# RESEARCH

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# **analysis of medical students' education** Manuela Torrado Truiti<sup>1\*</sup>, Carla Corradi Perini<sup>1</sup> and Úrsula Bueno do Prado Guirro<sup>2</sup>

Palliative care competencies: a bioethical

Abstract

**Background** With technological advancements, health education has predominantly focused on technical aspects, neglecting human values. Palliative care (PC), seeking holistic care, becomes crucial in this context, and for its development, the World Health Organization has defined its education and teaching as one of the essential pillars. PC emphasizes patient dignity, autonomy, and holistic well-being, reflecting Thomasma and Pellegrino's beneficence-intrust model, fostering trust and ethical care. The aim of this research was to analyze, through the bioethics perspective, the acquisition of PC competencies among medical students.

**Methods** This cross-sectional, quantitative study assessed 360 medical students from a public university in Paraná, using the Pallicomp tool questionnaire to evaluate PC competencies. Data were analyzed using statistical methods, comparing scores across academic cycles and prior PC coursework. Findings were interpreted through bioethical principles and Pellegrino and Thomasma's beneficence-in-trust model.

**Results** Basic cycle students presented a higher overall score than those in the internship, with statistical difference, and the individual analysis of competencies did not reveal an increase throughout the course. When considering the overall score between students who took PC courses and those who did not, there was no statistically significant difference. Deficiencies were observed in key areas involving bioethical principles, including symptom management, compassionate communication, spirituality, and interdisciplinary teamwork.

**Conclusions** This study revealed gaps in PC education among medical students, with scores below 70% across academic cycles and a decline from basic to internship levels. The findings highlight deficiencies in holistic, patient-centered competencies, including psychological and spiritual care, interdisciplinary teamwork, and communication. Addressing these gaps requires integrating bioethical principles and practical training throughout medical education to foster ethical, humanized, and comprehensive care, aligning with the beneficence-in-trust model.

Clinical trial number Not applicable.

Keywords Bioethics, Palliative care, Education, Competencies

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# Background

Along with technological advances, the formation of health professionals is increasingly aimed towards technique alone, fragmenting itself, often leaving aside the concern for human values or the humanities. The emphasis on technical knowledge has often come at the expense of a more humanistic and compassionate education. Consequently, professionals tend to specialize in specific segments of the body, overlooking a holistic understanding of the patient as a whole [1, 2]. Faced with this, Palliative Care (PC) and its teaching become essential, as it encompasses holistic care, which aims to promote dignity, autonomy as well as comfort (physical, psychological, spiritual and social) to people with life-threatening illnesses, considering their personal values, also extending to both their family members and caregivers [3–5].

The practice of palliative care (PC) recognizes and upholds the patient as an individual with fundamental rights, including the right to make decisions about their care, maintain dignity and privacy, access information, receive specialized care, control over who is present during their final moments, bid farewell, and die free from unnecessary suffering. This approach aligns with core principles such as autonomy, dignity, privacy, and respect for human rights, which are pivotal in the provision of PC and foundational to the field of bioethics [6]. In this context, the beneficence-in-trust model proposed by Pellegrino and Thomasma [7], enriches the ethical framework of PC by emphasizing the need to respect the patient's autonomy and dignity while acknowledging their vulnerability in the face of scientific and technological advances in medicine. This model assigns the physician an active and fundamental role in prioritizing the patient's well-being as a whole person, fostering a relationship of mutual trust and respect. It further underscores the importance of both physician and patient acting autonomously in the decision-making process, with a commitment to ethical principles and respect for individual values. Notably, it asserts that the existence of an effective treatment alone does not suffice for an action to be deemed beneficent [8].

In light of this, bioethics offers a pluralistic perspective through its principles and virtues, enabling reflection on the best courses of action for the patient. This perspective is particularly relevant in addressing traditional paternalistic practices in medicine [1]. PC requires a nuanced and comprehensive understanding of illness [3], recognizing that human life has a natural end. Ethical deliberation is essential to avoid prioritizing life preservation at all costs and to focus instead on measures that enhance quality of life within the limits of what is possible and available. Unfortunately, healthcare professionals often resort to futile and disproportionate interventions due to lack of awareness, fear (defensive medicine), or insufficient knowledge [9]. Therefore, an integrated bioethical approach in PC seeks to ensure that fundamental ethical principles guide care practices, promoting dignity, respect, and quality of life for patients facing incurable illnesses.

