

Palliative care: perception of teaching and evaluation of concepts among medical undergraduates

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Abstract

This study evaluates the knowledge of fourth, fifth and sixth-year medical undergraduates about palliative care and their perceptions regarding teaching of this topic. Cross-sectional observational research was conducted with 135 undergraduates from a private medical school in Belo Horizonte by means of an online questionnaire. Of the participants, 40.7% considered themselves prepared to address patient death and the bereavement of family members, 80.7% rated their level of knowledge about palliative care as mediocre and 77% said they received insufficient information on the subject. When evaluating concepts, 20% of the participants had an unsatisfactory performance, 48% acceptable and 3% excellent. Students from more advanced years and who had completed an internship in elderly health had better responses. Despite regular student performance, the internship in elderly health positively impacts the acquisition of palliative care knowledge.

Keywords: Palliative care. Education, medical. Health of the elderly. Knowledge. Geriatrics.

Resumo

Cuidados paliativos: percepção do ensino e avaliação de conceitos entre estudantes de medicina

O objetivo deste trabalho foi avaliar o conhecimento sobre cuidados paliativos de estudantes do quarto, quinto e sexto anos da graduação em medicina de uma faculdade particular de Belo Horizonte, bem como investigar suas percepções sobre o ensino do tema. Trata-se de estudo transversal observacional com aplicação de questionário on-line para 135 acadêmicos. Dentre os participantes, 40,7% consideram-se preparados para lidar com morte de pacientes e luto dos familiares, 80,7% classificam o próprio nível de conhecimento sobre cuidados paliativos como regular e 77% afirmam não ter recebido informações suficientes sobre o assunto. Ao avaliar conceitos, 20% tiveram desempenho insatisfatório, 48% aceitável e 3% excelente. Acadêmicos de anos mais avançados e que fizeram o internato em saúde do idoso apresentaram melhores respostas. Revelou-se que, apesar de o desempenho dos estudantes ser em geral regular, o internato em saúde do idoso tem impacto positivo na aquisição de conhecimento sobre cuidados paliativos.

Palavras-chave: Cuidados paliativos. Educação médica. Saúde do idoso. Conhecimento. Geriatria

Resumen

Cuidados paliativos: percepción de la enseñanza y evaluación de conceptos entre estudiantes de medicina

El objetivo de este trabajo fue evaluar el conocimiento sobre cuidados paliativos de estudiantes de cuarto, quinto y sexto curso de la carrera de medicina de una facultad privada de Belo Horizonte, así como investigar sus percepciones sobre la enseñanza del tema. Se trata de un estudio observacional transversal que utilizó un cuestionario en línea para 135 académicos. Entre los participantes, el 40,7% se considera preparado para afrontar la muerte de los pacientes y el duelo de los familiares, el 80,7% califica como regular su propio nivel de conocimiento sobre cuidados paliativos, y el 77% afirma no haber recibido suficiente información sobre el tema. Al evaluar conceptos, el 20% tuvo un desempeño insatisfactorio, el 48% aceptable y el 3% excelente. Los académicos de años más avanzados y que completaron el internado en salud del anciano presentaron mejores respuestas. Se reveló que, aunque el desempeño de los estudiantes sea generalmente regular, el internado en salud del anciano tiene impacto positivo en la adquisición de conocimiento sobre cuidados paliativos.

Palabras clave: Cuidados paliativos. Educación médica. Salud del anciano. Conocimiento. Geriatria.

The authors declare no conflict of interest.

Approval CEP-FCM-MG-CAAE 49883721.1.0000.5134

The Brazilian age structure is under change due to population aging, since the number of people aged over 60 years in 2010—older adults according to the definition of the United Nations (UN)¹ for developing countries—totaled 19.8 million, rising to 29.8 million in 2020, and should reach 42.2 million in 2030 and 67.3 million in 2050. Older adults represented 14% of the total Brazilian population in 2020 and should comprise 18.9% in 2030 and 29.4% in 2050. Chronic non-communicable diseases rates have increased as a consequence of population aging, accounting for 72% of deaths in Brazil in 2007¹⁻³.

With the higher prevalence of chronic-degenerative diseases and neoplasms, the quality of life in the disease process must be ensured, even without the guarantee of a cure, also enabling a dignified death. For this, healthcare providers must have knowledge of palliative care (PC), which consists of interdisciplinary care focused on preventing and relieving suffering and ensuring patients and families' quality of life in the face of serious or life-threatening illnesses³⁻⁶.

