

Medical School Students' Knowledge of Pain and Palliative Care: An Observational Study

Carolina Koutras Jacob¹, Marina Perini¹, Carlos Augusto P. Zerbini¹, Marta H. R. Pires², Camila Dos Santos Leite^{3,4}, Oscar César Pires¹

¹Laboratory of Pharmacology and Physiology, Medicine Department, Taubaté University, Taubaté, Brazil

²Vera Cruz Hospital, Campinas, Brazil

³Laboratory of Immunopharmacology and Molecular Biology, São Francisco University Medical School, Bragança Paulista, Brazil

⁴Laboratory of Cell and Molecular Tumor Biology and Bioactive Compounds, São Francisco University Medical School, Bragança Paulista, Brazil

Email: carolzinha_koutras@hotmail.com, mari.perini@hotmail.com, capzerbini@outlook.com, marta_helena5@hotmail.com,

*camilayantony@gmail.com, oscar.pires@unitau.br

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Abstract

Background: Pain and palliative care are a reality in daily routines of medical treatment. However, the theoretical-practical curricula of traditional medical school course still unsatisfactorily contemplate pain management, as well as the palliative care approach. **Objective:** To assess the knowledge of medical students about pain and palliative care, as well as to identify their perception of teaching these topics during hospitalization. **Methods:** A cross-sectional observational study, with a descriptive and exploratory approach, data collection for which was carried out between August and November 2020. The target population was medical students, who responded to an online survey of a quantitative, anonymous and follow-up nature. The survey study variables concerned knowledge about pain management and palliative care. **Results:** An expressive majority of academics showed difficulty in understanding the pathophysiology of pain related to prescribing drugs for pain management purposes, and all of them believe that it is necessary to acquire more knowledge about pain treatment. In parallel, only 9.3% report having received sufficient information regarding palliative care during medical school. **Conclusion:** The results suggest a certain lack of knowledge and insecurity among medical school students with respect to pain management and care for patients receiving palliative care. The didactical approach to this theme is still deficient in the medical curriculum and requires immediate improvement and new proposals that address the training of these professionals in a more specific and effective way.

Keywords

Pain, Palliative Care, Medical Students, Academic Institutions

1. Introduction

The attention of health professionals to patients with pain allows, in addition to humanitarian aspects, the rational use of the health system and available drugs. In addition, it provides a reduction in the cost of health care, a reduction in the socioeconomic impact, with less time away from work activities, and a reduction in the psychosocial repercussions resulting from pain [1].

In addition, pain is associated with longer hospital stays and its assessment and correct management is related to reduced use of analgesics and duration of mechanical ventilation [2] [3]. Nevertheless, it is common that healthcare institutions still have professionals who do not have enough knowledge, experience, or skill to recognize, evaluate and take early and effective measures to control pain [4].

Effective pain treatment faces barriers related to professionals' lack of knowledge and reluctance to use opioid analgesics, due to lack of knowledge about the correct application and cost-effectiveness of this drug class. The belief of pharmacological dependence is emphasized, as well as the difficulty of believing in the manifestation of patients facing the experience of pain and interventions to alleviate it [4] [5] [6] [7].

Additionally, similar to pain treatment, there is a lack of knowledge regarding palliative care, which is of paramount importance for the physician to integrate psychological, social and spiritual aspects into care. In addition to having good communication with the patient, the involvement of family members and a multidisciplinary team is important in promoting patient autonomy by providing information about diagnosis and prognosis [8].

Most medical school curricula superficially address the issue of pain, and this complaint is present daily in clinical practice [9] [10] [11]. A study carried out at the University of Michigan identified that only 10% of physicians had received formal education on pain and its treatment during medical school and residency [12].

Thus, the lack of knowledge on the subject causes great difficulties for physicians to make the correct diagnosis and treatment, bringing to light the need to improve pain education during the medical school course [13] [14]. Furthermore, many medical curricula lack disciplines that directly address palliative care, from theory to clinical application; therefore, information regarding pain and palliative care is not sufficiently taught during medical school [15] [16].

