates, in terms of personal characteristics, respondents were primarily female (61%), Muslim (73%),

**Table 1** Sample demographics

	N (%)
Gender	
Male	299 (39%)
Female	465 (61%)
Religiosity	
Very religious	89 (12%)
Moderately religious	330 (43%)
Slightly religious	225 (30%)
Not religious at all	116 (15%)
Spirituality	
Very spiritual	109 (14%)
Moderately spiritual	329 (43%)
Slightly spiritual	247 (32%)
Not spiritual at all	76 (10%)
Religion	
Muslim	558 (73%)
Christian	78 (10%)
Jewish	102 (13%)
Other	25 (3%)
Profession	
Nurse	456 (60%)
Physician	300 (40%)
% patients with advanced cancer	
> 0% but < 10%	96 (12%)
10–40%	245 (32%)
40–70%	266 (35%)
> 70%	163 (21%)
Years' experience	
< =3	146 (20%)
3–9	239 (32%)
10–19	213 (29%)
> 20	148 (20%)
Field of oncology (can choose more than one)	
Medical	432 (61%)
Radiation	80 (11%)
Palliative care	178 (25%)
Pediatric	176 (25%)
Human Development Index of country	
Very high	191 (25%) (Cyprus = 36; Israel = 145; Saudi Arabia = 5; United Arab Emirates = 5)
High	314 (41%) (Iran = 25; Jordan = 84; Lebanon = 19; Oman = 18; Turkey = 168)
Medium	219 (29%) (Egypt = 47; Iraq = 96; Palestine = 76)
Low	42 (5%) (Pakistan = 18; Sudan = 24)

Percentages exclude missing response values

very or moderately spiritual (57%), and very or moderately religious (55%). Regarding professional characteristics, 60% were nurses and 40% physicians, 32% had 3 to 9 years' experience and 29% had 10–19 years' experience, and 61% were medical oncologists. Grouping respondents by their country's development level revealed that 25% came from countries with very high HDI, 41% from high HDI, 29% from medium HDI, and only 5% from low HDI.

### Spiritual care examples

Of the eight examples provided, five (those relating to taking a spiritual history and inquiring about *r/s* referrals) were viewed

as appropriate by 63–68% of respondents, one (encouraging patients in their spirituality) was endorsed by 81%, while the two items relating to prayer were only endorsed by 42–45%. Because of the great variance in sample size between countries, we searched for an optimal method of grouping countries rather than examining each one separately and did not find any grouping methodology more significant than HDI.

In chi-square analysis, all items varied significantly based on the respondent's country's HDI, in six cases with  $p < 0.001$ . However, as shown in Table 2, the direction of the HDI's significance varied. For the six more commonly endorsed items, more positive views correlated with a higher HDI level of the respondent's country, whereas the two prayer-related items were viewed more positively by respondents from countries with a relatively lower HDI.

Other items significantly correlating ( $p < 0.05$ ) with respondent attitudes toward at least six of the eight spiritual care examples included higher religiosity, spirituality, and intrinsic r/s, religion, having received or desiring training in spiritual care provision, working in palliative care or in pediatric oncology, the presence of a professional spiritual caregiver on staff, and spiritual care provision to at least one of their last three terminal cancer patients. Physicians vs. nurses and years of practice were among the factors not found to be significant.

### CHAID analysis

We carried out a CHAID analysis to better understand the HDI's relative importance in comparison to the other factors noted above in predicting respondent attitudes toward these spiritual care examples (the dependent variable). This analytical technique visually displays the interaction between variables in a node tree, where the factors with the stronger influence on the dependent variable are listed higher up in the tree. Full results for the dependent variable are found in the root node, which is then split by the strongest factor into multiple "parent nodes." These, in turn, are each split by the strongest remaining factor into "child nodes," and so on until the

terminal nodes. In five of eight spiritual care examples, the strongest factor subdividing the sample was the HDI ( $p < 0.001$  in all cases), indicating its real strength as a predictive factor of attitudes toward these types of staff spiritual care provision. Table 3 tallies how often the various factors produced parent, child, and terminal nodes, in order to summarize their relative significance.

Figures 1 and 2 present the CHAID analysis from root through child nodes for two representative items, one (spiritual history taking) in which more positive attitudes correlated with a higher HDI score, and one (offering a prayer) in which more positive attitudes correlated with a lower HDI score. As can be seen, HDI was the strongest factor in each item. HDI was also the strongest factor for three other items: inviting spiritual conversation, asking about the impact of r/s on treatment decisions, and asking about spiritual care referrals.

