



## RESEARCH

# Knowledge of palliative care among residents of a university hospital

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**Abstract**

Although palliative care can be applied in different situations besides neoplasias, it does not always find technical and scientific support from physicians. Thus, the objective was to evaluate the knowledge regarding palliative care among these professionals. Through an exploratory, descriptive, transversal and quantitative approach, the objective was to evaluate the knowledge about palliative care among physicians residing at the Federal University of Sergipe Hospital. For this, a questionnaire was created based on instruments from literature. The sample profile consisted predominantly of women (67%), professionals up to 29 years (59%), and up to four years since graduation (60%). Most physicians (78%) stated that they had not received enough information about palliative care during graduation. After analyzing all the questions, only 7% of the sample presented an excellent evaluation (accuracy in more than 80% of the questions).

**Keywords:** Palliative care. Knowledge. Education, medical. Self-assessment.

**Resumo****Conhecimento sobre cuidados paliativos entre médicos residentes de hospital universitário**

Embora possam ser aplicados em diversas situações além das neoplasias, os cuidados paliativos nem sempre encontram respaldo técnico e científico por parte dos médicos. Por meio de pesquisa exploratória, descritiva, transversal e de abordagem quantitativa, objetivou-se avaliar o conhecimento sobre cuidados paliativos entre médicos residentes do Hospital Universitário da Universidade Federal de Sergipe. Para isso, foi criado um questionário a partir dos instrumentos da literatura. O perfil da amostra foi composto predominantemente por mulheres (67%), profissionais com até 29 anos (59%) e até quatro anos de formados (60%). A maioria dos médicos (78%) afirmou não ter recebido informações suficientes sobre cuidados paliativos durante a graduação. Após análise de todas as questões, apenas 7% da amostra apresentou avaliação excelente (acerto em mais de 80% das questões).

**Palavras-chave:** Cuidados paliativos. Conhecimento. Educação médica. Autoavaliação.

**Resumen****Conocimiento sobre cuidados paliativos entre médicos residentes de un hospital universitario**

Aunque puedan ser aplicados en diversas situaciones, además de las neoplasias, los cuidados paliativos no siempre encuentran respaldo técnico y científico por parte de los médicos. Por medio de una investigación exploratoria, descriptiva, transversal y de abordaje cuantitativo, se procuró evaluar el conocimiento sobre cuidados paliativos entre médicos residentes del Hospital Universitario de la Universidad Federal de Sergipe. Para ello, se creó un cuestionario a partir de los instrumentos de la bibliografía. El perfil de la muestra estuvo compuesto predominantemente por mujeres (67%), profesionales con hasta 29 años (59%), y con hasta cuatro años de graduados (60%). La mayoría de los médicos (78%) afirmaron que no recibieron información suficiente sobre los cuidados paliativos durante la formación de grado. Luego del análisis de todas las preguntas, sólo el 7% de la muestra presentó una evaluación excelente (con aciertos en más del 80% de las preguntas).

**Palabras clave:** Cuidados paliativos. Conocimiento. Educación médica. Autoevaluación.

Aprovação CEP-UFS 66997817.6.0000.5546

Declaram não haver conflito de interesse.

The new technological and scientific age for medicine is immersed in the paradox between life and death. On the one hand, through the development of new therapies, curative medicine raises life expectancy and reduces mortality rates. On the other hand, the increase in the prevalence of cancer and chronic degenerative diseases requires medicine that, even without the guarantee of cure, improves the quality of life and ensures a dignified death<sup>1</sup>.

In view of this challenge imposed by contemporary society, the concept of palliative care, related to integral care stands out as defined by the World Health Organization (WHO) as *an approach to improving the quality of life of patients and families facing a life through the prevention and relief of suffering through early identification, thorough evaluation and treatment of pain and other physical, psychosocial and spiritual problems*<sup>2</sup>.

