

# Pain and palliative care: the knowledge of medical students and the graduation gaps

*Dor e cuidados paliativos: o conhecimento dos estudantes de medicina e as lacunas da graduação*

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## ABSTRACT

**BACKGROUND AND OBJECTIVES:** Currently, the medical course does not provide complete education and handling of pain, and it is also devoid of disciplines addressing thanatology in palliative care. The objective of this study was to evaluate the knowledge about pain and palliative care of medical students and their perception on how these themes are taught the graduation course.

**METHODS:** We invited to participate in the survey students of the medical school who are concluding the fourth, fifth and sixth year of graduation at the Federal University of Health Science of Porto Alegre. The demographic and characterization data of the sample were collected, and a questionnaire was applied and validated with 19 direct questions about pain and palliative care.

**RESULTS:** Forty-seven students agreed to participate in the study. The vast majority mentioned not receiving enough information during the undergraduate program about the proper handling of patients with pain, and patient care in a terminal situation.

**CONCLUSION:** This study highlights education gaps on pain and palliative care in medical schools. It shows the difficulties of the students have to put the theoretical knowledge into practice, for example, their insecurity in handling pain, especially when it comes to the use of opioids.

**Keywords:** Academic institutions, Analgesia, Medical students, Palliative care, Students.

## RESUMO

**JUSTIFICATIVA E OBJETIVOS:** Atualmente, o curso de medicina não contempla de forma completa o ensino e o manuseio da dor, assim como é desprovido de disciplinas que tratem da

tanatologia abordando os cuidados paliativos. O objetivo deste estudo foi avaliar o conhecimento sobre dor e cuidados paliativos por parte dos estudantes de medicina e a sua percepção sobre o ensino dessas temáticas durante a graduação.

**MÉTODOS:** Foram convidados a participar do estudo os alunos do curso de medicina que estavam finalizando o quarto, quinto e sexto anos de graduação na Universidade Federal de Ciências da Saúde de Porto Alegre. Os dados demográficos e de caracterização da amostra foram coletados e foi aplicado um questionário validado com 19 perguntas diretas sobre dor e cuidados paliativos.

**RESULTADOS:** Quarenta e sete alunos aceitaram participar da pesquisa. A grande maioria referiu não receber informações suficientes durante o curso de graduação em relação ao correto manuseio de pacientes com dor, e sobre o cuidado de pacientes em situação terminal.

**CONCLUSÃO:** Este estudo apontou lacunas no ensino sobre dor e cuidados paliativos na graduação médica. São demonstradas as dificuldades dos alunos em transpor o conhecimento teórico para a prática profissional, a exemplo da insegurança no manuseio da dor, especialmente em se tratando do uso de opioides.

**Descritores:** Analgesia, Cuidados paliativos, Estudantes, Estudantes de medicina, Instituições acadêmicas.

## INTRODUCTION

Care provision by health professionals to patients with pain allows the rational use of the health system and drugs, in addition to humanitarian aspects involved. It also provides a reduction in disabilities and absenteeism due to pain. Consequently, public health care expenditures and the psychosocial and economic repercussions due to pain<sup>1</sup> are reduced. In addition, the pain presence is associated with a longer hospitalization period<sup>2</sup>, and its evaluation is related to the reduction of analgesic use and mechanical ventilation duration<sup>3</sup>. However, it still occurs in professional health institutions that do not have enough capacity to recognize, evaluate and take effective measures to control the pain symptom<sup>4</sup>.

Correct pain control and its treatment face barriers related to 1) professionals' knowledge deficit in relation to pain phenomenon dimension; 2) reluctance to use opioid analgesics due to lack of knowledge<sup>5-7</sup>; 3) belief in pharmacological dependence; 4) difficulty in believing the patients manifestation in response to pain experience and interventions to ameliorate it<sup>4</sup>.

As with knowledge about pain, knowing about palliative care is fundamental to deciding on the best behavior, once

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is through this the physician will be able to integrate psychological, social and spiritual aspects in the care, having good communication with the patient, his family, and the multi-professional team and promote autonomy by providing diagnostic and prognostic's information<sup>8</sup>.

Most of the medical curriculum briefly integrate the pain issue and in clinical stages, this is often a non-existent subject<sup>9-11</sup>. Indeed, in a study conducted at the University of Michigan, only 10% of physicians had received formal education about pain and its treatment during medical school, medical residency and/or continuing education<sup>12</sup>. Therefore, lack of knowledge about pain makes it difficult for physicians to correctly diagnose and treat it, which reveals the need to improve pain education during undergraduate medical courses<sup>13,14</sup>.

