



## RESEARCH

# Perception of medical students about the termination of life

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**Abstract**

The advancement of medicine has improved the treatment of diseases, modifying the population's morbidity and mortality pattern, with an increase in chronic diseases. This phenomenon made it urgent to properly interpret the termination of life. Considering this need, this cross-sectional, descriptive and analytical study analyzed data regarding the perceptions of 111 students from the sixth year of the medical school about end-of-life palliative care. Data were collected between August and November 2016 through a questionnaire and analyzed by statistical tests using the Iramuteq software. 37.3% of students reported difficulty communicating a patient's death to their family; 60% of them felt unprepared or had doubts regarding how to deal with death in the emergency department; 25% of students reported not knowing the term Euthanasia; 53%, Orthothanasia; and, 56%, Dysthanasia. Results show that there are still gaps in the knowledge of medical students making evident the need for medical schools to reinforce educational practices regarding death.

**Keywords:** Perception. Students, medical. Hospice care.

**Resumo****Percepção de formandos de medicina sobre a terminalidade da vida**

O avanço da medicina aprimorou o tratamento de enfermidades, modificando o padrão de morbimortalidade da população, com aumento de doenças crônicas. Esse fenômeno tornou urgente interpretar adequadamente a terminalidade da vida. Considerando essa necessidade, este estudo, de corte transversal, descritivo e analítico, analisou dados sobre a percepção de 111 estudantes do sexto ano de medicina acerca dos cuidados paliativos no fim da vida. Os dados foram coletados entre agosto e novembro de 2016, por meio de questionário e analisados por testes estatísticos com o programa Iramuteq. 37,3% dos estudantes relataram dificuldade em comunicar a morte do paciente à família; 60% sentem-se despreparados ou com dúvidas sobre como lidar com óbitos em serviço de urgência; 25% desconheciam o termo "eutanásia", 53% "ortotanásia", e 56% "distanásia". Os resultados mostram que ainda há lacunas no conhecimento desses estudantes, explicitando a necessidade de que escolas médicas reforcem práticas pedagógicas sobre a morte.

**Palavras-chave:** Percepção. Estudantes de medicina. Cuidados paliativos na terminalidade da vida.

**Resumen****Percepción de estudiantes de Medicina sobre la terminalidad de la vida**

El avance de la medicina mejoró el tratamiento de enfermedades, modificando el patrón de morbimortalidad de la población, con un aumento de enfermedades crónicas. Este fenómeno tornó urgente interpretar adecuadamente la terminalidad de la vida. Considerando esta necesidad, este estudio, de corte transversal, descriptivo y analítico, analizó datos sobre la percepción de 111 estudiantes de sexto año de medicina acerca de los cuidados paliativos en el final de la vida. Los datos fueron recogidos entre agosto y noviembre de 2016, por medio de un cuestionario, y fueron analizados con pruebas estadísticas y con el programa Iramuteq. El 37.3% de los estudiantes informó dificultad para comunicar la muerte de un paciente a su familia, el 60% no se siente preparado o con dudas respecto de cómo lidiar con las muertes en el servicio de urgencia, el 25% desconocía el término "eutanásia", el 53%, "ortotanásia", y el 56%, "distanásia". Los resultados muestran que aún existen lagunas en el conocimiento de estos estudiantes, explicitando la necesidad de que las facultades de medicina refuercen prácticas pedagógicas sobre la muerte.

**Palabras clave:** Percepción. Estudiantes de medicina. Cuidados paliativos al final de la vida.

Declararam não haver conflito de interesse.

## Contextualization

The control of disease-causing factors and the technological advancement of medicine, which started to slow the evolution of diseases in different age groups (children, adolescents and adults of reproductive age), changed the population's morbidity and mortality patterns, with the chronicity of pathologies being essential for this change<sup>1</sup>. With this, Brazil has been accompanying the rest of the world in increasing the longevity of individuals<sup>2</sup>. Nationally, the elderly is the segment with the largest increase in population, with growth rates estimated at over 4% per year during the period from 2012 to 2022<sup>1,3</sup>.

This drastic change in demographic patterns is one of the most important structural changes observed in Brazilian society. The decline in overall population growth and changes in age structure have led to a slower increase in the number of children and adolescents, while the elderly population continues to grow<sup>4</sup>.