The World Health Organization (WHO) has defined education and teaching on the subject as one of the essential pillars for the expansion of PC [6]. One of the main barriers to its access and development lies in the fact that health professionals have little to no knowledge of PC principles and practices [3]. Therefore, it is crucial to train such professionals with appropriate competencies through an educational approach that encompasses technical, cultural and ethical aspects, all of which are still extremely scarce in Brazil, as PC remains absent from most health courses' curricula [8].

A recent study revealed that of the 315 active medical schools in Brazil, only 14% had PC in their curriculum and of these, only 61% mandatory. When present in the curriculum, CP training takes place in the clinical cycle (3rd and 4th years), with an average workload of 46.9 h, and is predominantly theoretical [9].

As well as providing the opportunity to teach CP, it is important to assess the acquisition of competencies. Competence is understood as the set of specific knowledge, skills and attitudes that a professional needs to acquire in order to perform a role. Understanding the acquisition of competencies enables educators and students to identify gaps in their course pedagogical projects and problems in teaching, making it possible to plan teaching activities and other academic experiences that are appropriate for the students' training [10, 11].

An already validated tool for assessing the acquisition of PC competencies among medical students is Pallicomp [12], based on the ten PC competencies proposed by the European Palliative Care Association (EAPC) [13]. These are: (1) carry out the core constituents of PC, in the appropriate and safest environment for patients and families; (2) increase physical comfort during the patients' illness journey; (3) meet the psychological demands of patients; (4) meet the social needs of patients; (5) meet the spiritual demands of patients; (6) meet the needs of caregivers and family in relation to short-, medium- and long-term care goals; (7) respond to the challenges of clinical and ethical decision-making; (8) carry out comprehensive care coordination and joint interdisciplinary work in all the contexts in which PC is offered; (9) improve interpersonal and communication skills appropriate to PC; (10) foster self-knowledge and professional development on an ongoing basis.

Therefore, the aim of this study was to analyze, from a bioethical perspective, the acquisition of PC competencies among students of a medical course.

## Methods

This is a descriptive, cross-sectional study with a quantitative approach, approved by the Research Ethics Committee of the Pontifical Catholic University of Paraná. All 360 students aged 18 or over enrolled on the medical course at a public university in the west of Paraná were invited to take part in the study. This university did not offer the course at the time of the research but offered it as an elective until 2021. Data collection took place in August 2023 and student participation was voluntary, individual and anonymous.

The students received guidance on the risks and benefits and those who agreed to take part signed an informed consent form. Without access to consultation materials, the students answered the Pallicomp instrument [12] in printed form and provided demographic information. Participation time was up to 20 min.

The Pallicomp survey instrument [12] used consists of 25 statements based on the PC competencies of EAPC, correct and incorrect, and the answers are arranged on a five-point Likert scale ("totally agree", "agree", "neither agree nor disagree", "disagree" and "totally disagree") by the participant. Each item was corrected and scored according to the methodology proposed by Guirro et al., the authors of Pallicomp, which ranges on a scale from 0 to 1 [12]. The data was entered into a digital spreadsheet, checked and submitted to a statistical study using the R *software* (R Core Team, 2022) version 4.2.1.

The data depicting the sample of participants were described by absolute and relative frequencies, mean and standard deviation and then compared using the Kruskal-Wallis and Fisher's exact tests. The scores acquired according to the three academic cycles in Brazil - basic cycle (from 1st to 4th semester), clinical cycle (from 5th to 8th semester) and internship (from 9th to 12th semester) - were compared using the Kruskal-Wallis test. The scores were also compared according to whether they had taken the CP discipline, using the Mann-Whitney test. Finally, after the statistical analysis, the results obtained with the application of Pallicomp [12] were subjectively interpreted and discussed based on principles of bioethics [14] and Pellegrino and Thomasma's model of beneficence-in-trust [7].

This model establishes that physicians must promote the four components of the patient's well-being to uphold the principle of beneficence: the ultimate good- what constitutes the patient's ultimate standard or life choices that hold the greatest meaning for them; the good of the patient as a human being capable of informed decisionmaking- reflecting their freedom to make choices; the good as respect for the patient's best interests- related to the patient's subjective perception of the quality of life that an intervention may provide, within their current life circumstances; and the biomedical good- what can be achieved through medical interventions for a particular disease state, as expressed by medical indications. These four components of patient' good are presented in descending order of importance. Each level should be understood and respected; however, in cases of conflict, this hierarchical order must guide the decision-making process in patient care [7].

In summary, the theories converge on the promotion of holistic, person-centered care that upholds dignity through respect for the principles of beneficence and autonomy.