Likewise, many medical curricula are devoid of disciplines dealing with the thanatology addressing palliative care. The teaching of health professionals, including the physician, is more technical-oriented, sometimes neglecting the human side<sup>8</sup>. Therefore, as with pain, palliative care is not sufficiently taught during graduation<sup>15,16</sup>. In Brazil, knowledge about palliative care is often acquired in other undergraduate fields as an intuitive feature due to lack of specific training<sup>17</sup>.

This study aimed to evaluate the knowledge about pain and palliative care, and the perception about these subjects' teaching during graduation, by the students at the end of the fourth, fifth and sixth years of the medical course at The Federal University of Health Sciences of Porto Alegre (UFCSPA).

**METHODS**

All students of UFCSPA medical course, which in December 2016 were finishing their fourth, fifth, or sixth year of graduation, were invited to participate anonymously and voluntarily, totaling 264 students. Researchers contacted the survey undergraduates via online networks. The Free Informed Consent Form (FICF) was sent, and the questionnaires were made available through Google Docs.

All 264 students in the fourth, fifth, and sixth years of the UFCSPA medical course were invited to participate in the study, and the final sample consisted of all the students who answered the online instrument, being, therefore, a non-probabilistic sample.

Questions were asked to characterize the sample, including the year of the student's education, gender, marital status, the previous need for medical care in the medium or long term,

health plan and medical specialty to be chosen after graduation. Students' satisfaction with the undergraduate course and their performance were evaluated using the visual analog scale (VAS) from zero to 10 (zero indicating dissatisfaction and 10 indicating total satisfaction). To verify knowledge about pain and palliative care, a questionnaire with 19 direct questions on these subjects, previously validated<sup>18</sup> and applied in a study with medical students from the State of São Paulo<sup>19</sup> was applied.

The Ethics and Research Committee in Human Beings of UFCSPA, protocol No. 2,162,651 of July 7, 2017, approved this study.

**RESULTS**

From the variables obtained in the socioeconomic questionnaire, it was possible to identify the profile of the 47 students who agreed to participate in the research. Undergraduates of the fifth year are the majority (46.8%), followed by the fourth year (42.6%) and sixth year (10.6%). The male sex (53.2%) and the single marital status (97.5%) prevailed. In relation to the specialization area, 18 areas were mentioned, of which are highlighted surgery, with 11 interested students, neurology with 5, dermatology and pediatrics both with 3. Regarding access to health through plans, most of them enjoy private access (78.7%), and only 14.9% have reported having already needed medical care for the medium or long term. Students' satisfaction with the medical course, and with their own performance in the undergraduate course, both received a score of 8 with higher frequency (44.7 and 29.8% of the sample, respectively). With regard to theoretical knowledge, it is seen that: 97.9% of students answered they know some scale for pain assessment; as well as 80.9% of participants reported knowing the World Health Organization's "analgesic ladder" for pain handling; 97.9% stated they know the difference between nociceptive pain and neuropathic pain; 74.5% are aware of the antidepressants action mechanism in pain handling. On the other hand, the problem of clinical practice stands out: 78.7% of students report insecurity in the analgesia handling of cancer patients; 76.6% do not know which drug and dose to start opioid treatment; 87.2% do not know the equivalents for rotating opioids; 76.6% do not feel confident about prescribing opioids. Objective questions were applied with a "yes" or "no" response to evaluate the knowledge of medical students about pain and palliative care (Table 1).

**Table 1.** Medical students' knowledge and perceptions of pain and palliative care

Questions	Yes (%)	No (%)
Do you believe that during graduation you received enough information to handle the pain patients?	23.4	76.6
Is there a specific discipline of pain in your college?	19.1	80.9
Do you believe that during graduation you received enough information about the care of terminally ill patients?	10.6	89.4
Do you know the World Health Organization's definition of palliative care?	53.2	46.8
Do you know the difference between nociceptive and neuropathic pain?	97.9	2.1

Continue...

**Table 1.** Medical students' knowledge and perceptions of pain and palliative care – continuation

Questions	Yes (%)	No (%)
Do you know any scale for pain assessment?	97.9	2.1
If you answered yes to the previous question, do you always use scales to evaluate patients with pain?	40.4	59.6
Do you believe that during graduation you received enough information about controlling the most common symptoms (dyspnea, vomiting, constipation, and cachexia) in patients under palliative care?	19.1	80.9
Did you learn during undergraduate communication tools and medical posture to “give bad news” to patients and family members?	40.4	59.6
Do you think it is necessary to improve your knowledge in the treatment of patients with pain?	100	0
Do you know the World Health Organization's “ladder” for pain handling?	80.9	19.1
If you treat an oncology patient with pain, would you feel safe to start analgesia handling?	21.3	78.7
Do you know which drug and dose to start an opioid treatment?	23.4	76.6
Do you know the equivalences for rotating opioids?	12.8	87.2
With regard to the opioids handling, do you feel confident about prescribing them?	23.4	76.6
Is the respiratory depression your major fear of prescribing opioids?	51.1	48.9
Is chemical dependency your major fear of prescribing opioids?	34	66
Do you know the antidepressants action mechanism in pain handling?	74.5	25.5
Do you know the anticonvulsants' action mechanism in pain handling?	42.6	57.4

