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Maria de Lurdes da Costa Martins; Email: milupedras@hotmail.com Do spirituality and emotional intelligence improve the perception of the ability to provide care at the end of life? The role of knowledge and self-efficacy

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Abstract

Objectives. Spirituality, emotional intelligence, and palliative care (PC) knowledge have a positive and direct influence on self-efficacy and on perception of preparation and ability to provide end-of-life (EOL) care. The aim of this work is to propose a conceptual model that relates spirituality, emotional intelligence, PC knowledge, self-efficacy, and the preparation and ability to provide EOL care by doctors and nurses.

Methods. Quantitative, exploratory, descriptive, and inferential study applied to doctors and nurses in a hospital in the north of Portugal, between May and July 2022. The data collection instrument includes a questionnaire. The relationships between latent variables were evaluated using structural equation models by the partial least squares method using the Smart PLS 3.0 software. It was obtained the previous authorization of the ethics committee.

Results. The results (n = 380) indicate that self-efficacy, spirituality, and PC knowledge have a positive influence on the ability to provide EOL care. Emotional intelligence and spirituality have a direct and positive effect on self-efficacy. There is no direct influence of emotional intelligence on the ability to provide EOL care, but emotional intelligence has an indirect effect mediated by self-efficacy.

Significance of results. Spirituality, self-efficacy, and emotional intelligence are very important for the ability of doctors and nurses to provide EOL care. The identification of predictive factors of the ability to provide EOL care and the determination of the relationship between them can improve the provision of EOL care, reduction of health costs, timely and early referral of people to PC, and increase life quality.

Introduction

With the aging of the world's population, quality of life during the final phase has become a significant issue. Recent studies indicate that people prefer to receive palliative care (PC) rather than superfluous life-prolonging treatments (Chung et al. 2017; Scala et al. 2020). Therefore, there is an increasing need for care delivery in end-of-life (EOL) care. This care is part of the PC and includes managing physical support, providing psychological, social, and spiritual support, and ensuring that the wishes of patients and families are fulfilled. Patients can have bad experiences, including a traumatic death, if their EOL care needs are unmet (Spatuzzi et al. 2017; Van Lancker et al. 2018). Families may also experience anxiety when their loved one's wishes are not followed, or they see them suffer (Ramvi and Ueland 2019).

In most countries, PC services are either under development or must be fully established (WHO 2014). Most EOL situations occur in environments not specialized in PC (Sharkey et al. 2018). Taking care of terminally ill patients and witnessing the entire process of their deterioration require health professionals to be prepared and knowledgeable. The professionals need to realize the importance of valuing their role in providing comfort care. They should be listened to and allowed to express their emotions (Raman et al. 2022).

Nurses and doctors play a vital role within the team that provides EOL care and are expected to be highly qualified professionals to provide holistic and comprehensive care to patients and families (Spatuzzi et al. 2017). Practicing EOL care is considered difficult for

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patients and professionals because it is challenging to develop a passion for care during these troubled times (Liu and Chiang 2017). Professionals who provide EOL care can be seen as vulnerable or carers of suffering, because sometimes they have negative feelings about death and EOL and gaps in curricular structure hinder preparedness for PC and EOL communication (Corradi et al. 2021). On the other hand, cultural aspects can also influence the provision of EOL care by not encouraging professionals to discuss issues associated with death; instead, they are expected to give unrealistic hope to EOL patients (Dong et al. 2016).

Thus, identifying factors influencing the preparation and ability to provide EOL care is crucial. The knowledge, training, education (Hussin et al. 2018), attitudes, and positive beliefs (Andersson et al. 2016; Oppert et al. 2018) have been explored very timidly, and they are associated with providing effective and high-quality EOL care. Other factors, such as PC experience, enhanced skills, and training (Oppert et al. 2018) emotional and communication skills to deal with patients and their families' psychological and emotional distress, are necessary for effective EOL care (Hussin et al. 2018).

Determining other relationships, PC knowledge, self-efficacy, spirituality, emotional intelligence, and EOL care performance (Rhee 2015), is practically non-existent, or current data are minimal. The self-efficacy theory assumes that increasing knowledge, enhancing attitudes, and modeling appropriate behaviors can facilitate changes in clinician performance. However, it is unclear whether the intervention had a meaningful impact on their expertise in PC or ability to overcome institutional barriers to providing effective EOL care (Azoulay and Siegel 2011). We currently know that to improve self-efficacy in PC improvement in knowledge and facilitation of positive attitudes are needed (Kim et al. 2023). Preliminary studies (Kang and Choi 2020) indicate that emotional intelligence has a predictive effect and a positive correlation on the perception of PC of future health professionals, and PC knowledge has a positive and direct influence on the ability to provide EOL care (Kim and Hwang 2014).

To fill the gap in the literature, this investigation analyses the impact of spirituality, emotional intelligence, PC knowledge, and self-efficacy on health professionals' preparation and ability to provide EOL care. The perception of the structural equation model (SEM) of the relationships among study variables can be essential for defining the factors that inhibit or enhance the preparation and capacity of health professionals in providing care in the last hours or days of life.

Methods

Study design

This study adopted a descriptive cross-sectional research design conducted in a hospital in the north of Portugal in 2022.

Setting and participants

The target population of this study was doctors and nurses working in Portugal, in services likely to have contact with EOL patients (Table 1). We chose to carry out our work in a differentiated hospital in the north of Portugal with a large area of coverage and with a palliative medicine service, constituting this group our universe.

