

Palliative care in an active teaching methodology

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Abstract

This study evaluates the knowledge about palliative care of medical students in their final years at universities that adopt problem-based learning methodology in Northeast Brazil. It was observed that 78% of the students did not have sufficient information on the care of terminally ill patients, and only 55% knew the World Health Organization's definition of palliative care. Regarding specific knowledge, students showed an unsatisfactory level of achievement in the domains of dyspnea, psychiatric and gastrointestinal problems; acceptable in the pain domain and excellent in philosophy of palliative care and communication skills. Knowledge regarding pain management, dyspnea and psychiatric problems improved during the internship. Therefore, it was found that students come into contact with the subject but have a significant deficit in issues related to the management of common symptoms in palliative care.

Keywords: Palliative care. Education, medical. Problem-based learning.

Resumo

Cuidados paliativos em uma metodologia ativa de ensino

O presente estudo avalia o conhecimento sobre cuidados paliativos de estudantes de medicina dos últimos anos nas universidades que adotam a metodologia de aprendizagem baseada em problemas no Nordeste do Brasil. Observou-se que 78% dos estudantes não tiveram informações suficientes sobre cuidados de pacientes em situação terminal, e apenas 55% conheciam a definição de cuidados paliativos da Organização Mundial da Saúde. Quanto aos conhecimentos específicos, os estudantes demonstraram um nível de acerto insatisfatório nos domínios dispneia, problemas psiquiátricos e gastrintestinais; aceitável no domínio dor e excelente em filosofia dos cuidados paliativos e habilidade de comunicação. Durante o internato houve ganho de conhecimento quanto a manejo da dor, dispneia e problemas psiquiátricos. Portanto, verificou-se que os estudantes entram em contato com o tema, porém apresentam déficit significativo nas questões relacionadas ao manejo de sintomas comuns em cuidados paliativos.

Palavras-chave: Cuidados paliativos. Educação médica. Aprendizagem baseada em problemas.

Resumen

Cuidados paliativos en una metodología de enseñanza activa

Este estudio evalúa el conocimiento de cuidados paliativos por los estudiantes de medicina de los últimos años en universidades que adoptan la metodología de aprendizaje basado en problemas en el Noreste de Brasil. El 78% de los estudiantes no tenía suficiente información sobre la atención a pacientes terminales, y solo el 55% conocía la definición de cuidados paliativos de la Organización Mundial de la Salud. Respecto a los conocimientos específicos, los estudiantes demostraron un insatisfactorio nivel de precisión en los dominios disnea, problemas psiquiátricos y gastrointestinales, aceptable en el dominio dolor y excelente en la filosofía de cuidados paliativos y habilidades de comunicación. En el internado adquirieron conocimientos sobre el manejo del dolor, la disnea y los problemas psiquiátricos. Se constató que los estudiantes tienen contacto con el tema, pero presentan un déficit significativo en temas relacionados con el manejo de los síntomas comunes en los cuidados paliativos.

Palabras clave: Cuidados paliativos. Educación médica. Aprendizaje basado en problemas.

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Palliative care (PC) is a multidisciplinary approach aimed at patients facing a serious and life-threatening disease^{1,2}. According to the World Health Organization (WHO), PC *prevents and relieves suffering through the early identification, correct assessment and treatment of pain and other problems, whether physical, psychosocial or spiritual*³, and should be offered early in the course of the disease. However, science has invested in the fight against the end of life, contributing to the cult of curative healthcare and aversion to the process of illness and death⁴.

This article aims to show the training of medical students on PC using problem-based learning (PBL). Since 2001, the Ministry of Education has emphasized the importance of adopting active teaching methodologies⁵. However, despite several studies analyzing the knowledge of medical students about PC⁶⁻¹¹, no study specifies on the teaching methodology of the universities studied.

The objective of this study is to evaluate the PC knowledge of fifth- and sixth-year medical students in universities that adopt the PBL methodology in the state of Sergipe.

Method

The approach of this study is exploratory, descriptive, cross-sectional, and quantitative, and is part of a project approved by the Research Ethics Committee of the Federal University of Sergipe (CEP-UFS), which aims to evaluate the knowledge of interns and physicians about PC. The population was composed of fifth- and sixth-year students from universities of Sergipe (public and private) that adopt PBL as a teaching methodology. Data collection was conducted from March to June 2018.