2. Objective

Evaluate the knowledge of medical students about pain and palliative care, as

well as identify their perception about teaching of these topics during medical school.

3. Material and Methods

This is a cross-sectional observational study, with a descriptive and exploratory approach. The data collection was carried out between August and November 2020, at a university in the interior of São Paulo, Brazil.

The choice of sample for the study was characterized according to previously defined inclusion criteria. The target sample was determined by convenience, including at least 30% of the studied population, that is, 15 students each in the 5th and 6th years of medical school. The participants were male and female, regularly enrolled in the medical school, and agreed to anonymously participate, and sign the Term of Free and Informed Consent (TCLE), answering the questionnaire completely and not having a degree of kinship with the researchers.

Data collection took place after approval by the Research Ethics Committee of the Taubaté University (Protocol: 2.650.36/2020) in line with Resolution 466/2012 of the National Health Council and other regulations in force in the country. For this purpose, the participants were approached through an online questionnaire (*Google Forms*) of a qualitative and quantitative nature, which was previously validated [17] and applied in a study with medical students from the state of São Paulo, Brazil [18] and considering that most of the participants, that is, 50%, should show knowledge on the subject, without demonstrating the need for improvement [18] (**Appendix 1**).

Each questionnaire received a numerical code as a way of distinguishing it from the others and was available for 90 days. In this questionnaire participants were asked about their perception of pathophysiological knowledge, semiology, and therapy associated with pain.

The data were analyzed in percentages and interpreted universally and separately, and presented in tables, in the form of absolute numbers or percentages using Microsoft Office Excel 2016.

4. Results

The study included 32 medical students. Of these, approximately 43.8% stated that they had received sufficient information about pain management during their medical school studies.

Regarding the care of terminally ill patients (palliative care), 90.6% of the students reported not having received enough information during medical school. In addition, most academics (56.3%) stated that they did not know the definition of Palliative Care conceptualized by the World Health Organization (WHO).

As for knowing about the difference between nociceptive and neuropathic pain, 75% of students considered themselves able to distinguish these.

Regarding knowledge about the availability of scales for pain assessment, most students (90.6%) reported knowing some type of scale for assessment, but 53.1% said they did not frequently use these scales when assessing patients with pain.

Another relevant data is that 81.3% of the academics mentioned that they did not receive enough information about the control of the most common symptoms (dyspnea, vomiting, constipation and cachexia) of patients under palliative care. In addition, 75% said they did not feel comfortable communicating “bad news” to patients and their families. Furthermore, all (100%) of the academics stated the need to improve their knowledge to deal with terminally ill patients.

Regarding pain control and treatment, 90.6% of students stated that they did not feel prepared to start pain treatment in cancer patients, and 100% reported being afraid to prescribe opioid drugs for terminally ill patients due to the risk of respiratory depression.

As for choosing the ideal drug to start pain treatment, 62.5% of students said they knew which opioid drug they would choose. Furthermore, 53.1% of the students claimed to know the mechanism of action of antidepressants used in pain management.

On the other hand, 87.5% of students stated that they did not know the mechanism of action of anticonvulsants used in pain management.

The results for participants’ knowledge of pain management and palliative care are detailed below (**Table 1**).

Table 1. Knowledge of medical students about pain management and palliative care.

<i>Question</i>	<i>Yes</i>	<i>No</i>
During medical school, did you receive enough information to handle patients with pain?	43.8%	56.3%
During medical school, did you receive enough information about the care of terminally ill patients?	9.4%	90.6%
Do you know the World Health Organization definition of palliative care?	43.8%	56.3%
Do you know the difference between nociceptive and neuropathic pain?	75%	25%
Do you know any scale for pain assessment?	90.6%	9.4%
If you answered yes to the previous question, do you always use scales to assess patients with pain?	37.5%	53.1%
During medical school, did you receive enough information about the control of the most common symptoms (dyspnea, vomiting, constipation, cachexia) in patients in palliative care?	18.8%	81.3%
During medical school, did you receive enough information about medical communication and posture to “give bad news” to patients and families?	25%	75%
Do you think it is necessary to improve your knowledge in the treatment of patients with pain?	100%	0%
When assisting a cancer patient, do you feel safe to start pain treatment?	9.4%	90.6%
When starting pain treatment with opioids, do you know which drug you would choose?	62.5%	37.5%
Do you know the mechanism of action of antidepressants in pain management?	53.1%	46.9%
Do you know the mechanism of action of anticonvulsants in pain management?	12.5%	97.5%

5. Discussion

The present study evaluated the knowledge of 5th and 6th grade medical students about pain management and palliative care, identifying their knowledge and also their perceptions about teaching these topics during medical school.