Ethical considerations

After obtaining the approval of the ethical committees and the permission to enter the hospital, the researchers invited all eligible

Table 1. Criteria for study participation

Inclusion criteria	Exclusion criteria
Doctor or nurse with an employment relationship with the institution	Healthcare professionals who are absent from the institution
Provided EOL care for at least 1 patient	Working in pediatric service

nurses and doctors to participate. The researchers explained the study details and the confidentiality and anonymity of the participants. Procedures were adopted to obtain written free and informed consent from participants, prior to data collection.

Data collection

Regarding the data collection instruments, a self-completion questionnaire was carried out and applied between May and July 2022. A total of 710 questionnaires were distributed. The response rate was 55% (391 completed questionnaires), with 380 valid questionnaires.

Measurements

All variables were measured on 5-point Likert scales from the position: 1 – strongly disagree; 2 – partially disagree; 3 – neither agree nor disagree; 4 – partially agree, and 5 – completely agree, except for the spirituality scale whose items were evaluated on a numeric scale from 0 to 10 and PC knowledge scale (dichotomous scale: correct and incorrect). Higher values on the Likert scale correspond to higher indices of the variable.

The spirituality was measured using the Hodge (2003) scale. This Intrinsic Spirituality Scale comprises 6 items and assesses the degree to which spirituality functions as an individual's primary motive for both theistic and nontheistic populations, both within and outside religious structures. Participants read an incomplete statement (e.g., "Spirituality is ...") and response options range from 0 to 10, with 0 indicating low levels of spirituality (e.g., "It's not part of my life") and 10 indicating high levels of spirituality (e.g., "The main reason for my life, directing all other aspects of my life"). Three statements were put in reverse.

The concept of emotional intelligence was measured based on the Wong and Law Emotional Intelligence Scale (WLEIS) and validated by Rodrigues et al. (2011). The WLEIS consists of 16 items and seeks to measure the knowledge that individuals have about their own emotional abilities rather than their actual capabilities. The WLEIS comprises 4 dimensions, with 4 items each: assessment and expression of one's own emotions; assessing and recognizing emotions in others; regulation of one's own emotions; and using emotions to facilitate performance.

The self-efficacy and PC knowledge were measured with Bonn Palliative Care Knowledge Test (BPW) adapted and validated for the Portuguese population (Minosso et al. 2017). This is a 15-item measure of self-efficacy and a 23-item instrument designed to measure knowledge of PC toward providing care for terminally ill persons and their families. It consists of information on the philosophy of PC and physical/psychosocial symptom management.

For the preparation and ability to provide EOL care, we used the Perceptions of Preparedness and Ability to Care for the Dying R-I Scale (Todaro-Franceschi 2013), with 6 items. This consists of 3 items which include communication, symptom management skills, and competence.

Table 2. Participant demographics (n = 380)

Characteristics	n	(%)
Male sex, N (%)	312	(82.11)
Age (years), N (%)		
22-29	82	(21.58)
30-44	205	(53.95)
45-59	83	(21.84)
≥60	10	(2.63)
Marital status, N (%)		
Single	151	(39.74)
Married/partnered	214	(56.32)
Divorced	14	(3.68)
Widowed	1	(0.26)
Professional, N (%)		
Nurse	302	(79.47)
Doctor	78	(20.53)
Educational level		
University (4 up to 6 years)	204	(53.68)
Postgraduate or master's	174	(45.79)
Doctorate	2	(0.53)
Years of practice, N (%)		
0-5	92	(24.21)
6-15	152	(40.00)
16-25	72	(18.95)
≥26	64	(16.84)
PC experiences, no, N (%)	288	(75.79)
PC training, no, N (%)	298	(78.42)

Data analysis

The relationships between the variables were evaluated with the SEM technique by the partial least squares (PLS) method using the Smart PLS 3.0 software, while all the other analyses were performed with IBM SPSS Statistics for Windows (V.26).

Results

Sample characterization

According to Table 2 of the 380 doctors and nurses participating in the study, only 24.21% have work experience in the PC and 21.58% have specific training in this area. The mean age is 37.38 years (± 9.93 years).

Level of emotional intelligence, self-efficacy, spirituality, PC knowledge and preparation, and ability to provide EOL care

The mean (SD) scores of emotional intelligence, self-efficacy, spirituality, PC knowledge, and preparation and ability to provide EOL care are represented in Table 3. The dimension "Assessment of own emotions" was the one that most contributed to the average result obtained of 3.88 (± 0.83) for emotional intelligence. This average

value is higher than the midpoint of the scale (3), showing that the responding professionals have moderate to high levels of emotional intelligence. On the other hand, the dimension with the lowest value was related to "Regulation of emotions" (3.53 \pm 0.87). With regard to the self-efficacy variable, the responses obtained indicate an average value of 3.90 \pm 0.82, with all items having a percentage value greater than the midpoint of the scale. Taking into account the average values, a high degree of perceived self-efficacy is observed in health professionals. The mean value of spirituality was 5.06, slightly above the midpoint of the scale (5.0). Regarding PC knowledge, the respondents revealed a median level of knowledge (3.29 \pm 1.10). Overall, the scale of perception of preparation and ability to provide EOL care had a value of 3.25 \pm 0.95, so professionals are moderately prepared and qualified to provide EOL care.