Until the 1980s, palliative care was predominantly targeted at cancer patients. However, in the current scenario, there is a growing need for such care in diseases such as acquired immunodeficiency syndrome and congestive heart failure, in neurological, respiratory and other chronic degenerative conditions. In 2011, according to WHO, of the 54.6 million people who died worldwide, 29 million needed palliative care. Among them, 94% were adults, 69% over 60 years and 25% between 15 and 59 years<sup>3</sup>.

In this perspective, Arantes<sup>4</sup> emphasizes the importance of medical knowledge about palliative care within hospitals. In these institutions, in times of suffering and fear, it is the physician along with other professionals, who can bring comfort to the patient, either through a friendly word or the correct prescription of the morphine dose. According to the author, although, in college, students are instructed never to leave the patient, what they experience in practice is the attitude of not abandoning the disease, which ends up generating inadequate care, with unnecessary approaches, since many diseases do not can be cured, but they have several therapeutic possibilities.

However, these possibilities are not yet the rule in health services in Brazil and in many countries. Futile treatments and incorrect management of symptoms such as pain and dyspnea were some of the approaches evidenced by several studies<sup>5-8</sup>, which demonstrates the lack of knowledge about palliative care acquired during medical training and the consequent professional unpreparedness. The fragility with which the theme is discussed, both among health professionals and in society, in general, is also noticed, because many still fear to

talk about death, dying and the care to be provided at the end of life<sup>5-8</sup>.

In this scenario, the need to evaluate the knowledge about palliative care of physicians residing in a university hospital is justified, since the acquisition of skills and abilities in this area depends on a theoretical-practical apparatus acquired throughout the academic formation and through the experiences of those subjects.

## Methods

This study is part of a project titled "Conhecimento sobre cuidados paliativos entre internos de medicina e médicos residentes de um Hospital Universitário em uma capital do Nordeste" (Knowledge about palliative care among medical interns and resident physicians of a University Hospital in a capital of the Northeast), which has, as target population, resident physicians of the University Hospital of the Federal University of Sergipe - HU- UFS (Hospital Universitário da Universidade Federal de Sergipe), on the health campus Prof. João Cardoso Nascimento Júnior. It is an exploratory, descriptive, transversal and quantitative approach. Data collection took place between June and July 2017, after approval of the study by the UFS Ethics Committee.

Residents who agreed to participate in the research signed a free and informed consent term, which ensures total anonymity for research participants, as provided for in Resolution of the Conselho Nacional de Saúde - CNS (National Health Council) 466/2012. Residents without ties to the HU-UFS were excluded, even though they were performing activities at the hospital on the occasion of the survey due to partnerships between institutions.

It was not possible to reach all HU-UFS resident physicians since many of them work in other hospitals and do optional internships in other states. Therefore, a sample calculation was performed that defined an accidental non-probabilistic sample of 96 individuals among the population of 136 resident physicians. For the data collection, a questionnaire was elaborated, using instruments of the literature, divided into two parts: the first with the sociodemographic characteristics of the participants; the second with questions that analyzed the general self-assessment on palliative care. In this last phase, six domains were analyzed: philosophy, pain, dyspnea, psychiatric problems, gastrointestinal problems and communication of bad news.

Categorical variables were described by absolute frequency and percentage. To compare characteristics of the categorical variables between the groups, the chi-square test or Fisher's exact test was used, when appropriate. Continuous variables were represented by mean and standard deviation. The results with a descriptive level for the p-value lower than 5% ( $p < 0.05$ ) were considered significant. The statistical analyses were processed by the Statistical Package for the Social Sciences program version 22.0.

## Results

The predominant profile of the sample was professionals between 20 and 29 years (59%), female (67%), and between one and four years of training (60%). A large part (46%) had an academic training at the Federal University of Sergipe, but a significant percentage (44%) graduated in other Brazilian states.