Palliative care can be applied in association with curative treatments and involves finding, evaluating, and treating physical, social, psychological, and spiritual symptoms that accompany the disease process. This form of care is associated with improved quality of life, in addition to possibly prolonging life without instituting futile and invasive measures for patients with incurable diseases³⁻⁶.

Some studies conducted in Brazil have shown that PC is unfortunately yet to be a part of the mandatory curriculum of health courses. According to a study conducted by Castro and collaborators⁷ on the inclusion of PC teaching in Brazilian medical schools, of the 315 medical schools registered with the Ministry of Education, only 44 (14%) present PC disciplines. These courses are distributed across 11 Brazilian states: 52% are in the Southeast, 25% in the Northeast, 18% in the South, 5% in the Midwest, and none in the North.

The predominant modality refers to a compulsory discipline, which 61% of these schools offered and, regarding the nature of the educational institution, 57% were private, a percentage similar to the total number of Brazilian medical schools. Most institutions offered the course in their third and fourth years and

the workload averaged 46.9 hours per semester. The predominant setting is the classroom, and some institutions integrate teaching-service-community and medical practice⁷.

The content of the disciplines includes thanatology, geriatrics, senescence and finitude, humanization, bioethics, pain, oncology, and chronic diseases. The study concludes that PC teaching in Brazil remains scarce, representing a barrier to medical training in line with the recommendations of international entities, the National Curriculum Guidelines, and legal frameworks within the scope of the Brazilian Unified Health System (SUS)⁷.

Healthcare providers, especially physicians, still struggle to deal with the death process and, within care teams, the very physician is responsible for coordinating the communication between professionals, patient, and family. Recognition of the death process is necessary for communication with patients and family members, ensuring autonomy and the ability to make conscious decisions at the end of life^{8,9}.

For this, physicians must recognize imminent death by diagnostic and prognostic approach tools. However, there is a fear in medicine of treating the end of life as a prognosis linked to medical training and essentially structured in the diagnosis and disease treatment, with little focus on the inevitable process of death. This can result in teams with the feeling of professional failure in the face of death^{8,9}.

Method

This is a quantitative cross-sectional observational study that used data obtained by a questionnaire formulated by the authors as a source of information. The objective was to understand the reality of knowledge about PC in fourth-, fifth-, and sixth-years undergraduate medical students at a private medical school, in Belo Horizonte/MG, that offers an internship in older adult health in its fifth year as a mandatory subject for all students.

The inclusion criteria were age equal or above 18 years and due enrollment in the fourth, fifth, or sixth year of the medical school at the chosen institution during data collection. The exclusion

criteria were age below 18 years and enrollment in years other than the above or in another higher education institution. Informed consent forms were signed by all subjects who agreed to participate in this study.

The questionnaire was electronically sent to all students enrolled in the seventh, eighth, ninth, tenth, and 12th periods of the course from October to December 2021. The 11th period was excluded from sample calculation since the institution had no students attending this period at the time stipulated for data collection. The sample consisted of 135 students who were randomly chosen based on the order in which they answered the questionnaire.

The questionnaire consisted of 14 questions regarding PC to objectively analyze students' level of knowledge. Performance was classified according to the number of correct questions as follows: unsatisfactory (less than seven correct answers), acceptable (seven to nine correct answers), desirable (10 to 12 correct answers), and excellent (more than 12 correct answers).

Statistical analyses were made after data collection. Categorical variables were shown as absolute and relative frequencies and numerical variables, as mean \pm standard deviation and medians (1st-3rd quartiles). Associations between variables were assessed using the chi-square test of independence. The Spearman's correlation coefficient—a non-parametric measure of rank correlation (statistical dependence of ranking between two variables)—was also used. Analyses were performed on R, version 4.0.3, and considering a 5% significance level.

Results

This study evaluated 135 medical students with 23.5 ± 3.3 years as the mean age, of which 96 (71.1%) were women. At the time of data collection, participants were in the fourth, fifth, and sixth years of medical school (as described in the inclusion criteria), constituting a sample with students from the clinical (fourth year) and internships (fifth and sixth years) cycles.