Measurement model assessment

Confirmatory factor analysis was conducted for the measurement model. The assessment of the quality of the measurement model for each construct was done by analyzing the convergent and discriminant validity. In the second step, we estimated the structural model. Therefore, the factor loadings (λ) are then analyzed, and values above 0.708 are recommended (Hair et al. 2019). After an analysis, some items from the emotional intelligence (item 7) and several items from the self-efficacy scales were eliminated. In accordance to Table 4, all remaining items have factors loading greater than 0.708 (varying between a minimum of 0.731 and a maximum of 0.914). The internal consistency, ρA, greater than 0.7 (Dijkstra and Henseler 2015) was used. The constructs under study confirm ρA values between 0.822 and 0.949. The metric used for the assessment of convergent validity was the average variance extracted (AVE). All items have a factor loading greater than the square root of 0.5, and the AVE is necessarily greater than 0.5 in all constructs, ensuring convergent validity.

Finally, the discriminant or divergent validity was assessed. Henseler et al. (2015) propose a value lower than 0.90 in the constructs from the same conceptual domain and lower than 0.85 from different domains. All the heterotrait–monotrait ratio correlation values are less than 0.85 (0.190 between 0.685) (Table 5).

Structural model results

Through the proposal of a conceptual model, it is intended to investigate the influence of spirituality, emotional intelligence, PC knowledge, and self-efficacy on the preparation and ability to provide EOL care by nurses and doctors.

Considering that the evaluation of the measurement model was satisfactory, the next step consists of analyzing the structural model. The standard evaluation criteria for this model include the coefficient of determination (R^2), as well as the statistical significance and relevance of the structural coefficients (β) (Hair et al. 2019). R^2 measures the variance that is explained in each of the endogenous constructs, ranging from 0 to 1, with higher values indicating greater explanatory power. As a guideline, R^2 values greater than 0.75, 0.50, and 0.25 can be considered substantial, moderate, and weak, respectively (Hair et al. 2019). Table 6 shows the R^2 values of the endogenous variables, showing that 45.3% of the variance in the perception of the ability to provide EOL care and 29.7% of the variance in self-efficacy are explained by the model.

Figure 1 shows the mediating effect of self-efficacy in the relationship between the variables. Self-efficacy ($\beta = 0.553$, p < 0.001),

Table 3. Reliability and validity of the constructs

Construct		Indicator	λ	ρΑ	AVE
Emotional Own intelligence emotions		EI1 – I have a good sense of why I have certain feelings most of the time.	0.805	0.874	0.704
		EI2 – I have good understanding of my own emotions.	0.890		
		EI3 – I really understand what I feel.	0.894		
	EI4 – I always know whether or not I am happy.	0.760			
	Emotions in others	EI5 – I always know my friends' emotions from their behavior.	0.852	0.824	0.731
		EI6 – I am a good observer of others' emotions.	0.859		
		EI8 – I have good understanding of the emotions of people around me.	0.854		
	Use of emotions	EI9 – I always set goals for myself and then try my best to achieve them.	0.773	0.882	0.719
		EI10 – I always tell myself I am a competent person.	0.863		
		EI11 – I am a self-motivated person.	0.874	<u>—</u>	
		EI12 – I would always encourage myself to try my best.	0.877		
	Regulation of emotions	EI13 – I am able to control my temper and handle difficulties rationally.	0.865	0.904	0.776
		EI14 – I am quite capable of controlling my own emotions.	0.895		
		EI15 – I can always calm down quickly when I am very angry.	0.849		
		EI16 – I have good control of my own emotions.	0.913		
Spirituality		S1 – In terms of the questions I have about life, my spirituality answers		0.949	0.784
	S2 – Growing spirit	ually is	0.873		
_	S3 – When I am fac spirituality	red with an important decision, my	0.898	_	
	S4 – Spirituality is		0.914		
		S5 – When I think of the things that help me to grow and mature as a person, my spirituality			
	S6 – My spiritual bo	S6 – My spiritual beliefs affect			
Self-efficacy	SE7 – Identify the o	complex needs of the person at the end of appropriately.	0.841	0.899	0.647
SE9 desir SE10 life.	SE8 – Teach relaxa	SE8 – Teach relaxation strategies to a person in pain.			
		SE9 – Communicate with the person who expresses the desire to hasten death.			
		SE10 – Provide adequate oral care to people at the end of life.			
	SE12 – Identify the	SE12 – Identify the person's psychological problems.			
	SE13 – Integrate th	e cultural aspects of death and dying in at the end of life.	0.842		
Capacity EOL care		nyself highly competent in my ability to atients and families about death, dying,	0.810	0.810 0.876	
	_	omfortable listening and talking to loved ones about death, dying, and grief.	0.830		

(Continued)

Table 3. (Continued.)

Construct	Indicator	λ	ρΑ	AVE
	EOL3 – Compared to my colleagues, I have greater competence in terms of speaking and listening to patients and their loved ones about death, dying, and grief.	0.731		
	EOL4 – I rate myself as highly competent in my ability to provide pain and symptom control at the end of life.	0.802		
	EOL5 – Compared to my colleagues I have greater competence in relation to the ability to control pain and symptoms at the end of life.	0.756	_	
	EOL6 – Generally speaking, I feel capable of providing quality care to terminally ill patients and their families.	0.745	_	

Table 4. Discriminant validity of the constructs

Heterotrait-monotrait ratio of correlations (HTMT)						
Emotional intelligence						
	Own emotions	Emotions of others	Use of emotions	Regulation of emotions	Spirituality	Self-efficacy
Own emotions	0.465					
Use of emotions	0.595	0.316				
Regulation of emotions	0.496	0.538	0.453			
Spirituality	0.19	0.276	0.195	0.185		
Self-efficacy	0.395	0.502	0.268	0.490	0.275	
EOL care capacity	0.268	0.407	0.206	0.411	0.399	0.685