### Theoretical impact of spiritual care

Regarding the hypothetical impact of appropriate staff provision of spiritual care, 399 (52%) thought it would be highly positive for patients (6 or 7 on the 7-point scale), 311 (41%) thought it would have a neutral or mildly positive impact, and 52 (7%) thought it would be negative. In bivariate analysis comparing those who did or did not think this would be highly positive for patients, significantly associated items included religiosity, spirituality, intrinsic r/s, actual spiritual care provision to their patients, desire for spiritual care training, desire to include professional spiritual care on their staff, and respondents with over 40% advanced cancer patients ( $p < 0.01$  for all those items). HDI was not significantly associated. Although respondents may have also considered other types of spiritual care when replying, their responses were significantly associated with all eight spiritual care examples ( $p < 0.001$  for seven items,  $p = 0.01$  regarding spiritual care referral), indicating that they indeed included those examples in their perceptions of what constituted appropriate spiritual care.

**Table 2** Positive attitudes toward examples of spiritual care provision, by HDI

	Whole sample ( $N = 770$ )	Very high ( $N = 191$ )	High ( $N = 314$ )	Medium ( $N = 219$ )	$P$ value (chi-square)
Spiritual history	517 (67%)	156 (82%)	209 (67%)	124 (57%)	< 0.001
Encouraging spirituality	625 (81%)	168 (88%)	259 (82%)	162 (74%)	0.003
Inviting spiritual conversation	525 (68%)	156 (82%)	226 (72%)	122 (56%)	< 0.001
Impact of r/s on treatment decisions	496 (64%)	152 (80%)	218 (69%)	113 (52%)	< 0.001
Asking about spiritual care referral	485 (63%)	167 (87%)	202 (64%)	103 (47%)	< 0.001
Asking about involving r/s supporters	524 (68%)	145 (76%)	216 (69%)	135 (62%)	0.011
Joining patient-initiated prayer	320 (42%)	50 (26%)	166 (53%)	82 (37%)	< 0.001
Offering a prayer	345 (45%)	68 (36%)	137 (44%)	120 (55%)	< 0.001

Respondents from low HDI countries ( $N = 42$ ) are not shown here due to small sample size. An additional four respondents did not indicate their country. Responses are dichotomized to not appropriate (never/rarely) vs. appropriate (occasionally/frequently/almost always/always)

**Table 3** CHAID analysis prevalence and distribution of various factors impacting on staff attitudes toward examples of spiritual care provision

	Parent node	Child node	Terminal node
HDI	5	2	
Spirituality	1	3	1
Religiosity	1	2	2
Pediatric oncology	1	1	
% patients treated having advanced cancer		4	1
Profession		3	1
Palliative care		1	3
Religion		1	
Gender			3
Years' experience			1

For all eight items, there were three levels of node division; therefore, all child nodes came at the same level of the analysis