The inclusion criteria were student interns enrolled in universities that adopt the PBL methodology. Before answering the questionnaire, participants signed an informed consent form that guaranteed total anonymity, according to Resolution 466/2012 of the National Health Council (CNS)¹².

Due to the impossibility of covering all students who could be included, a sample calculation was made, for an estimated population of 300 students enrolled in institutions that employ

active teaching methodology. The sampling error was 5%, confidence level 90%, and the hypothesis that, at most, 10% of the students have knowledge in PC, with a minimum number of 143 students. In total, 151 questionnaires were collected to ensure the representativeness and statistical significance of the sample¹³.

Data were collected using a questionnaire elaborated by the authors based on instruments from the literature and composed of three stages: 1) registration of sociodemographic data of the participants; 2) application of a questionnaire based on an instrument validated in Colombia¹⁴ with questions on general self-assessment about PC, adapted in the form of five closed questions, with yes or no answers; and 3) evaluation using an instrument validated in Japan¹¹, adapted for 23 questions divided into six domains—philosophy, pain, dyspnea, psychiatric problems, gastrointestinal problems, and communication—with three possible answers: “true,” “false,” and “I do not know.”

Categorical variables were described as absolute frequency and percentage, compared between groups using the chi-square test. Results with descriptive levels for p below 5% ($p < 0.05$) were considered significant. The IBM Statistical Package for the Social Sciences program version 25.0 (Armonk, NY) was used for statistical analysis.

Results

From the variables obtained in the sociodemographic questionnaire, it was found that 91% were aged 20-29 years and 65% were women. Most participants were fifth-year undergraduates (71%).

Regarding the self-assessment (Appendix Table 1), 78% of the students reported not having received sufficient information regarding the care of terminally ill patients and only 55% knew the WHO's definition of PC. Regarding the management of pain and the main symptoms in PC, 43% and 57%, answered that they did not have sufficient information, respectively. When asked about communication techniques, 84.1% stated having learned them during training.

Regarding specific knowledge (Appendix Table 2), philosophy, dyspnea, and gastrointestinal problems presented the most correct answers

(87.7%), the most errors (41.5%), and the most “I do not know” answers (43%), respectively. In the philosophy domain, almost 80% of students answered that PC can be suggested paired with curative treatment.

Regarding pain, most students (91%) responded that long-term use of opioids induces dependence and 82% stated that their use should be limited due to the risk of respiratory depression. In the dyspnea domain, 27.2% answered that morphine should not be used to relieve this symptom and 30.5% did not know how to answer. In the psychiatric problems domain, 25% marked that benzodiazepines are effective against delirium and about 24% did not know how to answer.

About gastrointestinal problems, 44% stated that patients require a higher caloric intake at terminal stages of cancer, and only 17% recognized the use of steroids to improve appetite among patients with advanced cancer.

Almost all (98.7%) stated that communication is a skill that can be learned, and 77.5% reported that uncertain information should be omitted since it causes additional anxiety.

In the self-assessment by course semester, students in the 10th semester were found to have received more information about patients in terminal condition (31%). Furthermore, more students in the 12th semester knew the WHO's definition of PC (84%) and had more knowledge about pain management (61.5%). The interns in the 11th semester knew more about the management of common symptoms in PC (50%).

The knowledge about PC by domains was classified as unsatisfactory (less than 50% correct), acceptable (50% to 70% correct), desirable (71% to 80% correct), and excellent (more than 80% correct).

The result of knowledge about the specific domains was excellent in PC philosophy (87.7%) and communication (88%); acceptable in pain (51.9%); and unsatisfactory in dyspnea (37%), psychiatric problems (48%), and gastrointestinal problems (28%). Regarding the analysis of the internship entry period (9th semester) and the final semester (12th), it was found that students in the 9th semester presented unsatisfactory knowledge in the areas of pain, dyspnea, and psychiatric problems. In contrast, students in the 12th semester

demonstrated acceptable proficiency in these domains. Regarding gastrointestinal problems, both groups obtained unsatisfactory results.