Table 5. Coefficient of determination (R^2) of endogenous variables

	R ²	р
Self-efficacy	0.297	< 0.001
EOL care capacity	0.453	0.000

Table 6. Descriptive statistics among emotional intelligence, self-efficacy, spirituality, PC knowledge, and preparation and ability to provide EOL care (n=380)

Variables	Mean \pm SD
Emotional intelligence	$\textbf{3.88} \pm \textbf{0.83}$
Assessment of own emotions	$\textbf{4.11} \pm \textbf{0.79}$
Evaluating emotions in others	3.89 ± 0.76
Use of emotions	3.97 ± 0.88
Regulation of emotions	$\textbf{3.53} \pm \textbf{0.87}$
Self-efficacy	3.90 ± 0.82
Spirituality	$\textbf{5.06} \pm \textbf{2.30}$
PC knowledge	3.29 ± 1.10
Preparation and ability to provide EOL care	3.25 ± 0.95

SD = standard deviation.

spirituality ($\beta=0.283, p<0.001$), and PC knowledge ($\beta=0.171, p<0.001$) positively influence the preparation and ability to provide EOL care. Emotional intelligence in dimension regulating emotions ($\beta=0.240, p<0.001$) and recognizing the emotions of others ($\beta=0.263, p<0.001$) and spirituality ($\beta=0.132, p<0.001$) directly and positively affect self-efficacy.

Discussion

The results obtained indicate a moderate average value of emotional intelligence (3.88 \pm 0.83) for the health professionals targeted by the study. Similar results were obtained in recent studies: 3.17 \pm 0.56 (Ishii and Horikawa 2019); 4.67 \pm 0.78 (Al-Ruzzieh and Ayaad 2021); 3.77 \pm 0.47 (Wang et al. 2022); and 3.33 \pm 0.50 (Park and Oh 2019). For self-efficacy, the average value was relatively high (3.90 \pm 0.82), which is in line with existing values in the literature: 3.71 \pm 0.46 (Choi and Yu 2022); 3.38 (Becker-Haimes et al. 2022; Elkhadragy et al. 2021); and 3.60 \pm 0.60 (Van der Voorn et al. 2022).

Concerning spirituality, a median value of 5.06 ± 2.30 is pointed and slightly higher in nursing (5.17 \pm 2.27). This result does not portray the existing data in the literature that indicate substantially higher values of the spirituality of doctors and nurses, namely: 7.05 ± 2.08 (Caton 2021); 7.18 ± 2.40 (Fradelos et al. 2022); and 7.71 ± 1.85 (Atarhim et al. 2019). To communicate effectively with patients, doctors and nurses need to understand how a person's spirituality and culture affect their perceptions of health and illness, particularly their desires regarding EOL care. This result reinforces the importance of including themes about spirituality in training programs for physicians and nurses, since training enhances the ability to provide and recognize the importance of spiritual care (Best et al. 2016). The level of PC knowledge obtained in this study was 3.29 \pm 1.10, being superior to other studies: 2.34 \pm 0.57 (Etafa et al. 2020); 2.23 \pm 0.23 (Menekli et al. 2021); and 2.54 \pm 0.67 (Tsao et al. 2019). Although in the last 2 decades the role of doctors and nurses has been expanded to the level of PC (Pesut et al. 2014), studies carried out with nursing students reveal reduced values of PC knowledge: 1.86 \pm 0.73 (Alwawi et al. 2022) and 2.05 \pm 0.70 (Dimoula et al. 2019). Current studies (Farmani et al. 2019; Hussin et al. 2018; Smets et al. 2018) showed that the absence of curricular

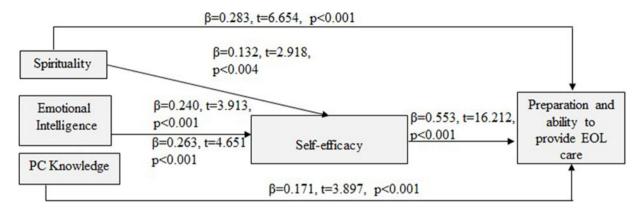


Figure 1. The mediating effect of self-efficacy on the relationships between spirituality, emotional intelligence, preparation, and ability to provide EOL care.

content and training in PC, length of professional experience, institution, individual education, and work unit significantly affect knowledge for the practice of PC and/or attitudes. Integrating theoretical and practical training in PC improves students' knowledge and creates favorable attitudes toward death, dying, and EOL care (Chover-Sierra et al. 2017; Wang et al. 2018). Educational intervention is an effective way to improve professionals' knowledge about PC (Menekli et al. 2021).

Overall, the health professionals in this study are moderately prepared and qualified to provide EOL care (3.25 \pm 0.95). These data are in accordance with the literature: 3.20 (Gelfman et al. 2021); 3.08 \pm 0.55 (Chan et al. 2018); 3.39 (Rodenbach et al. 2020); 3.30 \pm 0.98 (Tait and Hodges 2009); and 2.88 \pm 0.78 (Todaro-Franceschi 2013). Health professionals' preparation for providing EOL care involves understanding their personal beliefs about death and dying; being able to assist the patient and family; combining theoretical knowledge, personal and professional experience and available resources; balancing the dialogue between professional and personal roles; and finding strategies that make sense of the experience of dying, specifically through closure (Hall 2020). Offering PC and EOL care is a complex and challenging task for younger professionals and is strongly influenced by cultural, religious, spiritual, and social factors (Oji et al. 2022).