It is known that care for patients with pain complaints should be individualized and managed in the best possible way, in order to reduce impacts on physical and psychological health, as well as to avoid and/or minimize the economic impacts generated by inadequate treatment and consequent disability from the pain.

Palliative care encompasses the promotion of life quality for both patients and their families, who face illnesses that threaten the continuity of life, including the prevention and relief of suffering and pain treatment, in the physical, psychological, social and spiritual contexts [19]. In addition, it is important to emphasize that palliative care is a patient's right and the state's duty to encourage the training of medical professionals, so that the population has access to more humanized and higher quality care.

In our study, some data are worrying, such as most academics reported that they did not receive enough information for pain management, as well as that 100% stated that it was necessary to improve their own knowledge about the treatment of patients with pain. Furthermore, 90.6% of participants stated that they had not received enough information about palliative care. In a similar study, although most recent graduates claimed to have received information about pain and palliative care medical school, their knowledge on the subject was considered insufficient for clinical practice [20].

In other studies, when asked about their knowledge regarding the provision of palliative care, most medical students declared themselves unable to offer it [21], as well as reported having limited training and minimal clinical experience in this context, and the vast majority declared feeling uncomfortable when caring for terminally ill patients and their families [22].

Palliative care has been recognized by the WHO since 1990 when the focus was only on cancer patients, but it was revised in 2002, including care for heart, kidney, congenital, genetic, degenerative, neurological and SIDA diseases [19]. Since then, especially in the last decade, this concept has been disseminated on a large scale in the medical field.

Another relevant data found in our study was that most students stated that they had not received enough information about medical communication posture to "give bad news" to patients and family members, data that corroborate a study that analyzed the perceptions of medical academics on communicating bad news in medical education [23].

Death is a reality in medical experience; unfortunately, a medical professional is not always able to avoid unfavorable outcomes. However, the physician must always be able to manage unfavorable clinical situations, with the goal of assuring the well-being of the patient and his family, always emphasizing beneficence

and non-maleficence [23].

Given this evidence, it is clear that there is a need for an improvement in the curricular systematization regarding the palliative care approach [22] [24] [25], since the provision of care in different aspects (pain control, promotion of comfort and independence of terminal patients) together with the positive attitude on the part of the medical professional, directly impact the patient and his family [21] [26] [27]. In addition, greater adherence to this theme in medical school will allow for an improvement in factors such as communication and humanization, both essential and common features in the professional life of future physicians. Furthermore, it is essential for health professionals to know the best way to communicate bad news and support their patients and families.

With regard to pain, it was evident in our study that a good part of the academics still demonstrate insecurity in its identification and classification, as well as in the adequate management of pain, since they declared not knowing the difference between nociceptive and neuropathic pain. This distinction is of paramount importance for the management of patients with pain and/or in a terminal state, as it directly reflects on the choice of treatment and appropriate conduct [28].

In addition, 90.6% of academics stated that they felt insecure about initiating pain treatment in cancer patients, and 100% were afraid to prescribe opioid drugs for terminally ill patients due to the risk of respiratory depression. In contrast, in a study that evaluated differences in cancer pain management attitudes and practices between oncologists and palliative care physicians, both experts considered patients' reluctance to take opioids, which is mainly due to fear of adverse effects of these drugs [29]. Thus, it is inferred that there is a need to improve the knowledge and treatment of pain and its implications during medical school [30], so that these professionals can better inform patients, especially cancer patients and their families, about the use and effects of opioids [31].