## Terminality of life

In the current scenario, there is a need to understand the terminality of life<sup>5,6</sup>, a process resulting from the exhaustion of efforts to restore the health of the infirm, which brings about the imminent, inexorable and predicted death<sup>7</sup>, considered as the absolute interruption of existence<sup>8</sup>. This understanding is fundamental, especially since, in current times, invasive technology and methods have not only increased longevity but also slowed the death process and prolonged life, although without ensuring quality of life<sup>9,10</sup>.

It is precisely this illusion of longevity in patients without any chance of cure or maintenance of minimal quality of life and comfort that defines futile treatment, which characterizes dysthanasia, a source of distress especially for patients and their families<sup>11,12</sup>. Death then becomes an extremely lonely event, since the individual, needing medical and hospital care, is removed from family life and separated from interpersonal relationships<sup>9</sup>. In addition, dysthanasia is associated with the use of resources that could benefit other patients whose diseases can still be extinguished<sup>9,13,14</sup>.

Approaches to maintaining life at all costs are insufficient, exaggerated, unnecessary and ignore patients' suffering. Sometimes patients are kept alive thanks to treatments that cause more pain than relief

and comfort. However, these observations are not intended to condemn technological medicine, but rather to stimulate reflection regarding the course of action to be taken in the face of inexorable human mortality. It is essential to maintain the balance between scientific knowledge and humanism, restoring the dignity of life and the quality of death<sup>15</sup>.

Contrary to therapeutic obstinacy – which keeps patients alive but in pain and suffering – “euthanasia”, is the act (active) or omission (passive) that causes or accelerates the death of the debilitated individual<sup>9,13,16</sup>. There is also “orthothanasia”, which advocates death at the right time, not postponing it with disproportionate and illogical treatment<sup>9,13,17</sup> nor advancing it for any reason<sup>11,18</sup>. This concept is related to palliative care, which consists of zealous actions towards the person with an advanced and incurable disease, in a situation of physical and/or mental suffering. Palliative care is an attempt to overcome the current predominance of futile treatment and, to be put into practice, professionals need to be aware that the patient must be the principal character in the care process<sup>13,15,19</sup>.

Palliative care promotes quality of life for terminally ill patients and their relatives, relieving patients' suffering from diagnosis to death, assessing not only physical, but also psychosocial and spiritual problems<sup>15</sup>. This care is based on palliative medicine, which was recently recognized as an area of medical practice in Brazil<sup>20</sup>.

## Law and bioethics

The historically known hippocratic concept was based on the principles of pain relief, reduction of pathology harmfulness, and renunciation of treatment when medicine is no longer able to contribute to the reversal of the condition<sup>13</sup>. True to these principles, in 1967, the Hospice movement was born and St. Christopher's Hospice was founded in London thanks to the commitment of Cicely Mary Saunders. The movement is considered a pioneer in end-of-life care<sup>20</sup>.

In Brazil, in 2010, the Código de Ética Médica (CEM) (Code of Medical Ethics) reinforced the exercise of orthothanasia, providing in chapter I item XXII that, *in irreversible and terminal clinical situations, physicians will avoid performing unnecessary diagnostic and therapeutic procedures and will provide patients under their care all appropriate palliative care*<sup>21</sup>. And the new CEM, which came into force in 2019, reproduces the same reasoning<sup>22</sup>.

However, there is no standardization regarding this practice in Brazilian law<sup>13</sup>. To curb dysthanasia, the Conselho Federal de Medicina (CFM) (Brazilian Federal Council of Medicine)<sup>23</sup> launched Resolution 1,995/2012, establishing the “advance directives”, which express the will of the patient regarding end-of-life diagnostic or therapeutic procedures, guiding the physicians’ conduct with respect to patient autonomy<sup>24</sup>.

The 2010 CEM<sup>25</sup>, as well as the 2019 CEM, in article 41, prohibits physicians from *abbreviating the patients’ life, even at their, or their legal representatives’ request*<sup>26</sup>. Therefore, euthanasia is still considered a crime in Brazil<sup>17,27</sup>. In this context, there are discussions in several countries: the procedure has been legalized, for example, in Belgium and the Netherlands since 2002<sup>28-30</sup>, in Luxembourg since 2009 and in two USA states, Oregon since 1997 and Washington since 2009<sup>28</sup>.