More than 80% of the sample studied professes a religion, with emphasis on Catholicism (61.5%), Spiritism (13.5%) and Protestantism (12.5%). People from other religious denominations, atheists, or who did not respond or ignored religion totaled 12.5%. As for medical specialties, 39 surveyed

(40%) studied residency in several specialties, such as pediatrics, radiology, pulmonology, orthopedics, endocrinology and neurology. Those who attended general surgery totaled 18 physicians (19%), medical clinic, 16 (17%), and gynecologists, infectologists and anesthesiologists totaled 23 professionals (24%).

Regarding the self-assessment on palliative care (Table 1), 75 physicians (78%) stated that they did not receive enough information about terminally ill patients while attending undergraduate courses. Regarding the adequate management of patients with pain, 62 professionals (65%) admitted not having enough knowledge. However, when asked about communication techniques and medical posture to delivering bad news, 70 physicians (73%) claimed to have learned such skills.

In the specific questions (Table 2), professionals presented a high percentage of correct answers in the "philosophy" domain. The first assertion, that palliative care should be provided only to patients with no possibility of cure, was considered false by 77 physicians (80%). In the second item, which questioned the concomitance of treatment for neoplasias and palliative treatment, the percentage of correct answers was even greater: 90 physicians (94%) agreed that there could be simultaneity between the two types of treatment.

**Table 1.** Self-assessment on palliative care (n=96)

	Yes		No	
	n	%	n	%
1. I received enough information about terminally ill patients during my under-graduation	21	22	75	78
2. I am familiar with the WHO definition of palliative care	45	47	51	53
3. I have received enough information for the management of patients in pain	34	35	62	65
4. I have received enough information about the control of the most common symptoms in patients under palliative care	43	45	53	55
5. I have learned communication techniques and the medical posture in delivering "bad news"	70	73	26	27

However, for the "pain" domain, most resident physicians still reproduce the medical culture that opioids can induce addiction: only 12 physicians (12.5%) correctly answered the question about this type of drug. Also, many residents were reluctant to increase the dosage of opioids due to the probability of respiratory depression: 63 physicians (66%) fear respiratory failure as a side effect, preferring not to increase the dose of morphine and as a result, not relieving the pain.

These drugs were also analyzed in cases of dyspnea. Besides being potent analgesics, they relieve the respiratory discomfort experienced by many

patients undergoing palliative care. In this area, just over half (54%) of the sample stated that morphine should be used to relieve the difficulty of breathing. Correctly, an identical proportion of residents (54%) did not correlate oxygen saturation levels (observed by the device called the pulse oximeter) to dyspnea.

With regard to psychiatric problems, most physicians (93%) were aware that some terminal patients require continuous sedation to alleviate suffering. However, 59 physicians (62.5%) mistakenly considered morphine to be the cause of delirium, and 39 physicians (40.5%) stated that benzodiazepines are effective in fighting it.

In the question of “gastrointestinal problems”, the first two items had a similar proportion of correct answers: 33 physicians (34%) stated that at the terminal stages of cancer no higher caloric intake was required, and 32 doctors (33%) agreed that steroids improve the appetite of patients with advanced neoplasms.

In the “communication” domain, almost all survey participants (99%) stated that communication

skills can be learned. Most (91%) of physicians also take it for granted that the degree of participation of patients and their families in decisions depends on the evolution of the disease. However, in the question about giving uncertain information to patients or relatives, there was a low percentage of correctness: only 29 physicians (30%) communicate information even if they do not have complete certainty of the case.