The variable that had the most significant impact on the perception of preparation and ability to provide EOL care was self-efficacy. The higher the EOL care stress of nurses, the higher the death anxiety (Choi et al. 2022). EOL care education increases perceived self-efficacy (Sabolish et al. 2021), comfort with EOL care and knowledge of coping resources (Lauderbaugh et al. 2023).

Self-efficacy, spirituality, and PC knowledge positively and directly influence preparation and ability to provide EOL care, and emotional intelligence positively and directly influences self-efficacy. High levels of emotional intelligence have been associated with better performance and competence in providing EOL care; regulating one's own emotions; decreasing moral distress in EOL care and also in responding appropriately to patient needs and expressing caring and empathy (Lewis 2019). Emotional intelligence affects positively the attitudes toward EOL care, as a basic reference for the development of education programs and EOL care protocols to improve EOL care among health professionals (Park and Oh 2019). Professionals with higher self-efficacy provide better safe services and patients in hospitals with a more positive safety culture experience fewer injuries (Rahmani et al. 2023).

Spirituality is the most unknown aspect of PC despite being the need that is most altered in the last moments of life. Health professionals recognize the importance of spiritual care for patients and give meaning to the actions when it comes to providing EOL care, achieving holistic care, humanizing death, and promoting a dignified end but feel little qualified to do so (García-Navarro et al. 2021; O'Brien et al. 2019). Preliminary studies found a positive correlation between professionals' spiritual care skills and the frequency of spiritual care practices (Kurtgöz et al. 2023). In the literature, 1 study by Espinoza-Venegas et al. (2016) concludes that the perception of religious belief and/or spirituality does not influence the perception of preparation and ability to provide EOL care, but another study by Khraisat et al. (2019) recognizes that greater preparation of nurses is a factor that facilitates the provision of EOL care for pediatric patients. Given these results, more investigations are needed to infer this relationship.

Spirituality has a positive and direct influence on self-efficacy. This result corroborates recent investigations (Kasapoğlu 2022; Rakhshanderou et al. 2021) emphasizing the role of spirituality and spiritual health on self-efficacy and other psychological perceptions. Self-efficacy is associated with spirituality, and these 2 attributes are strong motivators of human development (Adegbola 2011). The knowledge level of EOL care also explains the variance in EOL care self-efficacy (Hsu and Chen 2019).

Limitations

A limitation of this investigation is its cross-sectional design, which does not allow for the examination of causal relationships and feedback effects between the variables under study. Since emotional experiences are transient, a 1-time assessment cannot capture personal fluctuations in employees' daily emotional experiences. Thus, future studies could use a longitudinal design and a day-to-day approach to capture affective experiences at work more accurately. On the other hand, the study was conducted based on a convenience sample based on the perceptions of professionals from a single organization, preventing us from generalizing the results.

To avoid response bias, we previously applied a pre-test and introduced questions in reverse order, ensuring anonymity, and a neutral tone, with sufficient response options (Likert scale) and not revealing too much about the research question.

Conclusion

"Do spirituality and emotional intelligence improve the perception of the ability to provide care at the EOL? In accordance with the correlations and the causal model, found in this study the total effects of the variables, the strongest and most positive effect was self-efficacy, which is conceptually closest to the ability to provide EOL care. This study measured a moderate mean value of perceptions about spirituality, emotional intelligence, PC knowledge, self-efficacy and preparation, and ability to provide EOL care by healthcare professionals. Emotional intelligence and spirituality directly and positively affect self-efficacy. Emotional intelligence has an indirect effect, mediated by self-efficacy on the ability to provide EOL care.

This study helps to identify factors that influence the capacity and ability to provide EOL care. Thus, it provides some evidence that may be useful in creating work environments that improve the staff's spiritual well-being, emotional intelligence, and self-efficacy toward dying patients and their families. The study suggests that the health educational curriculum may also be enhanced to ensure students are well-prepared to support EOL care and design interventions to address spirituality and emotional intelligence, underscoring the need to include these themes in curricular bases and continuing education programs for PC within healthcare organizations.

Supplementary material. The supplementary material for this article can be found at https://doi.org/10.1017/S1478951524000257.

Data availability statement. The datasets used and analyzed during the current study are available from the corresponding author upon reasonable request.