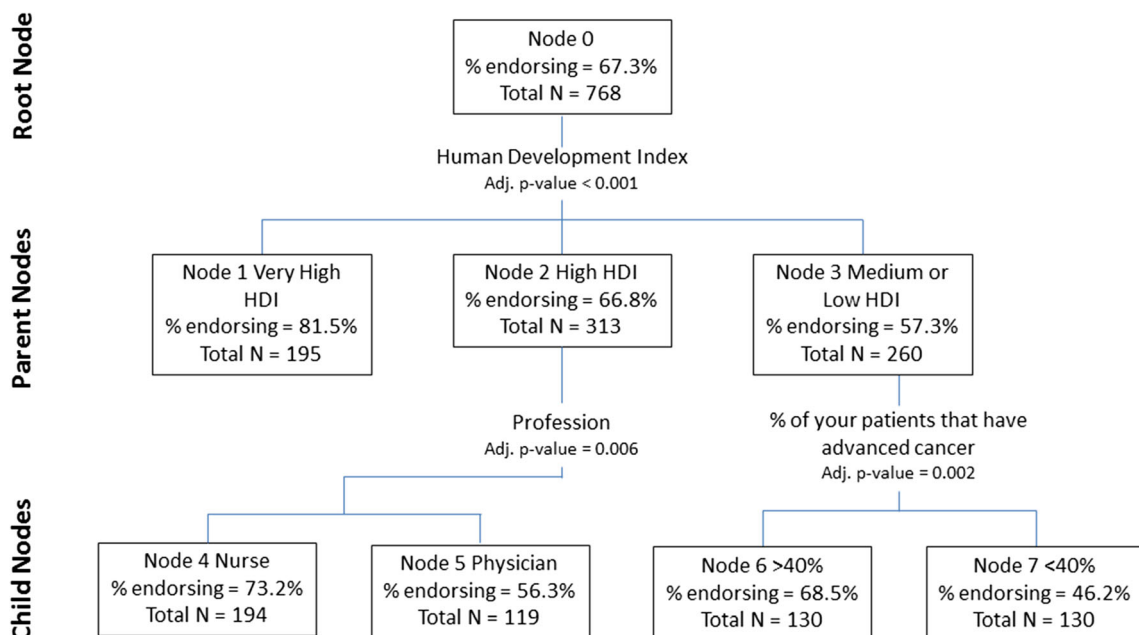
**Actual spiritual care provision**

Considering their three most recent patients with advanced incurable cancer, respondents indicated that they had provided some form of spiritual care to 47% of those patients (physicians 41%, nurses 50%). Of those who provided some spiritual care to at least one patient, 50% said it had a moderately or very positive impact on their relationship with the patient, 45% said the impact was neutral or mildly positive, and 5% reported a negative impact. As reported previously [26], the single strongest factor in a multivariate analysis of factors correlating with actual spiritual care provision was the HDI of the respondent’s country (adjusted odds ratio 4.21, 95% CI 2.58–6.87). Other significant factors in the multivariate analysis that correlated with the

provision of spiritual care included spirituality, intrinsic r/s, having received training, and being a nurse, not a physician. Religion was not significant even in the bivariate analysis, nor was religiosity in the multivariate analysis.

**Training in spiritual care provision**

Whereas 22% of respondents indicated they had received some training in spiritual care, 77% indicated interest in receiving such training. Factors significantly associated with a desire for such training included spirituality, religiosity, religion (Islam), intrinsic r/s, actual spiritual care provision, lower HDI ( $p < 0.001$  for all those items), and pediatric oncology ( $p = 0.01$ ). Physicians vs. nurses, years of practice, and



**Note:** Endorsement defined as respondents indicating that this item is at least occasionally appropriate.

**Fig. 1** CHAID analysis regarding the spiritual history taking item

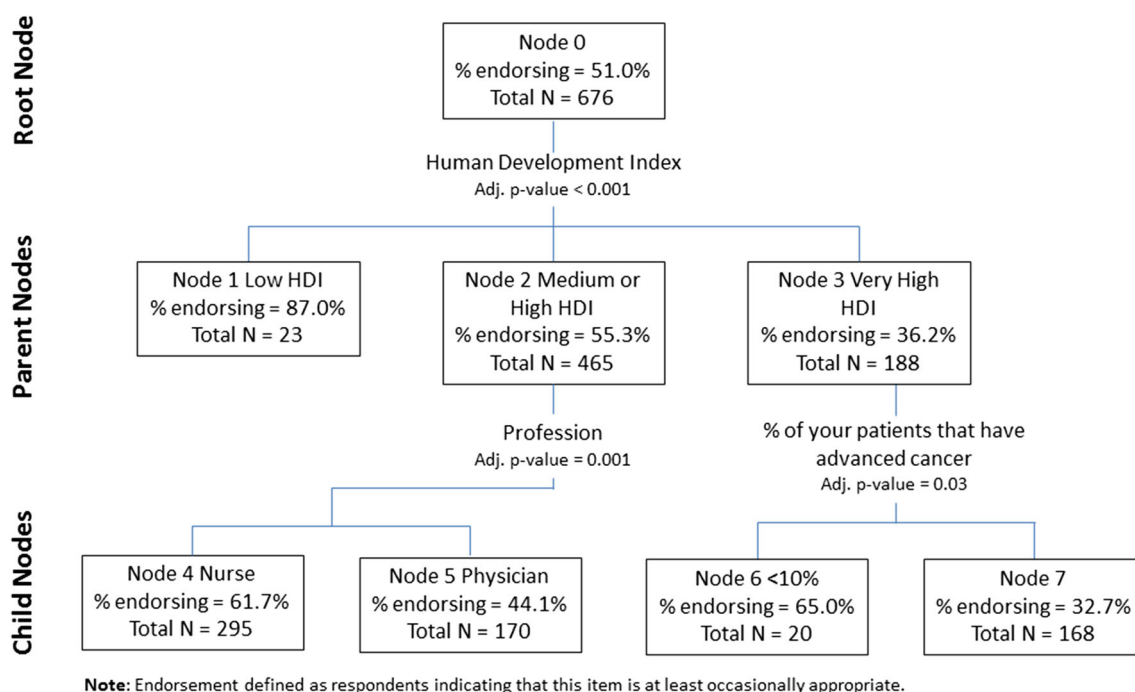


Fig. 2 CHAID analysis regarding the item about offering a prayer

medical specialty were among the factors not found to be significant.