**Table 2.** Items analyzed and their correct answers (n=96)

	CA*	n	%
<b>Philosophy</b>			
1. Palliative care should only be provided to patients for whom there is no curative treatment	F	77	80
2. Palliative care should not be provided in conjunction with cancer treatments.	F	90	94
<b>Pain</b>			
3. When opioids are taken regularly, steroid anti-inflammatories should not be used	F	80	83
4. The long-term use of opioids can often induce addiction	F	12	12,5
5. The use of opioids does not influence survival time	V	53	55
6. Opioids are the drugs of first choice in the management of patients in pain	F	89	93
7. Some antidepressant and anticonvulsant medications help relieve cancer pain	V	93	97
8. The use of laxatives is effective in preventing opioid-induced constipation	V	61	63,5
9. Increased dosage of opioids should be limited because respiratory depression may occur as a side effect	F	33	34
<b>Dyspnea</b>			
10. Morphine should be used to relieve dyspnea in cancer patients.	V	52	54
11. The levels of oxygen saturation are correlated to dyspnea	F	52	54
12. Anticholinergic drugs or scopolamine hydrobromide are effective for the relief of bronchial secretions	V	58	60
13. If the ambient temperature is kept higher (warm), patients with dyspnea often experience relief	F	23	24
<b>Psychiatric problems</b>			
14. Benzodiazepines should be effective for delirium	F	57	59,5
15. Some terminally ill patients will require continuous sedation to relieve the suffering	V	89	93
16. Morphine is often the cause of delirium in terminally ill patients or in cancer patients	F	37	38,5
17. Delirium often occurs in patients who are prone to mental symptoms	F	46	48
<b>Gastrointestinal problems</b>			
18. At the terminal stages of cancer, higher caloric intake is required compared to the initial stages	F	33	34
19. Steroids should improve appetite among advanced cancer patients	V	32	33
20. Intravenous infusion will not be effective in relieving dry mouth in terminal patients	V	46	48
<b>Communication</b>			
21. The ability to communicate can be learned	V	95	99
22. Information that patients and families request and the degree to which patients and families participate in decision-making may change according to the course of the disease and condition	V	87	91
23. Uncertain information should not be given to the patient or family as it may cause additional anxiety	F	29	30

After the conference of the items that integrated the six domains, the results of residents' knowledge about palliative care were reached: 23% had an unsatisfactory result (less than 50% of correct answers); 54% presented an acceptable result (50% to 70% of correct answers); 16% obtained a desirable result (71% to 80% of correct answers) and 7% had an excellent result (more than 80% of correct answers).

## Discussion

Medical knowledge has been undergoing a process of fragmentation: specialties and sub-specialties subdivide the human body into smaller and smaller parts and make them the object of study in numerous medical areas. Often, in the midst of this growing subdivision, with all the technological arsenal offered, the physician presumes he has power over disease and death. However, when the disease does not yield to the recommended treatment, and the patient moves to death, the figure of the unprepared physician appears, who does not know how to deal with essential issues for the care of the patient without the possibility of a cure<sup>9</sup>.

Confirming the fragmentation and increasingly specific services, the sample of this study was formed by doctors from various specialties. In the HU medical residency program there is neither intensive medicine nor residency in oncology, which may have modified the final result, since it is known that in these categories the topic of palliative care is much discussed. In addition, in these areas, healing is not always the ultimate goal of treatment, but rather provides a better quality of life.

Even so, palliative care is still poorly addressed in medical schools. Several studies emphasize that both medical students and trained physicians are not given guidance on palliative care. This was demonstrated by a survey carried out in São Paulo with medical students in grades 5 and 6, among whom 83% did not receive satisfactory information about terminally ill patients during their undergraduate studies<sup>10</sup>. Another study, conducted in British Columbia (Canada), indicated that 75% of the physicians in the sample did not receive adequate palliative care education, adding that most residents wanted the residency program itself to provide a more solid theoretical and practical basis for palliative care<sup>11</sup>.

With similar results, in our research, 78% of resident physicians said they had not received information on the subject, demonstrating that the topic is often not addressed in medical schools. Future residents themselves and physicians indicate

that palliative care has rarely been discussed in the classroom. Whether in São Paulo<sup>10</sup>, British Columbia<sup>11</sup> or Aracaju, most medical professionals still live in limbo when it comes to the subject.

Among the various aspects in which palliative care can be subdivided, pain is undoubtedly one of the most complex. In practice, many patients with pain symptoms may need medical attention not only in referral hospitals but in any open-door health care facility. But doctors, in general, have minimal knowledge about pain: in our study, more than half of the sample (65%) reported not having received enough information to know how to handle it.