Regarding the participants, 61 (45.2%) reported being in the fourth year, 40 (29.6%) in the fifth, and 34 (25.2%) in the sixth. Slightly more than

half (68, 50.4%) reported having completed an internship in older adult health (equivalent to the geriatrics discipline) and 67 (49.6%), having yet to take this internship.

Most (115, 85.2%) answered affirmatively when asked if they had ever experienced the death of family members or close people. Regarding training to deal with patient death and the grieving of relatives, 70 (51.9%) students neither consider themselves prepared nor associate death with defeat, loss, and frustration; 55 (40.7%) consider themselves prepared and see death as a natural process of life; and 10 (7.4%) neither feel unprepared but associate death with defeat, loss, and frustration. Direct analysis with course year showed no statistically significant difference ($p=0.7548$) between its independent variables ($p=0.8773$).

When asked if they considered it important for terminally ill patients to die at home with their family, 123 (91.1%) students believed that patients should make this choice together with their and physician. This study found no statistical difference between these findings after analyzing them in relation to attended year ($p=0.6252$).

Moreover, 105 (77.8%) participants believe that treatment choices should be shared between patients, their family and physician, and 16 (11.9%), that this should occur only between the patient and the physician. When asked how they would like treatment choices to occur if they were patients, 82 (60.7%) would like the decisions to be shared with the family and physician, and 28 (20.7%), only between them and the physician.

The direct comparison between the answers to “As the physician of a terminally ill patient, who would you like to choose the patient's form of treatment?” and “If you were the terminal patient, who would you like to choose your form of treatment?” showed dependent variables ($p < 2.2e-16$) with a statistically significant difference ($p=5.44e-15$), despite a weak correlation.

Regarding the level of knowledge about PC, 109 (80.7%) students classified it as regular, 16 (11.9%) as poor, and 10 (7.4%) as good. Attended year and level of knowledge about PC ($p=0.05525$) showed no significant association between its dependent variables ($p=0.0096$).

Regarding the approach to the topic during the course, most (104; 77%) believed having received insufficient information about PC during their undergraduate studies. The analysis of the answers in relation to the students' year was statistically relevant ($p=0.0377$), whereas course year and the answer to "Do you believe you have received enough information about the care of terminally ill patients during your undergraduate studies?" ($p=0.0559$) were independent variables.

In total, 95 (23.5%) students claimed that the lack of chance to approach the emotional, spiritual and social aspects of human beings, such as contact with patients without the possibility of cure, was a cause for insufficient information about PC. According to 86 participants (21.2%), the lack of a discipline that dealt with issues such as the process of death and dying. Moreover, 39 (9.6%) students reported that professors did not foster their sensibilities to think about this type of issue, 15 (3.7%) had no opinion about what was missing, and only two (0.5%) stated that they felt completely prepared to aid patients and their families with palliation as their undergraduate programs lacked nothing.

Regarding the World Health Organization (WHO) definition of PC, 62 (45.9%) students said they knew it and 73 (54.1%), otherwise. Regarding the beginning of the indication of PC to patients, 84 (62.2%) stated that this care should be offered as soon as a diagnosis of a life-limiting disease is established and 51 (37.8%), otherwise.

Most (131, 97%) participants indicated that PC should not be provided only to patients who have no curative treatments and only four (3%), otherwise. Regarding the association between early care and survival, 79 (58.5%) students indicated that it increased survival and 56 (41.5%) that it should not begin from diagnosis.

Regarding the concept of orthothanasia, 119 (88.1%) claimed it offers adequate PC to patients in the final moments of their lives; seven (5.2%), that it aims at prolonging life, leading to a slow, anxious, and painful death; one (0.7%), that it shortens the life of an incurably ill person in a controlled and specialist-aided manner; and eight participants (5.9%) were unable to answer the question.

Regarding the definition of euthanasia, 133 (98.5%) indicated that it shortened the life of

an incurable patient in a controlled and specialist-aided manner; one (0.75%), that it offered adequate PC to patients in the last moments of their lives; and one (0.75%), that it is the decision of a patient's survival according to the opinion of their relatives.

Regarding dysthanasia, 124 (91.9%) indicated that it aims to prolong life, leading to a slow, anxious, and painful death; four (3%), that it adequately cares for patients in the final moments of their lives; one (0.7%) that it shortens the life of an incurably ill person in a controlled and specialist-aided manner; and six (4.4%) were unable to answer the question.