### Professional spiritual care

When answering the question: “If it were up to you, would you place a professional spiritual care provider on the staff at your workplace?,” 68% were positively inclined (4 or 5 on the 5-point scale). Factors significantly associated with this position included having received or desiring spiritual care training, spirituality, and intrinsic  $r/s$  ( $p < 0.001$ ). Furthermore, 54% of respondents said they were familiar with the profession of spiritual care, 80% said they would like to learn more about professional spiritual care, and 26% reporting having a professional spiritual caregiver on staff, though no further questions were asked regarding the nature of that staff position.

### Discussion

This study most strikingly highlights the significance of a country’s development (as measured by HDI) as a key factor associated with staff attitudes toward spiritual care provision. It is especially noteworthy that certain examples of spiritual care provision were preferentially viewed by respondents from higher HDI countries, while others were seen more positively by respondents from lower HDI countries. The former group, preferred in higher HDI countries, consisted of items that related to facilitating discussion of patients’ spirituality,

facilitating the healthy practice of such spirituality, and understanding its impact on their health care preferences—taking a spiritual history, inquiring regarding  $r/s$  referrals, and encouraging patients in their spirituality. This group of interventions may be considered applied information-gathering interventions.

The latter group, preferred in lower HDI countries, specifically concerned prayer, which may stand alone or may serve as one important example of how staff can actually participate in patients’ spiritual practice. Because this study replicated the American, Boston-based Religion and Spirituality in Cancer Care (RSCC) study [3], it included no items regarding other types of spiritual care provision by nurses and physicians that are more open-ended and more closely resemble the work of professional spiritual care providers. We see here that HDI is strongly associated with the types of spiritual care being viewed more positively in higher HDI countries and other types in lower HDI countries.

Another avenue for analyzing our results is by comparison with the RSCC study results. In our study, we find generally positive attitudes to the spiritual care examples (see Table 2). However, even if we limited ourselves to the very high HDI results from our study (for better comparison with the USA), and all the more so in the full sample, attitudes are consistently less positive in our Middle Eastern study than in the Boston-based study (where we find over 90% positive attitudes to the first group of spiritual care examples), and even more so regarding prayer (over 60% positive in the Boston-based study) [3]. Middle Eastern respondents almost always viewed the

impact of actual spiritual care provision as neutral or positive, but fewer saw it as being moderately or very positive than in Boston [3, 27].

Conversely, significantly more Middle Eastern than American respondents were interested in receiving spiritual care training (77% vs. 61%) or had previously received such training (23% vs. 13%) [3, 7]. Notably, lower HDI was significantly associated with desiring spiritual care training.

Yet, despite our finding of significantly less positive attitudes to the spiritual care examples given, our study found much higher rates of actual spiritual care provision than the Boston-based study. Our research showed that staff provided some form of spiritual care to 47% of their recent terminal cancer patients, substantially more than the 27% cited in the RSCC study [3, 27]. In both studies, nurses rather than physicians, and staff members who were more spiritual themselves, were more likely to provide spiritual care. These results are not surprising, indicating that the provision of spiritual care closely hews to personally identifying with such a role, because of either personal or professional identity. Predictably, those respondents with previous training in spiritual care provision also showed greater levels of providing spiritual care.

Why was actual spiritual care provision so much higher in this study than in the US study? The difference can partly be explained by the fact that a higher percentage of respondents were nurses (59% vs. 37%), worked in palliative care (23% vs. 6%), or had received spiritual care training (22% vs. 13%), all of which correlated here or elsewhere with greater spiritual care provision [3, 27–30]. However, these factors alone are not strong enough to explain the difference fully. The single strongest determinant we identified explaining the difference between these two studies was the inclusion of countries with high, medium, and low HDI. Although a country's development level is generally a positive factor for medical care, we found that the reverse holds true in spiritual care provision. Perhaps in the process of development, this key element of patient care—caring for the spirit—has gotten lost.