Discussion

Medical education still emphasizes disease and cure⁴, which makes learning about the natural course of illnesses less important and hinders students' contact with patients who cannot be cured^{2,15}. The incentive to specializations and the massive use of technology have also contributed to the separation of patients into individual organs and reversion of listening and developing a good physician-patient relationship². In this context, cure is incessantly sought after and death is denied, leading to attitudes that can compromise the patient's quality of life¹—conducts prohibited by the Code of Medical Ethics, which emphasizes the importance of offering PC for incurable and terminal diseases¹⁶.

Studies have shown that physicians do not receive satisfactory education on PC^{6,9,17}. A survey conducted in Porto Alegre/RS showed that 89.4% of medical students reported not having received sufficient information on the care of terminally ill patients⁷. In the present study, this percentage was 78.1%.

When asked about the WHO's definition of PC, 43.7% of the subjects reported that they did not know it. Although this is a high percentage, it was lower compared with similar studies, such as those by Pinheiro¹⁰, Dalpai and collaborators⁷, and Vasconcelos⁹.

A study with undergraduate medical students from a university in Sergipe that adopts traditional methodology reported that 76.1% denied learning enough information on the approaches to pain management⁹. In this study, a lower percentage (43%) was found, which suggests that PBL undergraduate students from Sergipe had greater contact with pain management.

Another study conducted in Porto Alegre/RS with medical students in the final years of undergraduate courses reported that 80.9% of the sample did not learn the management of common symptoms in PC⁷. The present study found lower results (57%), indicating that more students in the sample had contact with this topic.

Regarding PC communication, the results found in the present study are higher than those found in a university of Porto Alegre/RS⁷ and at universities in the state of São Paulo¹⁰, in which 40.4% and 36% of the students, respectively, stated that they had learned about communication instruments and medical attitude when breaking bad news.

The data from the present study, better when compared to data from the literature, allow us to suppose that the PBL methodology favors positive outcomes regarding self-assessment on PC. Regarding specific knowledge, a low frequency of correct answers was observed in almost all domains. Student interns presented greater knowledge when compared with fifth- and sixth-year students.

PC should begin at diagnosis, if necessary, concomitantly with curative treatment, when available^{1,3,18}. However, 17.2% of the students in this study responded that PC should only be offered to patients who do not have curative treatment option. Only one 12th semester student wrongly answered this question; one can thus assume that students under PBL have learned more about PC philosophy at some point during the internship program, since they are aware that the recommendation of PC is not restricted to the end of life.

The correct answers in PC philosophy were higher than those of a study conducted in Sergipe at a university that adopts the traditional teaching methodology⁹, and similar to those conducted with physicians at a university hospital in the same state¹⁷.

In the pain domain, a significant percentage of errors was observed in the questions about adverse effects of opioids. Considering that pain is common in PC and that opioids are essential for the treatment of this symptom³, knowledge of the drugs that can be used for analgesia and their most frequent adverse effects is necessary.

From 40% to 95% of patients who receive opioid analgesia suffer from constipation, which can be prevented, treated, and investigated. In this context, the use of prophylactic laxative is indicated concomitantly with the start of treatment¹⁸. However, the mentioned study reveals a lack of knowledge on the subject, since 25.8% of medical interns did not know how to answer about

the effectiveness of using laxatives to prevent opioid constipation and 16.6% disagreed with the effectiveness of the association in preventing this adverse effect. Vasconcelos⁹ showed that only 42.2% would know how to manage or prevent this symptom—a percentage lower than the one found in this study (57.6%), but equally worrying.

The lack of knowledge regarding proper use of opioids and the belief in the myths that surround them is one of the causes for the “undertreatment” of pain¹⁹. Hesitation to use these substances due to the risk of respiratory depression is common^{9,11,19}. Accordingly, 82.1% of the students in this study would limit opioid doses due to fear of this serious adverse effect, a rare occurrence if the medication is prescribed correctly^{18,19}.