Examining these discussions, the confrontation of moral, religious, cultural and political values arising from diversity is verified. Different perspectives impact on the illusory and distorted characterization of technological medicine as an infallible, inevitable and indisputable process destined to prevent death and bring quality of life to human beings. The illusion that science holds the answers to all problems makes end-of-life ethical decisions more sensitive and controversial, with innumerable questions and ethical dilemmas<sup>31,32</sup>.

### Medical education and curriculum guidelines

Not long ago, medical education did not advocate empathy in the face of suffering nor the humanization of medicine<sup>33</sup>. To a large extent, this perspective was due to the great advance of technologies, which allowed the artificial prolongation of human life, almost indefinitely, besides the emergence of superspecialists, whose therapeutic focus was restricted to the disease, not to the patient. Treating an individual with terminal illness and imminent death was not part of the physicians’ training, which created a sensation of failure<sup>34</sup>.

In contemporary medical education, the importance of “attitude”, the affective ability taught and learned to relate with patients and society, was understood. According to Medeiros and collaborators<sup>33</sup>, in order to prevent medicine from being limited to technicalism, the Diretrizes Curriculares Nacionais (DCN) (National Curriculum Guidelines) of the undergraduate course

were modified, raising the concern regarding biopsychosocial aspects in the search to unite knowledge from different fields<sup>33</sup>. With these changes, and once physicians base their conduct on humanistic values and medical ethics, it is impossible to view the future of the profession with skepticism<sup>35</sup>.

The previous teaching model did not adequately address the finitude of life, leading to health professionals’ concerning unpreparedness<sup>36</sup>. However, nowadays there is an awareness that it is essential to prepare students to deal with suffering and death, considering the inexorable trajectory of human beings, which every physician faces in daily practice.

Medical students and residents should be familiar with the concepts and principles of medical ethics in view of the finitude of life, as topics such as euthanasia, dysthanasia, terminality and the legalization of euthanasia are central to the reflection of health professionals in work groups, ethics committees and public debates<sup>5</sup>. Several countries such as Poland<sup>5,6</sup>, Pakistan<sup>37</sup>, United States<sup>38</sup>, Turkey<sup>39</sup>, Mexico<sup>40</sup>, England and Belgium<sup>41</sup> have been advancing in this regard and discussing the issue with health students.

According to Siqueira<sup>42</sup>, universities previously subjected students to specialized knowledge systems and technologies, restricting the learning of medical and communication skills. This focus reduced the ability to take informative medical histories and detailed physical examinations, favoring the uncritical – and sometimes unnecessary – use of the vast stream of information produced by equipment.

In Brazil, it is urgent to address these issues in order to adapt the competencies and skills of physicians to the National Curriculum Guidelines for the undergraduate course, which recommends that: *professionals should perform their services within the highest quality standards and the principles of ethics/bioethics*<sup>43</sup>. The reason for this curriculum change is to provide effective training with generalist, humanist, critical and thoughtful education, making graduates capable of solving problems characteristic of modern society<sup>14</sup>.

Thus, it is vitally important to describe and evaluate the perception of medical students about aspects related to the terminality of life, in order to understand how the topic has been debated and to analyze how future physicians can deal with this broad, controversial subject, which is dependent on social, economic, legal, religious and cultural factors.

## Method

### Outline

This is a cross-sectional, descriptive and analytical study, conducted through a previously structured questionnaire, applied to 111 students completing the sixth year of medical school in two institutions from the state of Pará, Brazil: one private, Centro Universitário do Estado Pará – (CESUPA) (Pará University Center) (n=40), and another public, the Universidade do Estado do Pará – (UEPA) (State University of Pará) (n=71). The data collection period was from August to November 2016.

### Data collection

Data were obtained through a questionnaire divided into two parts, of which the first was based on two protocols. The first protocol, of the Likert type, is entitled “instrument for assessing the attitudes of medical students towards relevant medical practice issues”. Already validated, the scale was created and used in 2002, at the Ribeirão Preto Medical School from the University of São Paulo, by Colares and collaborators<sup>44</sup>. The instrument has 52 items; however, for this study, only five items concerning aspects of the finitude of life were used.

The second protocol used nine questions from a research conducted in 2011, in the municipality of Bauru, in the state of São Paulo, Brazil, by Oliveira and collaborators<sup>45</sup>, which assessed the position of physicians regarding the humanization of health care and palliative care for terminal patients. For the analysis of this first block from the questionnaire, the chi-square and Wilcoxon tests were performed using the BioEstat 5 program.