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References

- Adegbola M (2011) Spirituality, self-efficacy, and quality of life among adults with sickle cell disease. Southern Online Journal of Nursing Research 11(1), 1–16.
- Al-Ruzzieh MA and Ayaad O (2021) Impact of nurses' emotional intelligence on the implementation of a professional practice model in cancer care. *British Journal of Nursing* **30**(19), 1110–1116. doi:10.12968/bjon.2021.30.19.1110
- Alwawi AA, Abu-Odah H and Bayuo J (2022) Palliative care knowledge and attitudes towards end-of-life care among undergraduate nursing students at Al-Quds University: Implications for Palestinian education. *International Journal of Environmental Research & Public Health* 19(15), 9563. doi:10.3390/ijerph19159563
- Andersson E, Salickiene Z and Rosengren K (2016) To be involved A qualitative study of nurses' experiences of caring for dying patients. *Nurse Education Today* 38, 144–149. doi:10.1016/j.nedt.2015.11.026
- Atarhim MA, Lee S and Copnell B (2019) An exploratory study of spirituality and spiritual care among Malaysian nurses. *Journal of Religion and Health* 58(1), 180–194. doi:10.1007/s10943-018-0624-0
- Azoulay É and Siegel MD (2011) Self-efficacy approaches to improving endof-life care for the critically ill. *American Journal of Respiratory and Critical Care Medicine* 183(3), 288–290. doi:10.1164/rccm.201010-1759ED
- Becker-Haimes EM, Wislocki K, DiDonato S, et al. (2022) Predictors of clinician-reported self-efficacy in treating trauma-exposed youth. Journal of Traumatic Stress 35(1), 109–119. doi:10.1002/jts.22688
- Best M, Butow P and Olver I (2016) Palliative care specialists' beliefs about spiritual care. Supportive Care in Cancer 24(8), 3295–3306. doi:10.1007/s00520-016-3135-0
- Caton MT (2021) The impact of spirituality, social support, and self-esteem on the resilience of Haitian nurses: Implications for nursing education. Archives of Psychiatric Nursing 35(2), 206–212. doi:10.1016/j.apnu.2020.08.006

- Chan H, Chun G, Man C, et al. (2018) Staff preparedness for providing palliative and end-of-life care in long-term care homes: Instrument development and validation. Geriatrics & Gerontology International 18(5), 745–749. doi:10.1111/ggi.13244
- Choi J, Gu M, Oh S, et al. (2022) Relationship between end-of-life care stress, death anxiety, and self-efficacy of clinical nurses in South Korea. International Journal of Environmental Research & Public Health 19(3), 1082. doi:10.3390/ijerph19031082
- Choi E and Yu S (2022) Effects of preceptors' mentoring function on novice nurses' self-efficacy and organizational commitment: A cross-sectional study. Nurse Education in Practice 64, 103431. doi:10.1016/j.nepr.2022. 103431
- Chover-Sierra E, Martínez-Sabater A and Lapeña-Moñux Y (2017) Knowledge in palliative care of nursing professionals at a Spanish hospital. Revista Latino-Americana de Enfermagem 25, e2847. doi:10.1590/1518-8345.1610.2847
- Chung RY-N, Wong EL-Y, Kiang N, et al. (2017) Knowledge, attitudes, and preferences of advance decisions, end-of-life care, and place of care and death in Hong Kong. A population-based telephone survey of 1067 adults. *Journal of the American Medical Directors Association* 18(4), 367.e19–367.e27. doi:10.1016/j.jamda.2016.12.066
- Corradi MLG, Duim E and Rodrigues CIS (2021) Death and end of life: Perceptions throughout the career about death, palliative care, and educational process. *Journal of Palliative Care* 36(4), 243–247. doi:10.1177/0825859720923435
- Dijkstra TK and Henseler J (2015) Consistent partial least squares path modeling. MIS Quarterly 39(2), 297–316.
- Dimoula M, Kotronoulas G, Katsaragakis S, et al. (2019) Undergraduate nursing students' knowledge about palliative care and attitudes towards endof-life care: A three-cohort, cross-sectional survey. Nurse Education Today 74, 7–14. doi:10.1016/j.nedt.2018.11.025
- Dong F, Zheng R, Chen X, et al. (2016) Caring for dying cancer patients in the Chinese cultural context: A qualitative study from the perspectives of physicians and nurses. European Journal of Oncology Nursing 21, 189–196. doi:10.1016/j.ejon.2015.10.003
- Elkhadragy N, Christ S, Bashawri Y, et al. (2021) Physicians' self-efficacy, beliefs and intentions to provide tobacco cessation services: A cross-sectional study in Riyadh, Saudi Arabia. Population Medicine 3(April), 1–9. doi:10.18332/popmed/134658
- Espinoza-Venegas M, Luengo-Machuca L and Sanhueza-Alvarado O (2016) Actitudes en profesionales de enfermería chilenos hacia el cuidado al final de la vida. Análisis multivariado. *Aquichan* **16**(4), 430–446. doi:10.5294/aqui. 2016.16.4.3
- Etafa W, Wakuma B, Fetensa G, et al. (2020) Nurses' knowledge about palliative care and attitude towards end-of-life care in public hospitals in Wollega zones: A multicenter cross-sectional study. PLoS One 15(10), e0238357. doi:10.1371/journal.pone.0238357
- Farmani AH, Mirhafez SR, Kavosi A, *et al.* (2019) Dataset on the nurses' knowledge, attitude and practice towards palliative care. *Data in Brief* 22, 319–325. doi:10.1016/j.dib.2018.11.133
- **Fradelos E, Alexandropoulou C-A, Kontopoulou L**, *et al.* (2022) Factors affecting Greek nurses' caring behaviors: The role of nurses' spirituality and the spiritual climate of hospitals. *Journal of Religion and Health* **61**(3), 1816–1830. doi:10.1007/s10943-022-01503-x
- García-Navarro EB, Medina-Ortega A and García Navarro S (2021) Spirituality in patients at the end of life—Is it necessary? A qualitative approach to the protagonists. *International Journal of Environmental Research & Public Health* 19(1), 227. doi:10.3390/ijerph19010227
- Gelfman LP, Morrison RS, Moreno J, et al. (2021) Palliative care as essential to a hospital system's pandemic preparedness planning: How to get ready for the next wave. *Journal of Palliative Medicine* **24**(5), 656–658. doi:10.1089/jpm.2020.0670
- Hair JF, Risher JJ, Sarstedt M, et al. (2019) When to use and how to report the results of PLS-SEM. European Business Review 31(1), 2–24. doi:10.1108/EBR-11-2018-0203
- Hall MA (2020) Critical care registered nurses' preparedness in the provision of end-of-life care. *Dimensions of Critical Care Nursing* 39(2), 116–125. doi:10.1097/DCC.00000000000000406