On the other hand, a positive finding was that the majority (90.6%) reported knowing some type of pain scale. It is known that the measurement of pain through specific scales will facilitate the planning and adequate treatment of the patient [32], in addition to humanizing the provision of care.

Another positive finding was that 100% of students were aware of the need to improve their own knowledge about the management of patients with pain. This fact shows that these professionals constantly seek to improve their knowledge and consequently tend to provide a more humanized and better quality care to patients with pain [33]. Knowledge generates security for the professional in decision-making regarding treatment, optimizing the use of drugs and resources available in the health system, and mitigating the socioeconomic impacts resulting from work incapacity in the face of pain.

Another positive factor found was the knowledge of most academics about the mechanism of action of antidepressants used in pain management, which expands the possibilities of pharmacological treatments. On the other hand, the

statement by 87.5% of students of not knowing the mechanism of action of anticonvulsants used in management is worrying.

Although the issue of the use of these drugs by recently graduated physicians still requires further evidence [34] [35], both antidepressants and anticonvulsants have been used as adjuvants in the treatment of pain, especially neuropathic pain and psychological changes resulting from it [28] [36] [37] [38]. The combination of these drugs has been shown to reduce neuropathic pain in cancer patients [35]. Therefore, it is inferred that there is a great need to improve the knowledge of future physicians about the use of alternative drugs available for the treatment of pain and its implications, especially for cancer patients.

Among the limitations of the study are the low number of participants, inclusion of students from a single university, and several survey questions that present the possibility of subjective answers. Even so, we believe that this study can contribute to an important paradigm shift and improvements related to the expansion of content focused on pain and palliative care during medical training.

This study emphasized that the construction of theoretical-practical knowledge is essential in the training of general practitioners, and it is necessary to emphasize the need for relatively common scenarios of a professional's day-to-day routine so that when they leave the university they are able to efficiently navigate unfavorable health care situations, having full confidence to conduct the management of patients under palliative care with significant pain complaints.

6. Conclusions

The results obtained show a lack of knowledge regarding pain management and assistance to patients in palliative care.

Most medical school students showed some insecurity in relation to aspects such as communication of "bad news", treatment of cancer patients, lack of knowledge on the subject, use of pain scales, adverse effects of opioids and mechanism of action of adjuvant drugs used in pain management.

In addition, many of these students believe that they are not receiving enough information during their medical school training, and believe that it is necessary to improve their knowledge on the subject.

Thus, it is concluded that the approach to the issues in question is still deficient in the medical curriculum, requiring a review and optimization of proposals that contemplate in a more specific and effective way the training of these professionals, a fact that directly reflects on the quality and humanization of the care provided.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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Appendix 1. Questionnaire, Adapted from [17] [18]

Numeric code: _____

1. During medical school, did you receive enough information to handle patients with pain?

Yes () No ()

2. During medical school, did you receive enough information about the care of terminally ill patients?

Yes () No ()

3. Do you know the World Health Organization definition of palliative care?

Yes () No ()

4. Do you know the difference between nociceptive and neuropathic pain?

Yes () No ()

5. Do you know any scale for pain assessment?

Yes () No ()

6. If you answered yes to the previous question, do you always use scales to assess patients with pain?

Yes () No ()

7. During g medical school, did you receive enough information about the control of the most common symptoms (dyspnea, vomiting, constipation, cachexia) in patients in palliative care?

Yes () No ()

8. During g medical school, did you receive enough information about communication and medical posture to “give bad news” to patients and families?

Yes () No ()

9. Do you think it is necessary to improve your knowledge in the treatment of patients with pain?

Yes () No ()

10. When caring for a cancer patient with pain, do you feel safe to start pain treatment?

Yes () No ()

11. When starting pain treatment with opioids, do you know which drug you would choose?

Yes () No ()

12. Is your biggest fear in prescribing opioids to terminally-ill patients?

Respiratory depression () Chemical dependency ()

13. Do you know the mechanism of action of antidepressants in pain management?

Yes () No ()

14. Do you know the mechanism of action of anticonvulsants in pain management?

Yes () No ()