Confirming these data, Pinheiro<sup>10</sup> states that 58% of future physicians did not receive adequate information for pain control, and Santos<sup>12</sup> is also emphatic in stating that the various aspects of pain are not well treated by Brazilian physicians. Incomplete training and difficulties in prescribing analgesic drugs have made it impossible to adequately control the suffering and, consequently, the physical improvement that would give the patient the necessary autonomy to deliberate about their treatment.

It should be noted that, in the present study, there was no significant difference in the self-assessment in relation to the medical specialty, the place and time of formation. The non-correlation between training time and self-assessment can be explained by the fact that having clinical experiences does not always mean dealing with patients undergoing palliative care; after all, a doctor may have ten years of practice and have little contact with such patients.

However, this reality is not fixed, and many physicians with more undergraduate time may have better self-perception of palliative care, as shown in the study of 74 residents of the University of Washington and the Medical University of South Carolina<sup>13</sup>. According to the survey, the more experience they have, the better the self-assessment of physicians, which corroborates the importance of taking advantage of the opportunities to live to improve the skills in palliative care, not only after graduation but since their classes in college.

But it should be noted that educational institutions do not have only mishaps and failures: in the present investigation, 70% of the resident physicians learned communication techniques and medical posture to deliver bad news. This proportion was similar to that of Lech, Destefani and Bonamigo<sup>14</sup>, in which 77.5% of the clinical staff of a university hospital considered their ability to transmit bad news to the patient as good/very good.

Another study, conducted in India by Mohamed *et al*<sup>15</sup>, showed that the majority of a sample of 120 resident physicians feel comfortable discussing prognosis and treatment goals with patients and family members. However, the same research<sup>15</sup> showed that when the communication involved more delicate issues, more than half (75%) of the physicians never participated in meetings with family members. This contradiction was explained by the fact that the research was self-assessing, that is, the doctors could even say that they felt safe to give bad news, but in reality, when the information to be given was more delicate, many of them did not deliver it.

In the present study, 77 physicians (80%) stated that palliative care should not be offered only to patients with no possibility of a cure. A similar proportion was found in research with medical students, in which 79% of the sample also reported that palliative care can be provided concomitantly with other treatments<sup>5</sup>. This finding is based on the premise of the Manual de Cuidados Paliativos da Agência Nacional de Cuidados Paliativos (Manual of Palliative Care of the National Palliative Care Agency)<sup>16</sup>, which makes it clear that such practice does not mean giving up treatment, but rather giving dignity and quality of life to the patient in his terminality since comfort is also a therapeutic measure.

Regarding opioids, 85% of the residents considered that the prescriber should not recommend them, or should do so sparingly, because of the risk of addiction. This situation was also evidenced by Roy and collaborators<sup>17</sup> in Quebec, based on a study that assessed the practice of opioid prescription for patients with non-neoplastic pain. In this Canadian province, 73.2% of the physicians assessed did not feel safe to prescribe opioids, mainly due to their concern with drug abuse and addiction. In this same study<sup>17</sup>, 43.1% of the physicians suggested more training on the indications and the use of these drugs.

In our study, the association between responses on opioid addiction and the place of training of the resident physician was very close to being significant ( $p = 0.05$ ). There was a slight predominance in this result since the few doctors who got the item right enrolled in medicine at the Federal University of Sergipe. However, since  $p$  was not less than 0.05, it can not be said that the fact is statistically significant.

Also regarding opioids, 62.5% of the residents considered the statement that the increase in dosage leads to respiratory depression. This myth, widespread among laypeople and professionals, ends up limiting the use of morphine even more, because physicians still fear that the patient will have a lower level of consciousness and, therefore, a respiratory arrest.