The second part of the form contained the question: “What do you understand about euthanasia, dysthanasia and orthothanasia?” The students’ answers were inserted in the Iramuteq software, which generated word cloud representations of the data based on the occurrence of isolated words. The importance of each word was shown by the font size or color. This type of representation of lexical analysis was chosen because it is intuitive, simple and graphically interesting, allowing the rapid identification of keywords in a *corpus*.

### Ethical aspects

Students agreed to participate in the study after clarification regarding its objectives and the

signing of the informed consent form, as determined by the Brazilian National Health Council in Resolution 466/12. The research, accepted by the UEPA Ethics Committee, was funded by the authors themselves and there is no conflict of interest. The project was carried out to obtain a master’s degree in Teaching of Health in the Amazon Region from the State University of Pará.

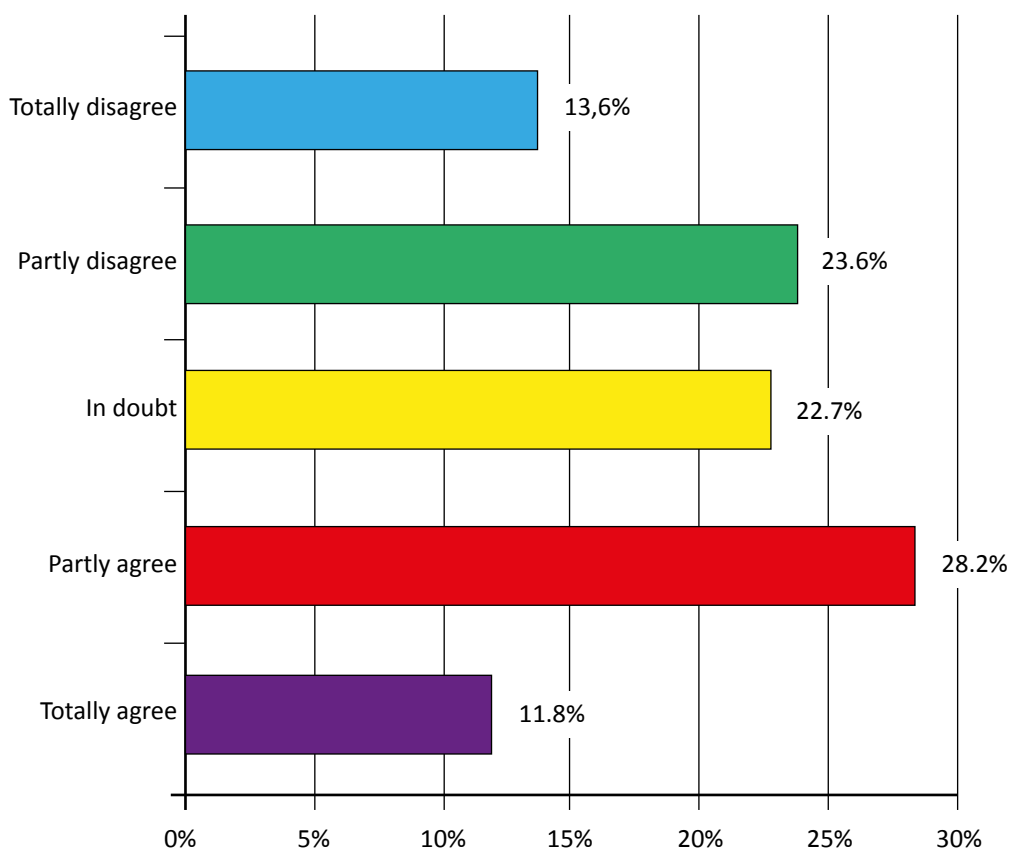
## Results and discussion

The survey questioned 111 sixth-year medical students about their attitudes toward medical practices related to the terminality of life. Regarding the news of the death, more than one third of the participants reported difficulty communicating it to the patients’ families (Figure 1), which may reveal students’ inability. In a 2011 study that used the same attitude scale<sup>35</sup>, the rates are even higher, with 70% of students showing that they were unprepared to convey the bad news.

This inability is associated with the negativity, fear and taboo that surrounds death, which turn it into something undesirable and a subject to be avoided<sup>46,47</sup>. Duarte, Almeida and Popim<sup>46</sup>, in a 2015 qualitative study with fourth and sixth year medical students, found that rejection of the topic was dominant in the responses. In the students’ opinion, the topic is little discussed during the course, and, besides knowledge, the learning of skills related to relationships and affection is also necessary.