When asked if the use of a nasogastric tube instead of oral feeding to increase survival and improve quality of life and function is recommended for patients with advanced dementia and dysphagia, 67 (49.6%) participants answered no; 30 (22.2%), yes; and 38 (28.1%) were unable to answer the question.

Regarding the use of antibiotics in patients with advanced dementia and suspected bacterial infection, 54 (34.1%) said that there is no strong recommendation, 35 (25.9%) that a recommendation exists, and 46 (34.1%) were unable to answer the question. Regarding hospitalization in cases of acute involvement with suspected infection in end-of-life patients, 63 (46.7%) said it is not recommended, 41 (30.4%) that it is, and 31 (23%) were unable to answer the question.

Regarding whether opioids were the first choice to manage patients in pain, 65 (48.1%) answered no, 35 (25.9%) said yes, and 35 (25.9%) were unable to answer the question. When asked if the regular use of opioids in pain management fails to require steroidal anti-inflammatory drugs, 54 (40%) said no, nine (6.7%) said yes, and 72 (53.3%) were unable to answer the question.

When asked if the increase in the dosage of opioids for pain management should be limited to prevent respiratory depression as a side effect, 19 (14.1%) said no, 82 (60.7%) said yes, and 34 (25.2%) were unable to answer the question. Regarding the use of morphine to relieve dyspnea in terminal patients, 12 (8.9%) said it should not be used, 68 (50.4%) said it should, and 55 (40.7%) were unable to answer the question.

Regarding the objective analysis of PC knowledge, 29 (21.5%) had unsatisfactory results (up to seven correct answers); 65 (48.1%), acceptable; 37 (27.4%), desirable, and four (3%), excellent. Results considering the students' year showed a weak statistically significant difference ($p=1.34e-05$) between dependent variables

($p=0.0063$). The direct analysis of the results of students who completed an internship for older adults versus those who were yet to do so also showed a statistically significant and weak difference ($p<2.2e-16$). Tables 1 and 2 show the values of the results for each year and for internship in older adult health.

Table 1. Comparison of assessment outcomes of knowledge on palliative care with attended year

Results of the objective knowledge assessment on palliative care	Year of medical school			p value
	Fourth	Fifth	Sixth	
				$p\ 1.34e-05$ (Spearman) $p^{\circ}0.0063$
Unsatisfactory (up to 7 correct answers)	17	9	3	
Acceptable (7 to 9 correct answers)	35	14	16	
Desirable (10 to 12 correct answers)	9	17	11	
Excellent (>12 correct answers)	0	2	2	

[°] Chi-squared test

Table 2. Comparison of assessment results of knowledge on palliative care before and after internship in older adult health

Results of the objective assessment of knowledge on palliative care	Have you ever completed an internship in older adult health?		p value
	Yes	No	
			$p<2.2e-16$ (Spearman) $p^{\circ}<2.2e-16$
Unsatisfactory (up to 7 correct answers)	8	21	
Acceptable (7 to 9 correct answers)	26	39	
Desirable (10 to 12 correct answers)	28	9	
Excellent (>12 correct answers)	4	0	

[°] Chi-squared test

Discussion

The teaching of PC provides healthcare providers with the values, skills, and attitudes necessary in medical practice, such as decision-making, patient autonomy care management, and better communication skills⁷⁻⁹. However, according to the most recent data from the National Academy of Palliative Care, only 14% of Brazilian medical courses had a chair on PC in 2018¹⁰.

When asked if they had enough information about the care of terminally ill patients during their undergraduate studies, 77% of students said they lacked it, whereas 23% believe they do.

When analyzing the answers in relation to the participants' course year, it is observed that, as years progress, fewer students believed having received sufficient information, a statistically relevant result ($p<0.05$). One can thus infer that students in later years and with more theoretical-practical experience are more critical of what they are taught.

Regarding internship in older adult health, 28.8% of students who had taken the discipline feel having sufficient knowledge on the subject, against 16% of those who feel otherwise. It is important to note that most students, both those who are yet to complete internship and those who



had (84% and 71.2%, respectively), still consider the information provided as insufficient.