Furthermore, almost no cases of psychological dependence are described in the literature when the opioid is properly prescribed, being even rarer for chronic pain patients²⁰. However, the present study demonstrates that this myth contributes to the undertreatment of pain¹⁹, since 91.4% of students considered dependence as a limiting factor to opioid administration. The same was found in a study conducted in Canada, in which 73.2% of physicians reported that the risk of addiction is a barrier to prescribing opioid analgesics²¹.

Neuroadaptation and “pseudoaddiction” are concepts that may help sustain this myth. The first is a neuropharmacological mechanism that, similar to the one triggered by corticosteroids, induces adverse effects if the medication is suddenly withdrawn²². “Pseudoaddiction” is an iatrogenic syndrome characterized by the demand to increase the opioid dose for adequate pain management^{10,20,23}, which mimics the compulsive behavior present in psychological dependence, but is more associated with the sensation it provides rather than with analgesia²⁴.

Lack of knowledge regarding opioid administration for the management of dyspnea was also noted. It is known that 20% to 90% of cancer patients may experience dyspnea and that morphine is the drug of choice in the end-of-life context²⁵. However, in this study, almost 60% of the interns disagreed or did not recognize the utility of morphine treatment for dyspnea.

Regarding bronchial hypersecretion, studies have shown the potential of using anticholinergic

medication to reduce noisy breathing (death rattle), which is an important trigger of distress for patients and their relatives¹⁸. However, despite such importance, almost half of the interns evaluated in this study were unaware of the use of anticholinergics for this condition. This result is similar to that found by Conceição¹⁷, in which almost 40% of physicians did not know or did not agree that anticholinergics can be used for death rattle treatment.

Delirium is frequent in PC and an important predictor of poor prognosis²⁶. It is a multifactorial condition and occurs in vulnerable individuals exposed to risk factors¹⁸. Drug use is an important precipitating factor and, in this context, benzodiazepines are frequently associated with the development, aggravation, and prolongation of this state of mental confusion²⁷. However, in this study, almost half of the students did not know how to answer or would prescribe benzodiazepines for the treatment of delirium. Additionally, morphine, commonly used in PC, was associated with causes of delirium by almost 50% of students, although little relation exists between this effect and opioid administration^{9,18}.

A low frequency of correct answers was found for questions regarding the management of gastrointestinal problems. Despite the need for more studies about steroids administration to improve appetite in patients with cancer, the literature provides evidence of the effectiveness of this association²⁸. However, 83.4% of the students in this survey were unable to answer or disagreed that steroids can improve the appetite of patients with cancer—a similar percentage compared with a study conducted by Vasconcelos¹¹, in which 85.2% of students were unable to answer or disagreed.

Students achieved high rates of correct answers in the communication domain: most of them (98.7%) answered that communication skills can be learned, corroborating the literature²⁹.

Regarding the transmission of uncertain information to patients and relatives, 77.5% of the students in this survey believe that some information should be omitted from patients and relatives due to the possibility of causing additional anxiety. These data indicate a discrepancy with what is provided for in article 34 of the Code of Medical Ethics, which states that it is forbidden

for a physician to not inform the patient of the diagnosis, prognosis, risks, and treatment objectives, except when direct communication could harm them; in such cases, the communication should be made to their legal representative¹⁶.

When comparing the learning of only 9th- and 12th-semester students, knowledge improvement was observed in the philosophy, pain, dyspnea, and psychiatric problems domains, despite the low rates of correct answers in the last three. The knowledge of gastrointestinal problems was unsatisfactory in all semesters.

In the communication domain, the difference between students in the first and last year of the internship was not significant, which indicates the acquisition of communication skills before starting the program. The gain in knowledge in philosophy and dyspnea domains raises the assumption that the students were instructed on the subject during their internship, although the knowledge about dyspnea among the students of the last year of graduation is barely within the acceptable threshold (52% of correct answers).

Among the limitations of this study, it is necessary to mention that students from a same period are divided into groups and enter the internship in different rotations. Contact with PC can occur during the clinical medicine rotation when dealing with patients under such care. Therefore, learning about PC does not depend on the period of internship, but on the follow-up of patients under this treatment during the clinical medicine module. This factor hindered the analysis of knowledge gain during the internship.