It is worth noting that the Middle Eastern respondents were more religious but not more spiritual than the Boston ones, and the multivariable analysis indicated that only spirituality and not religiosity was significant. Only 2% of Boston respondents were Muslim, as opposed to 73% in our study, but religion was not a significant factor in our analysis. (The only place where it factored was a single item in the CHAID analysis where Christian religion was associated with a less positive attitude). It is further worth noting that our respondents were not asked about the specific content of the spiritual care provided.

An alternative means of examining our results is by comparison with other Middle Eastern [31–37] and Muslim-population studies [38] regarding staff attitudes toward and actual provision of spiritual care. Although a number of these

Middle Eastern studies used the same measure, the Spirituality and Spiritual Care Rating Scale, there are large differences in the results from country to country. Unfortunately, direct comparison between our study and these studies is difficult because the items are not precisely similar enough. Notably, many of these studies shared relatively lower scores for r/s referrals [31, 33, 39]. Several studies suggest that in this region, respondents may strongly link together religion and spirituality [32, 37]. Scores for encouraging religious practice, including prayer, were generally high, whereas scores for actively engaging in religious practice with patients, including praying with them, were significantly lower [35, 36, 38].

Not surprisingly, the actual levels of integration of professional spiritual caregivers into health care facilities in the Middle East were much lower than in the West [40], as was the level of familiarity with the profession [41]. Yet, because of the positive inclination (68%) to integrate such professionals into the staff and the expression of very high levels of interest (80%) in learning more about the field, this area deserves attention.

Our research did not examine the ways in which each respective culture and country understands and relates to specific terms used in the study measure. The valence of terms such as faith, beliefs, and prayer is likely to vary between cultures, and this variance may obscure to some extent the real meaning of the results. In addition, as the study was conducted among oncology staff, its results are not necessarily applicable to other medical contexts.

We chose not to analyze the results country by country, in part because some countries had much smaller sample sizes than others. Although we searched statistically for alternative groupings, the most repeatedly significant grouping found was the HDI, which was found to be even more significant than we had theorized. As seen by its being the strongest factor in a majority of the CHAID analyses, as well as in the multivariate analysis of actual care provision, HDI is clearly the strongest factor identified in this study.

## Conclusions

A country's level of development is a key factor influencing both the extent to which oncology physicians and nurses in that country provide spiritual care and their attitudes as to which specific kinds of spiritual care are more or less appropriate. Respondents from countries ranked lower on the HDI were more likely to provide spiritual care and had relatively positive attitudes toward praying with patients. Respondents from countries with higher HDI had relatively more positive attitudes toward spiritual care interventions involving gathering information that could then be applied as part of patient care. Physicians and nurses across the Middle East value spiritual care and desire further training in this area, and the HDI

should be seen as a key factor when designing suitable educational programs for a given country.

## Implications for practice

The current study demonstrated that lower ranking in the HDI is surprisingly associated with increased spiritual care provision by physicians and nurses. In addition, physicians and nurses across the Middle East value spiritual care and desire further training in this area.

Given these findings, interventional studies intended to increase staff spiritual care provision must factor in HDI in study design and in comparing results cross-culturally. When designing staff spiritual care educational programs for a given country, one must account for staff attitudes toward which kinds of spiritual care are more or less appropriate, correlating with that country's HDI. Although increasing staff spiritual care provision is an agreed-upon goal [2] that demands increased training efforts worldwide, it is not necessary for all types of spiritual care to be encouraged equally across cultural settings, rather spiritual care training and provision should be done in the most culturally matched way possible. Thus, we suggest that training efforts give varying weight to the different elements of spiritual care provision in keeping with current attitudes found in that country's medical and general culture.

**Acknowledgements** We extend our appreciation to the researchers who designed the Religion and Spirituality in Cancer Care study for their permission to use that questionnaire. We also thank the Middle East Cancer Consortium and Technion-Israel Institute of Technology in Haifa for their support. Special thanks go particularly to Mrs. Genoveba Breitstein for her meticulous administrative work throughout.