- Henseler J, Ringle CM and Sarstedt M (2015) A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science* 43(1), 115–135. doi:10.1007/s11747-014-0403-8
- Hodge DR (2003) The intrinsic spirituality scale. Journal of Social Service Research 30(1), 41–61. doi:10.1300/J079v30n01_03
- Hsu H-Y and Chen Y-M (2019) The correlates of nurses' self-efficacy for endof-life care. *Hu Li Za Zhi* **65**(6), 32–43. doi:10.6224/JN.201910 66(5).06
- **Hussin EOD, Wong LP, Chong MC**, *et al.* (2018) Factors associated with nurses' perceptions about quality of end-of-life care. *International Nursing Review* **65**(2), 200–208. doi:10.1111/inr.12428
- Ishii S and Horikawa E (2019) The emotional intelligence of Japanese mental health nurses. Frontiers in Psychology 10, 1–6. doi:10.3389/fpsyg.2019.02004
- Kang S-W and Choi E-J (2020) The relationship of perceptions of hospice and palliative care with emotional intelligence and cognitive empathy in nursing students. *Journal of Hospice & Palliative Nursing* **22**(3), 213–219. doi:10.1097/NJH.0000000000000645
- **Kasapoğlu F** (2022) The relationship among spirituality, self-efficacy, COVID-19 anxiety, and hopelessness during the COVID-19 process in Turkey: A path analysis. *Journal of Religion and Health* **61**(1), 767–785. doi:10.1007/s10943-021-01472-7
- Khraisat OM, Alkhawaldeh A and Abuhammad S (2019) Spirituality-focused end-of-life care among paediatric patients: Evidence from Saudi Arabia? International Journal of Palliative Nursing 25(12), 610–616. doi:10.12968/ ijpn.2019.25.12.610
- Kim J, Heo S, Yang J, *et al.* (2023) The moderating effect of attitudes in the relationship between knowledge and self-efficacy in palliative care among nurses: A cross-sectional, correlational study. *PLoS One* **18**(10), e0292135. doi:10.1371/journal.pone.0292135
- Kim S and Hwang W (2014) Palliative care for those with heart failure: Nurses' knowledge, attitude, and preparedness to practice. European Journal of Cardiovascular Nursing 13(2), 124–133. doi:10.1177/14745151135 19521
- Kurtgöz A, Keten Edis E and Erarslan R (2023) Spiritual care competencies and the frequency of spiritual care practices of nurses in Turkey. *Journal of Religion and Health* 1–8. doi:10.1007/s10943-023-01884-7
- Lauderbaugh D, Popien T and Doshi A (2023) Effect of end-of-life care education on perceived self-efficacy of the pediatric respiratory therapist. Canadian Journal of Respiratory Therapy 59, 66–69. doi:10.29390/cjrt-2022-001
- Lewis SL (2019) Emotional intelligence in neonatal intensive care unit nurses:

 Decreasing moral distress in end-of-life care and laying a foundation for improved outcomes. *Journal of Hospice & Palliative Nursing* 21(4), 250–256. doi:10.1097/NJH.0000000000000061
- Liu Y-C and Chiang -H-H (2017) From vulnerability to passion in the endof-life care: The lived experience of nurses. European Journal of Oncology Nursing 31, 30–36. doi:10.1016/j.ejon.2017.09.002
- Menekli T, Doğan R, Erce Ç, et al. (2021) Effect of educational intervention on nurses knowledge about palliative care: Quasi-experimental study. Nurse Education in Practice 51, 102991. doi:10.1016/j.nepr.2021.102991
- Minosso J, Martins M and Oliveira M (2017) Cross-cultural adaptation of the Bonn Palliative Care Knowledge Test: An instrument to assess knowledge and self-efficacy. Revista de Enfermagem Referência IV Série(13), 31–42. doi:10.12707/RIV16076
- O'Brien MR, Kinloch K, Groves KE, et al. (2019) Meeting patients' spiritual needs during end-of-life care: A qualitative study of nurses' and health-care professionals' perceptions of spiritual care training. *Journal of Clinical Nursing* 28(1–2), 182–189. doi:10.1111/jocn.14648
- Oji N, Onyeka T, Soyannwo O, *et al.* (2022) Perspectives, perceived self-efficacy, and preparedness of newly qualified physicians' in practising palliative care—A qualitative study. *BMC Palliative Care* **21**(141), 1–19. doi:10.1186/s12904-022-01028-w
- Oppert ML, O'Keeffe VJ and Duong D (2018) Knowledge, facilitators and barriers to the practice of person-centred care in aged care workers: A qualitative study. *Geriatric Nursing* 39(6), 683–688. doi:10.1016/j.gerinurse.2018.05.004
- Park J and Oh J (2019) Influence of perceptions of death, end-of-life care stress, and emotional intelligence on attitudes towards end-of-life care among