The possibility of this medical emergency was investigated by Quintero *et al*<sup>18</sup>, who evaluated the level of information on palliative care of 46 resident physicians from the city of Havana, Cuba, focusing on the characteristics of the treatment for pain. Of the physicians with more than ten years of clinical practice, 87.5% said that morphine always causes respiratory depression, which shows that, even with experience, the myth of respiratory arrest is still present among many physicians. The authors of the Manual de cuidados paliativos em pacientes com câncer (Manual of Palliative Care in Cancer Patients)<sup>19</sup> confirm that opioids are the drugs of choice to treat dyspnea in terminal patients, emphasizing that one must first identify the cause of dyspnea and take actions such as keeping the environment quiet and of the raised bed.

In the case of dyspnea, a little more than half of the participants (54%) considered that morphine should be used to alleviate this condition in patients with cancer, which indicates knowledge of the extent of the drug beyond pain relief. This finding is also confirmed by a study by Yamamoto *et al*<sup>20</sup>, in which 67% of a sample of 434 physicians reported that morphine was effective in alleviating dyspnea in palliative care patients. In a systematic review, Rema<sup>21</sup> also confirms opioids, provided they are properly administered, as safe drugs to relieve dyspnea in patients with oncological diseases and other conditions such as chronic obstructive pulmonary disease and heart failure.

However, it is important to emphasize that in treating pain it is not necessary that opioids are promptly prescribed, after all there are other drugs, such as simple analgesics or non-hormonal anti-inflammatory drugs (NSAIDs), which may serve as the first medications of choice. In the present study, 83% of physicians stated that non-steroidal anti-inflammatory drugs (NSAIDs) could be administered when opioids were already being used, which leads us to infer that HU-UFS residents have good pharmacological knowledge. Eyigor<sup>5</sup> found a much lower accuracy: only 14.9% of medical students would allow the use of NSAIDs and opioids.

In addition to more traditional medications for treating pain, drugs called “modulators”, such as anticonvulsants and antidepressants, may be used. In our questionnaire, a majority (97%) of physicians agreed that such medications are indicated to relieve the suffering of patients. This finding represents improvements for the care of people who need to have their pain treated and discomfort resolved. A quantitative and cross-sectional study aimed at evaluating adjuvant pharmacological treatment with antidepressants in a hospital, found that 43% of patients already used amitriptyline in addition to analgesic therapy<sup>22</sup>.

In the present study, 93% of residents said that ongoing sedation can alleviate patients' suffering in palliative care. The high percentage shows that participants know that the patient's discomforts do not necessarily mean pain, which allows treatment not only with opioids but with sedative agents. However, in practice, many practitioners still fear using these medications.

In a qualitative study by Leboul<sup>23</sup>, several health professionals, including physicians, demonstrated that they were aware of the indications of when to administer a sedative agent, but they had difficulty following the protocols and set the time to start administration of midazolam, which is the greatest example of a sedative drug. The speech of one of the physicians demonstrates their caution in using such agents, mainly for relating the sedatives to the respiratory discomfort. In the view of this professional, there are risks of misinterpretation as to the ideal moment to use these medications<sup>23</sup>.

In the present study, a peculiar result was found when we inquired about the use of corticoids in order to improve appetite in advanced stages of cancer: a great part of the sample (40%) preferred to abstain from answering, ignoring the answer to the question or not feeling safe to answer it. This result can be explained by the fact that the pathophysiological basis of this relationship has not yet been fully clarified and there is a need for further studies on the subject.

The call for further research was made in a recent study of 114 patients in Texas (US) clinics and hospitals, which sought to determine whether or not there would be an improvement in fatigue, anorexia, cachexia, anxiety, depression, and pain after the use of a glucocorticoid. Within 8 to 15 days after the onset of dexamethasone administration, fatigue, anorexia, and cachexia decreased, although the same did not occur with pain, anxiety, and depression. This fact shows that corticoids are beneficial to patients with nutritive restriction, reducing inflammatory cytokines and significantly increasing appetite<sup>24</sup>.