## Compliance with ethical standards

**Conflict of interest** The authors declare that they have no conflict of interest.

## References

- Puchalski C, Ferrell B, Virani R, Otis-Green S, Baird P, Bull J, Chochinov H, Handzo G, Nelson-Becker H, Prince-Paul M, Pugliese K, Sulmasy D (2009) Improving the quality of spiritual care as a dimension of palliative care: the report of the Consensus Conference. *J Palliat Med* 12:885–904
- National Consensus Project for Quality Palliative Care (2018) Clinical practice guidelines for quality palliative care, 4th edn. National Coalition for Hospice and Palliative Care, Richmond, VA <https://www.nationalcoalitionhpc.org/ncp>. Accessed 31 Dec 2018
- Balboni MJ, Sullivan A, Amobi A, Phelps AC, Gorman DP, Zollfrank A, Peteet JR, Prigerson HG, Vanderweele TJ, Balboni TA (2013) Why is spiritual care infrequent at the end of life? Spiritual care perceptions among patients, nurses, and physicians and the role of training. *J Clin Oncol* 31:461–467
- Phelps AC, Lauderdale KE, Alcom S, Dillinger J, Balboni MT, van Wert M, Vanderweele TJ, Balboni TA (2012) Addressing spirituality within the care of patients at the end of life: perspectives of patients with advanced cancer, oncologists, and oncology nurses. *J Clin Oncol* 30:2538–2544
- McCord G, Gilchrist VJ, Grossman SD, King BD, McCormick K, Oprandi AM, Schrop SL, Selius BA, Smucker DO, Weldy DL, Amom M, Carter MA, Deak AJ, Hefzy H, Srivastava M (2004) Discussing spirituality with patients: a rational and ethical approach. *Ann Fam Med* 2:356–361
- Best M, Butow P, Olver I (2015) Do patients want doctors to talk about spirituality? A systematic literature review. *Patient Educ Couns* 98:1320–1328
- Balboni MJ, Sullivan A, Enzinger AC, Epstein-Peterson ZD, Tseng YD, Mitchell C, Niska J, Zollfrank A, Vanderweele TJ, Balboni TA (2014) Nurse and physician barriers to spiritual care provision at the end of life. *J Pain Symptom Manag* 48:400–410
- Selby D, Seccaraccia D, Huth J, Kurppa K, Fitch M (2017) Patient versus health care provider perspectives on spirituality and spiritual care: the potential to miss the moment. *Ann Palliat Med* 6:143–152
- Taylor EJ, Mamier I, Ricci-Allegra P, Foith J (2017) Self-reported frequency of nurse-provided spiritual care. *Appl Nurs Res* 35:30–35
- Smyre CL, Tak HJ, Dang AP, Curlin FA, Yoon JD (2018) Physicians' opinions on engaging patients' religious and spiritual concerns: a national survey. *J Pain Symptom Manag* 55:897–905
- Gallison BS, Xu Y, Jurgens CY, Boyle SM (2013) Acute care nurses' spiritual care practices. *J Holist Nurs* 31:95–103
- Tanyi RA, McKenzie M, Chapek C (2009) How family practice physicians, nurse practitioners, and physician assistants incorporate spiritual care in practice. *J Am Acad Nurse Pract* 21:690–697
- King SD, Dimmers MA, Langer S, Murphy PE (2013) Doctors' attentiveness to the spirituality/religion of their patients in pediatric and oncology settings in the Northwest USA. *J Health Care Chaplain* 19:140–164
- Ramondetta LM, Sun C, Surbone A, Olver I, Ripamonti C, Konishi T, Baider L, Johnson J (2013) Surprising results regarding MASCC members' beliefs about spiritual care. *Support Care Cancer* 21:2991–2998
- Puchalski CM (2013) Integrating spirituality into patient care: an essential element of person-centered care. *Pol Arch Med Wewn* 123:491–497
- Timmins F, Caldeira S (2017) Assessing the spiritual needs of patients. *Nurs Stand* 31:47–53
- Ramezani M, Ahmadi F, Mohammadi E, Kazemnejad A (2014) Spiritual care in nursing: a concept analysis. *Int Nurs Rev* 61:211–219
- Caldeira S, Timmins F (2017) Implementing spiritual care interventions. *Nurs Stand* 31:54–60
- Ronaldson S, Hayes L, Aggar C, Green J, Carey M (2017) Palliative care nurses' spiritual caring interventions: a conceptual understanding. *Int J Palliat Nurs* 23:194–201
- Selman L, Siegert R, Harding R, Gysels M, Speck P, Higginson IJ (2011) A psychometric evaluation of measures of spirituality validated in culturally diverse palliative care populations. *J Pain Symptom Manag* 42:604–622
- Schultz M, Meged-Book T, Mashiach T, Bar-Sela G (2018) The cultural expression of spiritual distress in Israel. *Support Care Cancer* 26(9):3187–3193
- Pew Research Center (2018). Americans are far more religious than adults in other wealthy nations. <http://www.pewresearch.org/fact-tank/2018/07/31/americans-are-far-more-religious-than-adults-in-other-wealthy-nations/>. Accessed 31 Dec 2018
- Ddungu H (2011) Palliative care: what approaches are suitable in developing countries? *Br J Haematol* 154(6):728–735