# Results

256 students took part in the study (71.1% of those enrolled), 29% from the basic cycle, 41% from the clinical cycle and 30% from the internship, with an average age of  $24.4 \pm 3.6$  years. Only 16% of the participants reported having taken CP during their undergraduate studies, as an optional subject. The demographic data characterizing the sample are shown in Table 1.

The participants' performance, measured by scores, is represented in Figs. 1 and 2.

As ilustrated in Fig. 1, the overall score of the basic cycle students was higher than that of the internship

	Sample <i>n</i> = 256	Basic cycle n = 74	Clinical cycle n = 106	Internship <i>n</i> = 76	<i>p</i> -value
Sexn (%)					
Female	154 (60.1)	50 (67.5%)	61 (57.5%)	43 (56.5%)	0.39*
Male	101 (39.5%)	24 (32.5%)	44 (41.5%)	33 (43.5%)	
Other	1 (0.4%)	0	1 (1%)	0	
Age					
$Mean \pm SD$	$24.4 \pm 3.6$	22.6±3.28	24.21±2.76	$26.32 \pm 3.95$	< 0.001#
Took a CP course					
Yes	40 (16%)	0	15 (14%)	25 (33%)	< 0.001*
No	216 (84%)	74 (100%)	91 (86%)	51 (67%)	

SD: standard deviation; PC: palliative care; #: Kruskal-Wallis; \*: Fisher's Exact

Source: the author, 2023



**Fig. 1** Participants' performance, grouped by competencies and overall score with median values Kruskal-Wallis test, the numbers shown are the medians; \*: presence of a relevant statistical difference; a: difference between basic and clinical cycles; b: difference between basic cycle and internship; c: difference between clinical cycle and internship. Competence 1 = apply the core constituents of PC in the proper and safest environment for patients and families; competence 2 = increase physical comfort during patients' illness trajectories; competence 3 = meet patients' psychological needs; competence 4 = meet patients' social needs; competence 5 = meet patients' spiritual needs; competence 6 = respond to the needs of family caregivers in relation to short-, medium- and long-term care objectives; competence 7 = respond to the challenges of clinical and ethical decision-making in PC; competence 8 = implement comprehensive care coordination and interdisciplinary teamwork in all contexts in which PC is offered; competence 9 = develop appropriate interpersonal and communication skills. Source: the author, 2023

students, with a statistically significant difference. When analyzing the competencies individually, there was no increase in any of them throughout the course. There was a drop in the score for competencies 5, 6 and 8, with a statistically significant difference, when comparing the basic cycle and the internship, and for competence 5 when comparing the basic cycle with the clinical cycle.

Furthermore, when analyzing the overall score between students who took and did not take the CP discipline,

there was no statistically relevant difference, as can be seen in Fig. 2.

Despite the critical role of PC in addressing the needs of patients with incurable illnesses, deficiencies were observed in key areas involving bioethical principles, including symptom management, compassionate communication, spirituality, and interdisciplinary teamwork. These aspects are essential for the patient's good, that is, to safeguard their dignity and promote their general well-being.



**Fig. 2** Participants' performance, grouped by whether they had taken a CP course. Mann-Whitney test, the numbers shown are the medians. No: did not take the discipline; Yes: took the discipline; \*: presence of a statistically significant difference. Competence 1 = apply the core constituents of PC in the proper and safest environment for patients and families; competence 2 = increase physical comfort during patients' illness trajectories; competence 3 = meet patients' psychological needs; competence 4 = meet patients' social needs; competence 5 = meet patients' spiritual needs; competence 6 = respond to the needs of family caregivers in relation to short-, medium- and long-term care objectives; competence 7 = respond to the challenges of clinical and ethical decision-making in PC; competence 8 = implement comprehensive care coordination and interdisciplinary teamwork in all contexts in which PC is offered; competence 9 = develop appropriate interpersonal and communication skills. Source: the author, 2023.

# Discussion

Healthcare technology has contributed to extending the lifespan of people with diseases that have no prospect of cure, which raises bioethical issues that are major challenges in the lives of patients and their families. In this scenario, it is crucial to emphasize the importance of preparing professionals adequately, based on bioethical principles, to meet this new demand, respecting the integrity, dignity and uniqueness of each individual, and seeking humanization and comprehensiveness of care, a major focus of PC [6].

The role of teaching is to offer the possibility of training capable individuals, equipped with technical knowledge, the ability to perform specific tasks and a mindset al.igned with professional responsibilities. Within the context of PC, competencies are defined as the combination of knowledge, skills and attitudes that professionals must acquire to provide comprehensive patient care. In addition, these competencies can be assessed and then improved through training and development [1, 11, 13].