Regarding the feeling of unpreparedness when experiencing death in emergency services, about 60% of the sixth-year students felt unprepared or had doubts about how to cope ( $p=0.3594$ ). The percentage is quite significant considering that students are at the end of their course. Thus, it is worth asking: how will these future physicians face bioethical aspects? According to Dias<sup>48</sup>, emergency services have a unique dynamic and a critical and disorderly nature, given the scenario of first doctor-patient contact without a pre-established bond.

When asked if they feel very disturbed when they witness the death of a young patient, most final year students said they are totally in agreement with the statement ( $p < 0.0001$ ). In the study by Andrade and collaborators<sup>35</sup>, about 70% of the students also mentioned discomfort. The death of a young person is considered unacceptable because it suggests failure and brings out the common view that finitude cannot be part of youth.

**Figure 1.** Distribution of responses to the item “I feel prepared to report the patient’s death to the family”

$p=0.0298^1$  (Chi-square of adherence)

Students’ positioning regarding humanization in health care and palliative care was also researched. Most responded that they “would adopt emotional support for terminally ill patients” (97.3%); “would talk to the terminally ill patient about the disease” (98.2%); “would clarify for terminal patients how long they would live” (65.8%); “would inform patients about the true diagnosis, in case of terminal illness” (98.2%); “agree that palliative care increases patients’ quality of life” (93.7%); and “would adopt palliative care with their patients” (97.3%) (Table 1). These answers reveal progress in teaching competencies regarding the doctor-patient relationship, especially concerning the terminality of life, even if there are obstacles, since the subject has been widely discussed by society in general, even outside the academic environment.

The data corroborate the research by Oliveira and collaborators<sup>45</sup>, in which almost all respondents said that they provide emotional support to patients (90%) and talk about the

pathology, informing those in the terminal phase of the actual diagnosis (70%). Regarding palliative care, Barclay and collaborators<sup>49</sup> verified 2015 the knowledge of such care by medical students; and Moraes and Kairalla<sup>50</sup>, in a 2010 article, identified that graduating students are aware of the importance of palliative treatment, even without facing this experience during their academic life, which is confirmed by the present work.

Regarding the items “agree that open discussion about life and death issues does not harm patients in this situation and that they actually like this candor”, “would use devices to extend the life of their patients” and “think advanced technologies become a complicating factor in the humane treatment of terminally ill patients”, students responded in a variety of ways, suggesting uncertainty. This is because advances and success in the treatment of pathologies have turned medicine entirely to healing, prolonging life and, supposedly, eliminating the possibility of death<sup>51</sup>.

**Table 1.** Student positioning regarding the humanization of health care and palliative care for terminally ill patients

Positioning	Answers						p*
	Yes			No			
	n	%	IC	n	%	IC	
1. Would it provide emotional support for terminally ill patients?	108	97,3	92,4-99,1	3	2,7	0,9-7,7	<0,0001
2. Would you talk to a terminal patient about the disease?	109	98,2	93,7-99,5	2	1,8	0,5-6,3	<0,0001
3. Would you clarify for terminal patients how long they will live?	73	65,8	56,5-73,9	38	34,2	26,1-43,5	0,0013
4. In cases of terminal illness, would you inform patients about the true diagnosis?	109	98,2	93,7-99,5	2	1,8	0,5-6,3	<0,0001
5. Do you agree that open discussion about life and death issues does not harm patients in this situation and that they actually like this candor?	66	59,5	50,2-68,1	45	40,5	31,9-49,8	0,0577
6. Would you use devices to extend the life of your patients?	62	56,9	47,5-65,8	47	43,1	34,2-52,5	0,1799
7. Do you think advanced technologies become a complicating factor in the humane treatment of terminally ill patients?	46	41,4	32,7-50,7	65	58,6	49,3-67,3	0,0875
8. Do you agree that palliative care increases patients' quality of life?	104	93,7	87,6-96,9	7	6,3	3,1-12,5	<0,0001
9. Would you adopt palliative care with your patients?	108	97,3	92,4-99,1	3	2,7	0,9-7,7	<0,0001