24. <http://hdr.undp.org/en/content/human-development-index-hdi>. Accessed 27 Mar 2018
25. Puchalski CM, Vitillo R, Hull SK, Reller N (2014) Improving the spiritual dimension of whole person care: reaching national and international consensus. *J Palliat Med* 17:642–656
26. Bar-Sela G, Schultz M, Elshamy K et al (2018) Training for awareness of one's own spirituality: a key factor in overcoming barriers to the provision of spiritual care to advanced cancer patients by doctors and nurses. *Palliat Support Care* 6:1–8
27. Epstein-Peterson ZD, Sullivan AJ, Enzinger AC, Trevino KM, Zollfrank AA, Balboni MJ, VanderWeele TJ, Balboni TA (2015) Examining forms of spiritual care provided in the advanced cancer setting. *Am J Hosp Palliat Care* 32:750–757
28. Ronaldson S, Hayes L, Aggar C, Green J, Carey M (2012) Spirituality and spiritual caring: nurses' perspectives and practice in palliative and acute care environments. *J Clin Nurs* 21:2126–2135
29. Lundmark M (2006) Attitudes to spiritual care among nursing staff in a Swedish oncology clinic. *J Clin Nurs* 15:863–874
30. Best M, Butow P, Olver I (2016) Palliative care specialists' beliefs about spiritual care. *Support Care Cancer* 24:3295–3306
31. Zakaria Kiaei M, Salehi A, Moosazadeh Nasrabadi A, Whitehead D, Azmal M, Kalhor R, Shah Bahrami E (2015) Spirituality and spiritual care in Iran: nurses' perceptions and barriers. *Int Nurs Rev* 62:584–592
32. Melhem GAB, Zeilani RS, Zaqqout OA, Aljwad AI, Shawagfeh MQ, Al-Rahim MA (2016) Nurses' perceptions of spirituality and spiritual care giving: a comparison study among all health care sectors in Jordan. *Indian J Palliat Care* 22:42–49
33. Ozbasaran F, Ergul S, Temel AB, Aslan GG, Coban A (2011) Turkish nurses' perceptions of spirituality and spiritual care. *J Clin Nurs* 20:3102–3110
34. Cruz JP, Alshammari F, Alotaibi KA, Colet PC (2017) Spirituality and spiritual care perspectives among baccalaureate nursing students in Saudi Arabia: a cross-sectional study. *Nurse Educ Today* 49:156–162
35. Musa AS (2017) Spiritual care intervention and spiritual well-being. *J Holist Nurs* 35:53–61
36. Iranmanesh S, Tirgari B, Cheraghi MA (2012) Developing and testing a spiritual care questionnaire in the Iranian context. *J Relig Health* 51:1104–1116
37. Abu-El-Noor N (2016) ICU nurses' perceptions and practice of spiritual care at the end of life: implications for policy change. *Online J Issues Nurs* 21:6
38. Herlianita R, Yen M, Chen CH, Fetzer SJ, Lin EC (2018) Perception of spirituality and spiritual care among Muslim nurses in Indonesia. *J Relig Health* 57:762–773
39. Akgün Şahin Z, Kardaş Özdemir F (2016) Spirituality and spiritual care: a descriptive survey of nursing practices in Turkey. *Contemp Nurse* 52:454–461
40. Cadge W, Freese J, Christakis NA (2008) The provision of hospital chaplaincy in the United States: a national overview. *South Med J* 101:626–630
41. Fitchett G, Rasinski K, Cadge W, Curlin FA (2009) Physicians' experience and satisfaction with chaplains: a national survey. *Arch Intern Med* 169:1808–1810