The undergraduate medical course at the university evaluated did not offer a discipline at the time of the research. The few students who took the discipline were from the clinical and internship cycle and had taken it in previous semesters, as an elective, until 2021. However, the teaching of basic concepts of PC does not only take place in a formal subject but may also take place in practical experiences in primary care and in the teaching of clinical or surgical specialties. Thus, whether there is a specific CP subject does not completely justify the student performance [14].

Contrary to what was expected in relation to the student's progress as they went through the teaching semesters, the overall acquisition of PC skills did not increase between the academic cycles. A similar result was found by Guirro et al. (2023), who assessed 706 medical students, also using the Pallicomp. In contrast, in the present study, there was a reduction in the overall score when comparing the basic cycle with the internship. This fact is worrying, as the students in the internship will soon become doctors. Thus, at some point, they will be responsible for patients with incurable diseases, which will bring moral and ethical conflicts. Identifying the needs of these patients requires attitudes, skills and knowledge that enable correct decision-making in relation to what brings suffering to the patient and their family [15].

Since the incurability of the disease is something undesirable, often a source of suffering and treated as a synonym for finitude, it is essential that the professional acts in the direction of comprehensive care, aiming for the patient's good. It is important to emphasize that this concept of patient's good [7] is not limited to biomedical well-being (which primarily focuses on the physical dimension) but must encompass all dimensions of the human being, their values and desires. Just having the theoretical knowledge about its indications and practical knowledge about which medications to prescribe to alleviate a particular symptom, for example, is not enough. The professional must have the ability to combine all this knowledge and, more importantly, the attitude to deal with this circumstance.

Perhaps there is still a perception of PC as a form of renunciation or a secondary approach, rather than recognizing them as effective active interventions to alleviate human suffering, and this must be combated during the students' medical undergraduate experience. It is important that they learn to center the care on the patient, rejecting conduct based on obstinacy and therapeutic futility, to guarantee a future professional practice that is more proportional to the needs of the sick person.

Therefore, acquiring PC skills is an effective strategy for dealing with dysthanasia, which seeks to prolong life without the prospect of a cure, making the process of illness or death more painful and violating people's dignity. This approach not only benefits the quality of life of the sick person, but also meets the emotional and ethical needs of their families [2, 16]. These PC competencies are directly correlated with the three most important levels of patient's good: ultimate good, good as freedom of choice and good as the patient's best interests [7].

Addressed in competence 2, physical well-being is fundamental to the quality of life of individuals facing serious illness with limited life expectancy, as well as for their families, and is the basis of medical practice. The last two levels of patient well-being in the Pellegrino and Thomasma model [7] can guide an individualized care plan that should incorporate the prediction, analysis, treatment and constant review of the burden of physical symptoms throughout the course of the illness [13]. This competence involves managing symptoms such as dyspnea, pain and the prescription of opioid medications, and is thus the physician's most primary assignment in medicine as a whole and in PC. Unfortunately, it was one of the competences with the worst performance among the students. Although it was expected that students in the internship cycle would have a higher score, as they have practical contact with patients in the hospital environment, there was no statistical difference between the cycles. This possibly represents a gap in teaching, as shown by Sousa et al. [17], who assessed the knowledge of 180 medical students from the 9th semester about pain in PC and found that the majority, during their undergraduate studies, did not receive enough information to deal with drug treatment of pain. Furthermore, this may also reflect the prejudice against the use of opioids, which is still present among health professionals [18].

However, in the search for the dignity of the individual undergoing PC, as important as physical comfort is meeting psychological, social and spiritual needs, represented by competencies 3, 4 and 5. These competencies often correlate directly with the patient's ultimate good. Again, there was no increase in scores over the cycles in this study and, unfortunately, in relation to spirituality, there was a drop in the acquisition of this competence when comparing the basic cycle with the clinical cycle and internship. When faced with the suffering and fragility of life, it is common for patients to share spiritual concerns [19]. According to a study by McClain et al. [20], having spiritual well-being seems to contribute to a reduction in feelings of despair and depression at the end of life, less inclination to seek a hasty death, suicidal thoughts and a sense of hopelessness when facing a terminal illness, also resulting in an improvement in quality of life.

In addition, all professionals caring for people with incurable diseases must be sensitive and discerning about their psychological and social needs. If they don't have the ability to assess psychological or psychiatric symptoms, they must at least have the necessary competence to recognize the patient's emotional need, help them in the coping process and the attitude to refer them to appropriate psychological care, according to their personal wishes. Discussing these issues makes it possible to understand the patient's perception of what gives meaning to their life, their values, that is, their ultimate good. After all, taking all human factors into account is essential to having dignity until the last moment. As well as social needs, because a limiting illness impacts not only on a person's physical health, but also on their relationships, finances and professional future. Leaving these aspects aside, or in the background, can bring a sense of abandonment to the patient, negatively impacting respect for beneficence, expressed by the negative perception of their quality of life [13, 21].