- nurses in the neonatal intensive care unit. Child Health Nursing Research 25(1), 38–47. doi:10.4094/chnr.2019.25.1.38
- Pesut B, Sawatzky R, Stajduhar KI, et al. (2014) Educating nurses for palliative care. Journal of Hospice & Palliative Nursing 16(1), 47–54. doi:10.1097/NJH. 0000000000000021
- Rahmani V, Arjmand A, Arabsorkhi M, et al. (2023) Investigating the relationship between patient safety culture and self-efficacy of operating room: A cross-sectional study on 228 perioperative nurses in Iran. Perioperative Care and Operating Room Management 33, 100343. doi:10.1016/j.pcorm. 2023 100343
- Rakhshanderou S, Safari-Moradabadi A and Ghaffari M (2021) Structural equation modeling of the spirituality and self-efficacy among college students. *Journal of Religion and Health* **60**(1), 488–499. doi:10.1007/s10943-020-00984-y
- Raman U, Ebby CG, Ahmad S, et al. (2022) Resident perspectives on palliative care at an Urban Teaching Hospital. *Journal of Palliative Care* **37**(3), 443–446. doi:10.1177/08258597211059759
- Ramvi E and Ueland VI (2019) Between the patient and the next of kin in endof-life care: A critical study based on feminist theory. *Nursing Ethics* **26**(1), 201–211. doi:10.1177/0969733016688939
- Rhee YJ (2015) Hospice and palliative care services in South Korea supported by the National Health Insurance (NHI) program. *Health* **07**(06), 689–695. doi:10.4236/health.2015.76082
- Rodenbach R, Kavalieratos D, Tamber A, et al. (2020) Coaching palliative care conversations: Evaluating the impact on resident preparedness and goals-of-care conversations. *Journal of Palliative Medicine* **23**(2), 220–225. doi:10. 1089/jpm.2019.0165
- Rodrigues N, Rebelo T and Coelho J (2011) Adaptação da Escala de Inteligência Emocional de Wong e Law (WLEIS) e análise da sua estrutura factorial e fiabilidade numa amostra portuguesa. *Psychologia* 55, 189–207.
- Sabolish R, Wilson J and Caldwell H (2021) They're dying: Now what? Improving nursing knowledge and self-efficacy in end-of-life care (QI702). *Journal of Pain and Symptom Management.* **61**(3), 655. doi:10.1016/j. ipainsymman.2021.01.038
- Scala R, Ciarleglio G, Maccari U, *et al.* (2020) Ventilator support and oxygen therapy in palliative and end-of-life care in the elderly. *Turkish Thoracic Journal* **21**(1), 54–60. doi:10.5152/TurkThoracJ.2020.201401
- Sharkey L, Loring B, Cowan M, et al. (2018) National palliative care capacities around the world: Results from the World Health Organization Noncommunicable Disease Country Capacity Survey. Palliative Medicine 32(1), 106–113. doi:10.1177/0269216317716060
- Smets T, Pivodic L, Piers R, et al. (2018) The palliative care knowledge of nursing home staff: The EU FP7 PACE cross-sectional survey in 322 nursing homes in six European countries. Palliative Medicine 32(9), 1487–1497. doi:10.1177/0269216318785295
- Spatuzzi R, Giulietti MV, Ricciuti M, et al. (2017) Quality of life and burden in family caregivers of patients with advanced cancer in active treatment settings and hospice care: A comparative study. Death Studies 41(5), 276–283. doi:10.1080/07481187.2016.1273277
- Tait GR and Hodges BD (2009) End-of-life care education for psychiatric residents: Attitudes, preparedness, and conceptualizations of dignity. *Academic Psychiatry* 33(6), 451–456. doi:10.1176/appi.ap.33.6.451
- **Todaro-Franceschi V** (2013) Critical care nurses' perceptions of preparedness and ability to care for the dying and their professional quality of life. *Dimensions of Critical Care Nursing* **32**(4), 184–190. doi:10.1097/DCC. 0b013e31829980af
- **Tsao L, Slater SE, Doyle KP**, *et al.* (2019) Palliative care–related knowledge, attitudes, and self-assessment among physicians in Vietnam. *Journal of Pain and Symptom Management.* **58**(6), 1015–1022.e10. doi:10.1016/j. jpainsymman.2019.08.001
- Van der Voorn B, Camfferman R, Seidell JC, et al. (2022) Talking with pediatric patients with overweight or obesity and their parents: Self-rated self-efficacy and perceived barriers of Dutch healthcare professionals from seven disciplines. BMC Health Services Research. 22(1), 1236. doi:10.1186/ s12913-022-08520-2
- Van Lancker A, Van Hecke A, Verhaeghe S, et al. (2018) A comparison of symptoms in older hospitalised cancer and non-cancer patients in need of

- palliative care: A secondary analysis of two cross-sectional studies. BMC Geriatrics 18(1), 40. doi:10.1186/s12877-018-0721-7
- Wang C, Lin Y, Chen I, *et al.* (2022) Mediating effect of job performance between emotional intelligence and turnover intentions among hospital nurses during the COVID-19 pandemic: A path analysis. *Collegian* **30**(2), 247–253. doi:10.1016/j.colegn.2022.09.006
- Wang L, Li C, Zhang Q, et al. (2018) Clinical nurses' attitudes towards death and caring for dying patients in China. *International Journal of Palliative Nursing* 24(1), 33–39. doi:10.12968/ijpn.2018.24.1.33
- World Health Organization (WHO) (2014) Global Atlas of Palliative Care at the End of Life, 2nd edn. Connor S and Bermedo MC (eds), Worldwide Palliative Care Alliance, 1–120.