Another limitation is the scarcity of PC competencies among the specific knowledge evaluated by the questionnaire, given the vast knowledge necessary for the adequate management of these patients. The instrument used, therefore, offers a simple analysis of the information necessary for knowledge about PC. Finally, the number of students evaluated is also a limitation, since a larger sample would bring more statistical relevance to this study.

Final considerations

This study found a lack of PC teaching for the sample studied, which corroborates the available

literature, revealing that most professionals are in an informational limbo when it comes to palliation. Students under PBL methods presented a higher perception of learning PC; however, this difference was not significant in the specific knowledge questions when compared with other studies. Regarding the five domains of PC knowledge, excellent results were observed for philosophy and communication, acceptable results for pain, and unsatisfactory results for dyspnea, psychiatric problems, and gastrointestinal problems.


It is reasonable to assume that students are being superficially exposed to the topic since they do not learn specific issues from contact with PC. The increasing learning curve does not exempt institutions from the need to improve the teaching of this subject, given the large number of errors in the specific knowledge questions. This study concludes that the medical curriculum needs to be reformulated, either by implementing or broadening subjects dealing with PC, aiming to provide the necessary competencies to deal with end-of-life decisions.

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Participation of the authors

All authors contributed equally to the construction of the project, data collection and analysis, writing, and review of the article.

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Appendix

Table 1. Self-assessment of palliative care

	Yes		No		I do not know	
	n	%	n	%	n	%
1. I received enough information about terminally ill patients during the undergraduate course.	32	21.2%	118	78.1%	1	0.7%
2. I know the WHO's definition of palliative care.	83	55	66	43.7%	2	1.3%
3. I received enough information for the management of patients with pain.	85	56.3%	65	43%	1	0.7%
4. I received enough information regarding the most common symptoms in palliative care.	64	42.4%	86	57%	1	0.7%
5. I learned communication techniques and medical attitude to inform "bad news".	127	84.1%	24	15.9%	0	0.0%

WHO: World Health Organization

Table 2. Correct answers in specific knowledge about palliative care

	CA	N	%
Philosophy			
1. Palliative care should only be provided to patients who do not have curative treatments available.	F	120	79.5
2. Palliative care should not be provided along with treatments for cancer.	F	145	96
Pain			
3. When opioids are taken on a regular basis, steroidal anti-inflammatory drugs should not be administered.	F	115	76
4. Long-term administration of opioids can often induce addiction.	F	13	8.6
5. Administration of opioids does not influence survival time.	T	66	33.8
6. Opioids are the drugs of choice for the management of patients with pain.	F	110	72.8
7. Some antidepressant and anticonvulsant medications help relieve cancer pain.	T	146	96.7
8. The administration of laxatives is effective in preventing opioid-induced constipation.	T	87	57.6
Dyspnea			
10. Morphine should be administered to relieve dyspnea in patients with cancer.	T	63	41.7
11. Oxygen saturation levels are correlated with dyspnea.	F	27	17.9
12. Anticholinergic drugs or scopolamine hydrobromide are effective for the relief of bronchial secretions.	T	78	51.7
13. If the room temperature is kept higher (warm), patients with dyspnea often experience relief.	F	37	25

continues...

Table 2. Continuation

	CA	N	%
Psychiatric problems			
14. Benzodiazepines are effective against delirium.	F	77	51
15. Some terminally ill patients require continuous sedation to alleviate suffering.	T	116	76.8
16. Morphine is often the cause of delirium in terminally ill patients and in patients with cancer.	F	26	17.2
17. Delirium often occurs in patients who are prone to mental symptoms.	F	47	31.1
Gastrointestinal problems			
18. In the terminal stages of cancer, patients require higher caloric intake compared with early stages.	F	66	43.7
19. Steroids can be administered to improve appetite among patients with advanced cancer.	T	25	16.6
20. Intravenous infusion is ineffective in relieving dry mouth in terminally ill patients.	T	39	25.8
Communication			
21. Communication skills can be learned.	T	149	98.7
22. The information that patients and relatives request and the extent to which patients and relatives participate in decision-making can change according to the course of the illness and condition.	T	133	88.1
23. Uncertain information should not be given to patients or relatives since it may cause additional anxiety.	F	33	21.9

CA: correct answer; T: true; F: false