These data are consistent with the findings of Pinheiro¹¹, which indicate that 83% of fifth- and sixth-year medical students believed having received insufficient information on terminal patient management. Dalpai and collaborators¹² observed that 89% of fourth-, fifth-, and sixth-year students believed having received insufficient information on the subject during their undergraduate studies.

In addition to classifying the information as insufficient, most (80.7%) students rated their knowledge on PC as regular; 11.9%, as poor; and 7.4%, as good. Most of those who classified it as poor were in the fourth year and, therefore, yet to take older adult health internship. However, although the internship may impact the level of knowledge offered about PC, most students rate the information provided and knowledge acquired as insufficient.

These values did not differ significantly in relation to course year ($p>0.05$). The lack of confidence from students about PC learning may indicate a deficiency in the pedagogical project to teach it, as in other studies¹¹⁻¹⁴.

Systematically addressing topics such as end of life and the process of death can provide students with greater confidence toward their knowledge on the subject^{15,16}. A bioethics-based education is important to develop critical-reflective thinking about end of life, beneficence and non-maleficence principles, and attitudes to preserve patient autonomy¹⁷⁻²⁰.

This research evaluated bioethics by questions on the definition of the terms orthothanasia, dysthanasia, and euthanasia, to which 85% of participants offered correct answers. Students who completed or were yet to complete an internship in older adult health showed no significant difference ($p>0.05$), and both groups performed well (82 and 87%, respectively). The chosen medical course offers a discipline on ethics and bioethics in its third year, thus configuring an expected result.

The challenges of caring for terminally ill patients include bioethics concepts and ethical and cultural conflicts between healthcare providers, patients, and family members. These issues are infrequently addressed in the medical education model based on technique and treatment focused

on cure^{21,22}. For example, interpreting death as a natural and inevitable phenomenon is not routinely discussed, causing students to experience difficulties when dealing with and communicating it in these situations.

Although participants in this study avoided associating patient death with defeat, loss, and frustration, 51.9% considered themselves unprepared to deal with this scenario and a small number (7.4%) deemed themselves unprepared and associated death with defeat, corroborating the findings of Moraes and Kairalla¹³. Orth and collaborators¹⁴ investigated 190 medical students from a university in Santa Catarina and obtained equivalent results, as did Oliveira-Cardoso and Santos²³ in a broader study evaluating medical, nursing, and psychology students. The qualitative study by Duarte and collaborators¹⁹ found that fourth- and sixth-year medical students consider patient death as a difficult experience that causes unpleasant feelings and powerlessness.

There was no significant difference in course years in answers to whether students feel prepared to deal with patient death. That is, participants further in their courses feel no more confidence to deal with patients' death than those from earlier years. Thus, it is hypothesized that students in earlier years lack the necessary practice to assess their preparedness more accurately.

Thus, it is assumed that these students' views may be biased as they only know the theory and simulated practice and are yet to experience an end-of-life situation in medical practice, generating a false sense of security. The opposite can be said about students in later years, who feel less prepared. Having experienced practical situations, their insecurity to deal with patient death may indicate that the teaching on the subject remains insufficient or that, although satisfactory, neither transmits the necessary confidence to students nor sufficiently fosters it.

The confidence and attitude of students and healthcare providers toward patient death may be influenced by individual experiences²⁴. Anneser and collaborators²⁵ state that deficiencies in recognizing, understanding and elaborating feelings regarding the end of life and death influences how students behave toward the complaints, needs and insecurities of terminal patients and their families.

Whyte and collaborators²⁶ report that grief experiences can educationally affect student development in diverse ways. Personal grief experiences can provoke anxiety or avoidance and denial behavior during the patient death process. Most students in this study had experienced grief over the death of someone close to them, which may indicate that practices that address and sensitize them about the end of life and reduce the negative influence of personal grief experiences may benefit future medical practice.

Other factors that influence medical practice include the culture and religiosity of professionals, patients and family members, as people with diverse cultures and religion views interpret the death process in diverse ways.

Hagiwara and collaborators²⁴ observed that medical students lack the confidence to address spiritual or religious issues during practice. The authors report that this difficulty is related to cultural differences and the diversity of interpretations between healthcare providers and patients²⁴. Although participants were asked about religiosity, this study barely addressed this subject and its relationship with patient care.

An interesting datum was the statistical correlation between the answers to the questions “As a physician to a terminally ill patient, who would you like to choose how to treat the patient?” and “If you were the terminal patient, who would you want to choose your treatment method?”