## DISCUSSION

Pain is a problem with great impact on public health, since its prevalence is high, becoming the main complaint in 40% of the primary care services<sup>20</sup>. Similarly, a substantial part of primary health care involves patients with chronic pain<sup>21</sup>. In hospitalized patients, the pain prevalence is also high, possibly because the analgesics use is inadequate, which testifies the patient's lack of health care<sup>22</sup> and the tendency of health professionals to underestimate and neglecting the pain felt by the patients<sup>23</sup>. Thus, as a function of pain, hospitalized patients report a significant worsening of their functionality and greater suffering. There are data in the literature indicating pain's handling strategies need to be reviewed with the necessary criticism<sup>24</sup>. In view of the patient pain handling's lack of adequacy, it is necessary to look for significant knowledge deficits about principles currently accepted in the practice of pain handling, as well as beliefs that may interfere with the correct care of the patient's needs<sup>25</sup>.

From this study results, it was possible to observe that the majority of the students reported not receiving enough information during the undergraduate course in relation to the correct handling of patients with pain (76.6%), being that all these students (100%) pointed out the need to improve their knowledge in the treatment of people with pain. Compared to a study conducted using the same questionnaire in the State of São Paulo, response rates for such questions were similar (58 and 97%, respectively)<sup>19</sup>. Thus, it is possible to infer the existence of a gap in the pain's teaching in medical schools nationwide; however, more studies would be necessary to confirm this hypothesis.

Along the same lines, there are international studies that point out similar deficiencies in medical schools<sup>9</sup>. Study results with medical students who graduated from five Finnish

medical schools in 2001 show those definitions of pain, research on pain as well as aspects of pediatric and geriatric patients with pain were insufficiently taught. Only 34% of the students had access to in-depth studies on the subject, and only 15% had access to research projects in pain medicine. Besides, the lack of teaching about the concept of a multidisciplinary pain clinic was recognized by almost all students<sup>26</sup>. In another study, which reviewed the education of 368 licensed physicians in Michigan, it was shown that 30% did not report formal education on pain handling<sup>12</sup>.

With regard to palliative care specifically, the results observed in the present study showed that students perceive the lack of theoretical knowledge about the subject, since they did not receive enough information about the care of patients in terminal situation (89.4%) or about control of most common symptoms (dyspnea, vomiting, constipation, cachexia) in patients undergoing palliative care (80.9%). These results are similar to those of a study conducted at the Alpert School of Medicine in the United States, where it was shown that fewer than a half of students had worked with terminally ill patients, and almost a quarter of medical students did not feel prepared for common symptoms' palliation including pain, nausea, shortness of breath and anxiety<sup>27</sup>. Thus, the study by Hermes and Lamarca<sup>8</sup> confirmed the need to reformulate the curriculum of medical schools, due to the lack of disciplines involving palliative care.

Regarding pain, a characteristic observed from this study is that many students have reported difficulty in handling patients who require analgesia, despite claiming to have theoretical knowledge on the subject. In this sense, Leila et al.<sup>28</sup> pointed out that when developing a pain education curriculum, the focus should be on pedagogical methods about how to help students apply the knowledge learned in their daily practice.

A study by Upshur, Luckmann, and Savageau<sup>21</sup> found dissatisfaction with medical education on pain, and the need for emphasis on patient-centered approaches to treatment, including skills to assess the risk of opioid abuse and dependence. Accordingly, Lebovits et al.<sup>25</sup> highlighted the unjustified fear of dependency as a misunderstood concept that needs to be revised. In this study, it was observed that 51.1% of students are more apprehensive about prescribing opioids for respiratory depression, and 34% are more afraid of chemical dependence. Therefore, it is clear that the need to demystify the use of opioids in medical schools persists.

Participated in this study only students from the UFCSPA medical course, and there is no specific discipline on pain in the undergraduate medical curriculum of this university. Despite this, 19.1% of the students answered affirmatively when asked about the existence of a specific discipline about pain in their college. In order to explain this result, it may be thought that these students have considered, in such response, the existence of the Anesthesiology discipline in the fourth graduation year or of optional disciplines on pain, which eventually are offered by the University.

## CONCLUSION

It is important to emphasize the relevance of the discussion about pain education and palliative care in medical graduation since this implies the quality of health care delivery and that the present study results point to gaps in the teaching of these topics. It was also highlighted the students' difficulties in transposing theoretical knowledge into professional practice, such as insecurity in the pain handling, especially in the opioids use, are demonstrated.

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