**Publisher's note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

## Affiliations

Gil Bar-Sela<sup>1</sup>  · Michael J. Schultz<sup>2</sup> · Karima Elshamy<sup>3</sup> · Maryam Rassouli<sup>4</sup> · Eran Ben-Arye<sup>5</sup> · Myrna Doumit<sup>6</sup> · Nahla Gafer<sup>7</sup> · Alaa Albashayreh<sup>8</sup> · Ibtisam Ghayeb<sup>9</sup> · Ibrahim Turker<sup>10</sup> · Gulcin Ozalp<sup>10</sup> · Sultan Kav<sup>11</sup> · Rasha Fahmi<sup>12</sup> · Sophia Nestoros<sup>13</sup> · Hasanein Ghali<sup>14</sup> · Layth Mula-Hussain<sup>15</sup> · Ilana Shazar<sup>16</sup> · Rana Obeidat<sup>17</sup> · Rehana Punjwani<sup>18</sup> · Mohamad Khleif<sup>19</sup> · Gulbeyaz Can<sup>20</sup> · Gonca Tuncel<sup>10</sup> · Haris Charalambous<sup>21</sup> · Safa Faraj<sup>14</sup> · Neophyta Keoppi<sup>22</sup> · Mazin Al-Jadiry<sup>14</sup> · Sergey Postovsky<sup>23</sup> · Ma'an Al-Omari<sup>24</sup> · Samaher Razzaq<sup>14</sup> · Hani Ayyash<sup>25</sup> · Khaled Khader<sup>26</sup> · Rejin Kebudi<sup>27</sup> · Suha Omran<sup>28</sup> · Osaid Rasheed<sup>29</sup> · Mohammed Qadire<sup>30</sup> · Ahmet Ozet<sup>31</sup> · Michael Silbermann<sup>32</sup>

<sup>1</sup> Cancer Center, Emek Medical Center, Afula, Israel

<sup>2</sup> Division of Oncology, Rambam Health Care Campus, Haifa, Israel

<sup>3</sup> Faculty of Nursing, Mansoura University, Mansoura, Egypt

<sup>4</sup> Cancer Research Center, Shahid Beheshti University of Medical Sciences, Tehran, Islamic Republic of Iran

<sup>5</sup> The Oncology Service, Lin Medical Center, Haifa, Israel

<sup>6</sup> Alice Ramez Chagoury School of Nursing, Lebanese American University, Beirut, Lebanon

<sup>7</sup> Radiation and Isotope Center, Khartoum, Sudan

<sup>8</sup> College of Nursing, Sultan Qaboos University, Muscat, Sultanate of Oman

<sup>9</sup> Makassed Charitable Hospital, Bethlehem, West Bank, Palestine

<sup>10</sup> Abdurrahman Yurtaslan Ankara Oncology Training and Research Hospital, Ankara, Turkey

<sup>11</sup> Faculty of Health Sciences, Department of Nursing, Baskent University, Ankara, Turkey

<sup>12</sup> El-Salam Oncology Center, Cairo, Egypt

<sup>13</sup> Cyprus Anti-Cancer Society, Avodaphnousa Hospice, Nicosia, Cyprus

<sup>14</sup> Children's Welfare Teaching Hospital, Baghdad College of Medicine, Baghdad, Iraq

<sup>15</sup> Cross Cancer Institute, University of Alberta, Edmonton, Canada

- <sup>16</sup> Department of Hematology, Rambam Health Care Campus, Haifa, Israel
- <sup>17</sup> Faculty of Nursing, Zarqa University, Zarqa, Jordan
- <sup>18</sup> Children Cancer Hospital, Karachi, Pakistan
- <sup>19</sup> Al-Sadeel Society for Palliative Care, Bethlehem, West Bank, Palestine
- <sup>20</sup> Florence Nightingale Faculty of Nursing, Istanbul University, Istanbul, Turkey
- <sup>21</sup> Bank of Cyprus Oncology Center, Nicosia, Cyprus
- <sup>22</sup> Cyprus Anti-Cancer Society, Nicosia, Cyprus
- <sup>23</sup> Ruth Rappaport Children's Hospital, Rambam Health Care Campus, Haifa, Israel
- <sup>24</sup> King Abdullah University Hospital, Irbid, Jordan
- <sup>25</sup> European Khan Yunis Hospital, Khan Yunis, Gaza Strip, Palestine
- <sup>26</sup> Taif University, Taif, Saudi Arabia
- <sup>27</sup> Cerrahpasa Medical Faculty & Oncology Institute, Istanbul University, Istanbul, Turkey
- <sup>28</sup> Faculty of Nursing, Jordan University for Science and Technology, Irbid, Jordan
- <sup>29</sup> Abu Dis and Al-Ahli Hospital, Al Quds University, Hebron, West Bank, Palestine
- <sup>30</sup> Faculty of Nursing, Al-Bayt University, Mafraq, Jordan
- <sup>31</sup> Tibbi Onkoloji Bilim Dali, Gazi Universitesi Tip Fakultesi, Ankara, Turkey
- <sup>32</sup> Middle East Cancer Consortium and Technion–Israel Institute of Technology, Haifa, Israel

Reproduced with permission of copyright owner. Further reproduction prohibited without permission.