First, there is the idea that empathy is well developed among students since they answered believing that the decision in conduct and treatment should be made in the same way for themselves and patients, indicating a good ability to “put oneself in the other’s shoes.” However, this choice may indicate that individual experiences, beliefs and culture hold influence over professional practice.

The objective analysis of student knowledge was carried out with a 14-question questionnaire, in which almost half of participants (48%) had an average result, that is, answering 7-9 questions correctly; one-fifth got less than 50% right; and only four (3%) got all the questions right. The median number of correct answers was 8 with an 8.2 mean, which allows us to infer that the quality of PC teaching provided to participants can be characterized as regular.

Performance depended on course year and improved as students progressed, corroborating the findings of Lemos and collaborators²⁷, who assessed the knowledge of fourth-, fifth-, and sixth-year students and reported 4, 10, and 12 medians, respectively, in 19 questions. The unsatisfactory results in both studies reinforce the need to improve PC education, so students have greater excellence in their knowledge of the subject.

This study found that fourth-year students obtained more unsatisfactory and acceptable results; fifth-year students, desirable; and only sixth-year, excellent. Therefore, it can be inferred that students have a better access to information on the subject and retain more of it as they progress in their courses.

This result also depends on whether or not the older adult health internship has been completed, a discipline with which it has a statistical correlation that was better among those who had completed it. Of the 29 unsatisfactory results, 21 came from students who were yet to take the internship and, of the 37 desirable results, 28 from those who had completed it. All those who answered the 14 questions correctly had completed their internship in older adult health.

These data differ from the findings of Lemos and collaborators²⁷, who, by directly comparing the knowledge of fourth- and sixth-grade students to assess the increase in knowledge in students during internship, found no significant differences. However, the differential of this study is that students are exposed to geriatric practices and end-of-life care in their older adult health internship. This type of mandatory internship is offered as an exclusive curricular discipline of the studied university and was implemented in 2014 in its undergraduate medical course, something approved by the students.

A study conducted in Turkey showed that knowledge about symptom management in terminal patients was higher in students who had completed an internship in oncology or followed patients with terminal diseases, reinforcing the findings of this study²⁸. Anderson and collaborators²⁹ also report that students who have had contact with terminally ill patients have greater knowledge about end of life than those without it.

Thus, despite its still regular knowledge, internship in older adult health has a positive

and statistically relevant impact on the level of knowledge of medical students about end of life and PC. The findings of this and the cited studies attest to the description of Toledo and collaborators³⁰, which indicates that the provision of courses on end-of-life care favorably affects learning about palliative care.

Final considerations

Most students in the fourth, fifth, and sixth years of medical school at the institution in which

this study took place classify their knowledge about PC obtained during their undergraduate studies as regular. These students also indicated that it would be beneficial to improve the PC approach in undergraduate medicine.

Although internship in older adult health/geriatrics positively impacts PC knowledge, there remains a need to adjust the theoretical-practical teaching model to address end of life in other disciplines and internships so students can be trained to become qualified and confident professionals capable of dealing with situations involving the patient death process.