Almost all (99%) of the resident physicians of our study confirmed that the ability to communicate is not innate and can be learned. In a review article, Borges and Santos Junior<sup>25</sup> defend that communication should be a means to create links between physician and patient, ensuring trust in the professional work and, therefore, ensuring greater adherence to therapeutic proposals. Thus, even if there is no possibility of a cure, the adequate relationship between the health team, the patient and the family will favor treatment with broad therapeutic perspectives in palliative care.

Still on the subject, Araújo and Silva<sup>26</sup>, in a publication about communication strategies, cite some techniques to deal with patients under palliative care: asking what the patient knows about his condition; making yourself available to help/talk; speaking with sufficient clarity to be understood and adopting prudent sincerity, exposing information gradually. When investigating the frequency of these strategies among study participants, the authors found that they were underused, not exceeding the rate of 22.7%.

There was a significant difference between the years of training and the conception of how to inform patients and their families. The doctors who answered the question of "communicating information", even if they were undetermined, had less than a year of training, which can be explained by the fact that, at the end of the undergraduate course, there is the internship and the approach to issues of medical ethics.

However, addressing these issues only in the last few periods of the course is not the best way to solve the lack of discussions throughout the course, since, according to Pimentel, Oliveira and Vieira<sup>27</sup>, it is necessary to teach transdisciplinary ethics throughout the undergraduate course, improving communication skills and the ability to face such unique moments in the doctor-patient relationship.

As in other studies, the physicians in our sample have shown little knowledge about palliative care. Only 7% of the residents had "excellent" results, with more than 80% of correct answers in the domains assessed. Even more concerning is the percentage of physicians who scored less than half of the items surveyed: 23% of the sample.

This reality is present in many medical training centers and hospitals. In Catanduva (São Paulo), Brugugnolli, Gonsaga and Silva<sup>28</sup> conducted a study with physicians and also verified the inconsistency of knowledge about ethics and palliative care. Only 2.6% of the sample of 76 individuals correctly answered the question about the definition of palliative care: the majority (59.2%) associated the term only with the relief of physical suffering and quality of life.

Another study, which also evaluated knowledge in palliative care, but in medical students at a university in Brasilia, was categorical in stating that the students' understanding of the subject is not good. In that study, Lemos *et al*<sup>29</sup> stated that neither the internship (the period in which students have a greater practical workload) was sufficient to improve learning in this topic, and the lack of knowledge gain was statistically significant. However, Schmit *et al*<sup>30</sup>, in evaluating education and experience among residents, stated that physicians who had more contact with palliative care

during college felt more confident in their residency activities. Despite these discrepancies, what connects the aforementioned studies<sup>29,30</sup> and the present study is the absence or little training in palliative care.

It is important to emphasize the scope of our study, which has gone into various fields, ranging from philosophical issues to more concrete questions such as pain management and other symptoms, in order to try to reduce bias. However, there were limitations, such as questions that more fully evaluated each domain and the absence of comparisons between the students of the first year of residence with those who study other periods in order to observe their evolution.

### Final considerations

Most physicians considered that they did not receive sufficient information about patients in

terminal situation during medical school, and only a very small percentage presented high levels of accuracy in the specific questions. These results suggest how inadequate medical training in our country regarding palliative care is since good intentions are not enough: it is necessary to have minimal notions and apply them correctly.

Since most residents acknowledge that they did not receive enough education on key subjects such as pain during graduation, it is necessary to create mechanisms to improve medical education. This can be done through disciplines that focus on this theme or by improving existing disciplines, with new approaches and even internships during residence about this type of therapy. Faced with the ills of reality experienced by the professionals of university hospitals, the need for the faculty to study even more about our current medical education is evident.

*This article derives from a medical school final project at the Universidade Federal de Sergipe (Federal University of Sergipe, Brazil).*

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#### Participation of the authors

Marcos Vinícius da Conceição and Maiane Cássia de Castro Vasconcelos fully participated in the research stages. Caio José Coutinho Leal Telino and Erik Vinícius Barros Guedes performed the statistical analyses. Déborah Mônica Machado Pimentel guided the project. All writers wrote the article and corroborate the final version of the paper.


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