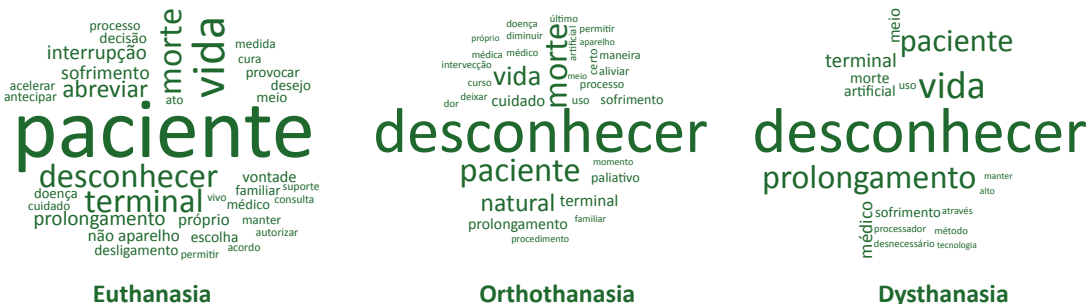
\* Chi-square of adherence; n = 111; <sup>a</sup>n = 109 (only 109 students answered this item)

Another question students answered was: “what do you understand about euthanasia, dysthanasia and orthothanasia?”. Of the 111 students, 25% reported not knowing the term “euthanasia”, 53% “orthothanasia” and 56% “dysthanasia”. Moreover, 23% of students were unaware of the three terms. For Junges and collaborators<sup>52</sup>, the differences between these concepts are often overlooked, making it difficult to understand and to create an opinion about them. In 2008 in Sudan, Ahmed and Kheir<sup>53</sup> also found that 87.9% of students were unfamiliar with the definition of euthanasia. In contrast, in the study by Leppert and collaborators, carried out in Poland in 2013<sup>5</sup>, 79.59% of the students demonstrated understanding of the concept. These differences demonstrate how the focus of training influences the way terminality is perceived and understood in different societies.

The word cloud (Figure 2) created from the participants' response to euthanasia confirms a study by Felix and collaborators<sup>27</sup>, which verified that the term is little known, although the conduct it denotes is widely practiced. In another study, conducted in São Paulo, medical students also showed ignorance of the concept<sup>54</sup>.

The words most related to euthanasia were “patient” and “life”, followed by “death”, “not knowing” and “terminal”. It can be inferred that the greater occurrence of the first terms is dichotomous, since, etymologically, “euthanasia” means “good death”. In relation to orthothanasia, the expression “not knowing” was prevalent, followed by “patient”, “death”, “natural” and “life”. The concept is precisely defined by natural death, the so-called “dignified death”, when there is no possibility of cure<sup>11,27</sup>.

**Figure 2.** Word cloud generated by the Iramuteq program



## Final considerations

In the present study, more than a third of sixth-year medical students reported difficulty communicating death to the patient's family, about 60% feel unprepared or have doubts about how to act in the event of death in an emergency room, and most say they feel "very disturbed when they witness the death of a young patient."

Despite these failures in education, most students state that they would follow and practice procedures related to the humanization of the doctor-patient relationship: 97.3% would provide emotional support to terminally ill patients; 98.2% would talk to the infirm about the disease; 65.8% would reveal the life expectancy of the individual; 98.2% would report the true diagnosis in case of a terminal state; 93.7% agree that palliative care improves the quality of life; and 97.3% would apply this care in their medical practice. On the other hand, the students prove to be proponents of therapeutic

obstinacy, or "dysthanasia", by agreeing that they would use devices to prolong their patients' lives (56.9%). In the items regarding technology and discussions about living and dying, the answers were varied, suggesting uncertainty and a lack of determination about the topic. Finally, regarding the open question, alarming data were observed regarding the lack of knowledge of the terms "euthanasia", "dysthanasia" and "orthothanasia", which highlights the need to better address these concepts in medical courses.

Therefore, it is clear that there are gaps in medical undergraduates' knowledge regarding the termination of life. It is necessary that medical schools adopt methods and educational practices that deal with the topic in depth, as professionals must be prepared to deal with the demographic tendency of an aging population. Along with these changes that affect graduation, it is also worth highlighting the importance of public policies to adapt to the new context.

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#### Participation of the authors

Tanise Nazaré Maia Costa collected the data and wrote the manuscript. Ismari Perini Furlaneto performed the statistical analysis, and Milena Coelho Fernandes Caldato supervised the research and critical review.


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