References

1. United Nations. World Population Prospects 2019 [Internet]. 2019 [acesso 29 ago 2023]. Disponível: <https://bit.ly/46HjNtW>
2. Brasil. Ministério da Saúde. Secretaria de Vigilância em Saúde. Plano de ações estratégicas para o enfrentamento das doenças crônicas não transmissíveis (DCNT) no Brasil 2011-2022 [Internet]. Brasília: Ministério da Saúde; 2011 [acesso 29 ago 2023]. Disponível: <https://bit.ly/3tpa2IE>
3. Matsumoto D. Cuidados paliativos: conceito, fundamentos e princípios. In: Carvalho RT, Parsons HF, organizadores. Manual de cuidados paliativos ANCP [Internet]. 2ª ed. Rio de Janeiro: Academia Nacional de Cuidados Paliativos; 2012 [acesso 29 ago 2023]. p. 23-30.
4. World Health Organization. National cancer control programmes: policies and managerial guidelines [Internet]. 2ª ed. Geneva: World Health Organization; 2002 [acesso 29 ago 2023]. Disponível: <https://bit.ly/3RWsz3b>
5. Okon TR, Christensen A. Overview of comprehensive patient assessment in palliative care. Uptodate [Internet]. 2021 [acesso 29 ago 2023]. Disponível: <https://bit.ly/46Dhdol>
6. Santos CE, Campos LS, Barros N, Serafim JÁ, Klug D, Cruz RP. Palliative care in Brasil: present and future. Rev Assoc Med Bras [Internet]. 2019 [acesso 29 ago 2023];65(6):796-800. DOI: 10.1590/1806-9282.65.6.796
7. Castro AA, Taquette SR, Marques NI. Cuidados paliativos: inserção do ensino nas escolas médicas do Brasil. Rev Bras Educ Med [Internet]. 2021 [acesso 20 ago 2023];45(2):e056. DOI: 10.1590/1981-5271v45.2-20200162
8. Simmenroth-Nayda A, Alt-Epping B, Gágyor I. Breaking bad news: an interdisciplinary curricular teaching-concept. GMS Z Med Ausbild [Internet]. 2011 [acesso 20 ago 2023];28(4):Doc52. DOI: 10.3205/zma000764
9. Parikh PP, White MT, Buckingham L, Tchorz KM. Evaluation of palliative care training and skills retention by medical students. J Surg Res [Internet]. 2017 [acesso 20 ago 2023];211:172-7. DOI: 10.1016/j.jss.2016.11.006
10. Academia Nacional de Cuidados Paliativos. Panorama dos cuidados paliativos no Brasil [Internet]. São Paulo: ANCP; 2018 [acesso 20 ago 2023]. Disponível: <https://bit.ly/48YpsOL>
11. Pinheiro TRSP. Avaliação do grau de conhecimento sobre cuidados paliativos e dor dos estudantes de medicina do quinto e sextos anos. Mundo Saúde [Internet]. 2010 [acesso 20 ago 2023];34(3):320-6. Disponível: <https://bit.ly/3JKaolZ>
12. Dalpai D, Mendes FF, Asmar JAVN, Carvalho PL, Loro FL, Branco A. Dor e cuidados paliativos: o conhecimento dos estudantes de medicina e as lacunas da graduação. Rev Dor [Internet]. 2017 [acesso 20 ago 2023];18(4):307-10. DOI: 10.5935/1806-0013.20170120
13. Moraes SAF, Kairalla MC. Avaliação dos conhecimentos dos acadêmicos do curso de medicina sobre os cuidados paliativos em pacientes terminais. Einstein (São Paulo) [Internet]. 2010 [acesso 20 ago 2023];8(2):162-7. DOI: 10.1590/s1679-45082010ao1464

14. Orth L, Haragushiku EY, Freitas ICS, Hintz MC, Macron CEM, Teixeira JF. Conhecimento do acadêmico de medicina sobre cuidados paliativos. *Rev Bras Educ Med* [Internet]. 2019 [acesso 20 ago 2023];43(supl 1):286-95. DOI: 10.1590/1981-5271v43suplemento1-20190039
15. Coffey A, McCarthy G, Weathers E, Friedman MI, Gallo K, Ehrenfeld M *et al.* Nurses' knowledge of advance directives and perceived confidence in end-of-life care: a cross-sectional study in five countries. *Int J Nurs Pract* [Internet]. 2016 [acesso 20 ago 2023];22(3):247-57. DOI: 10.1111/ijn.12417
16. Guirro UBP, Ferreira FS, Van der Vinne L, Miranda GFF. Conhecimento sobre diretivas antecipadas de vontade em hospital-escola. *Rev. bioét. (Impr.)* [Internet]. 2022 [acesso 20 ago 2023];30(1):116-25. DOI: 10.1590/1983-80422022301512PT
17. Pereira LM, Andrade SMO, Theobald MR. Cuidados paliativos: desafios para o ensino em saúde. *Rev. bioét. (Impr.)* [Internet]. 2022 [acesso 20 ago 2023];30(2):149-61. DOI: 10.1590/1983-80422022301515PT
18. Pirôpo US, Damasceno RO, Rosa RS, Sena ELS, Yarid SD, Boery RNSO. Interface do testamento vital com a bioética, atuação profissional e autonomia do paciente. *Rev Salud Pública* [Internet]. 2018 [acesso 20 ago 2023];20(4):505-10. DOI: 10.15446/rsap.V20n4.65009
19. Duarte AC, Almeida D, Popim RC. A morte no cotidiano da graduação: um olhar do aluno de medicina. *Interface Comun Saúde Educ* [Internet]. 2015 [acesso 20 ago 2023];19(55):1207-19. DOI: 10.1590/1807-57622014.1093
20. Costa AP, Poles K, Silva AE. Formação em cuidados paliativos: experiência de alunos de medicina e enfermagem. *Interface Comun Saúde Educ* [Internet]. 2016 [acesso 20 ago 2023];20(59):1042-51. DOI: 10.1590/1807-57622015.0774
21. Pereira CSK, Grandini RICM, Guirro UBP. Cuidados paliativos e o ensino médico mediado por tecnologias: avaliação da aquisição de competências. *Rev Bras Educ Med* [Internet]. 2021 [acesso 20 ago 2023];45(4):199. DOI: 10.1590/1981-5271v45.4-20210254
22. Blasco PG. A ordem dos fatores altera o produto: reflexões sobre educação médica e cuidados paliativos. *Educ Med* [Internet]. 2018 [acesso 20 ago 2023];19(2):104-14. DOI: 10.1016/j.edumed.2016.07.010
23. Oliveira-Cardoso EA, Santos MA. Grupo de educação para a morte: uma estratégia complementar à formação acadêmica do profissional de saúde. *Psicol Ciênc Prof* [Internet]. 2017 [acesso 20 ago 2023];37(2):500-14. DOI: 10.1590/1982-3703002792015
24. Hagiwara Y, Ross J, Lee S, Sanchez-Reilly S. Tough conversations: development of a curriculum for medical students to lead family meetings. *Am J Hosp Palliat Care* [Internet]. 2017 [acesso 20 ago 2023];34(10):907-11. DOI: 10.1177/1049909116669783
25. Anneser J, Kunath N, Krautheim V, Borasio GD. Needs, expectations, and concerns of medical students regarding end-of-life issues before the introduction of a mandatory undergraduate palliative care curriculum. *J Palliat Med* [Internet]. 2014 [acesso 20 ago 2023];17(11):1201-5. DOI: 10.1089/jpm.2013.0614
26. Whyte R, Quince T, Benson J, Wood D, Barclay S. Medical students' experience of personal loss: incidence and implications. *BMC Med Educ* [Internet]. 2013 [acesso 20 ago 2023];13:36. DOI: 10.1186/1472-6920-13-36
27. Lemos CFP, Barros GS, Melo NCV, Amorim FF, Santana ANC. Avaliação do conhecimento em cuidados paliativos em estudantes durante o curso de medicina. *Rev Bras Educ Med* [Internet]. 2017 [acesso 20 ago 2023];41(2):278-82. DOI: 10.1590/1981-52712015v41n2rb20160087
28. Eyigor S. Fifth-year medical students' knowledge of palliative care and their views on the subject. *J Palliat Med* [Internet]. 2013 [acesso 20 ago 2023];16(8):941-6. DOI: 10.1089/jpm.2012.0627
29. Anderson WG, Williams JE, Bost JE, Barnard D. Exposure to death is associated with positive attitudes and higher knowledge about end-of-life care in graduating medical students. *J Palliat Med* [Internet]. 2008 [acesso 20 ago 2023];11:1227-33. DOI: 10.1089/jpm.2008.0058
30. Toledo AP, Martinelo LZ, Priolli DG. Ensino médico em terminalidade da vida: sua obrigatoriedade é válida? In: *Anais do IV Congresso Internacional de Cuidados Paliativos* [Internet]. São Paulo: Instituto de Ensino e Pesquisa do Hospital Sírio Libanês; 2010 [acesso 20 ago 2023]. p. 73-4. Disponível: <https://bit.ly/46EkgwX>

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Participation of the authors

Alice Duarte Paiva and Elisa Duarte Paiva participated in the review of the theme, elaboration and submission of the project to the research ethics committee, creation of the used instrument, result analysis, and drafting of this article. They also forwarded the electronic questionnaire to participants and created the database of this study. Gustavo Vaz de Oliveira Moraes and Maira Tonidandel Barbosa supervised this research and participated in all stages of this study. Paulo Henrique Sales Guimarães performed the statistical analyses and discussed results with the other authors.

Received: 10.16.2022

Revised: 9.5.2023

Approved: 9.20.2023