An interesting study carried out at the University of Toronto, which compared medical students from the first to the fourth year, showed a drop in ethical sensitivity, i.e. the ability to perceive that a moral issue exists in clinical situations involving the principles of autonomy, beneficence and justice [22]. One hypothesis raised is that the strenuous workload and the fragmentation of medicine into subspecialties, in which teaching and experience focus mainly on the biological dimension, may have a negative influence on students, who come to see the patient as a biological entity, rather than as a multidimensional human being. This further emphasizes the importance of proper experience and teaching of PC and bioethics during undergraduate studies.

In addition, it was hoped that, by having contact with real clinical cases and witnessing the suffering of patients and their families in practice, internship students would develop empathy and perform better in socio-emotional competencies. The results of our study point to the possibility of students developing detachment as a way of protecting themselves from moral distress. This is generated by the conflict between the student's personal, moral and social values and principles, and the expectations, norms and behaviors prevalent in the environments in which they are exposed during their undergraduate studies, as well as the feeling of powerlessness or insecurity due to the perception of a low hierarchical level in a team. This not only has negative consequences for the student's well-being but can also have a negative impact on patient care. Therefore, it is essential that this is identified and mitigated during the undergraduate course, through educational interventions such as multidisciplinary group ethical discussions based on cases, reflective writing, mentoring with professionals who help in the process of dealing with moral distress, reflection groups as a form of personal training, in safe environments and longitudinally throughout the course [23–25].

Issues related to ethical decision-making, such as respect for patient autonomy, were discussed in competence 7 and there was no increase in the score over the cycles. This is alarming, as guaranteeing the dignity of the human person is based on the premise of respecting their autonomous decisions [26]. This corresponds to the second level of patient good in the Pellegrino and Thomasma trust-based beneficence model [7]. Through the principialist bioethical prism, which is based on the principles of autonomy, beneficence, non-maleficence and justice, students can learn to ponder the patient's wishes and values, the benefits and risks of therapies, the prevention of harm and the fair distribution of resources [27]. A solid understanding of these principles is very important in order to provide compassionate and ethical care to patients undergoing PC, respecting their choices and providing comfort in their most fragile moments. Therefore, investing in the ethical training of medical students is essential to ensure that these patients receive quality care, with respect for human life and death, based on therapeutic proportionality and dignity. Furthermore, if we understand competence as having several dimensions, morals and ethics must be part of the structural axis of medical education. It is necessary to discuss and immerse oneself in bioethical issues, highlighting a process of reflection that goes beyond theoretical discussions and takes into account attitudes in practical activities [28].

Competence 9 was the one the students performed worst on. This refers to the ability to develop interpersonal relationships with patients through communication skills appropriate to PC. Communication is the basis for an ethical relationship between professional and patient, which requires dialogue for shared decisions [7]. So, this result is very worrying, as compassionate communication is what should underpin the doctor-patient relationship. In the context of PC, it is extremely important to have the ability to communicate clearly, sincerely, respectfully and compassionately, because the patient's experience is directly related to understanding the processes of illness and the suffering related to it [29]. Thus, after evaluating this competence, the need to improve communication during undergraduate studies becomes evident, since communication transcends the mere transmission of information; it is a process that encompasses individuals and has the purpose of sharing data, promoting mutual understanding, offering support and facing complex challenges [30], always with the patient at its center.

Despite having an experiential component, communication skills in PC require technique, and therefore its effective teaching requires various approaches, such as theoretical programs in the curriculum, stimulating critical thinking, practical learning in internships, training simulations, providing feedback, post-experience analysis sessions and contact with good professionals who serve as role models [31].

One point worth highlighting is competence 8, regarding the importance of interdisciplinary teamwork. Since PC demands are not limited to medicine alone, it is essential that students acquire the skills to work with other professionals, such as nurses, psychologists and others, to build a comprehensive care plan for the patient. In this study, students in the basic cycle had a higher score than those in the internship, demonstrating a probable deformation of this concept throughout college and reinforcing that there is still a great need to build this competence in undergraduate courses.

Cooperation between professionals from different areas promotes the creation of an environment of care that is guided by ethics and puts the patient at the center, enabling more effective integration of the principles of bioethics. This is thanks to the ease with which information and points of view can be shared, which improves ethical decision-making, with an emphasis on patient autonomy and the aim of promoting their well-being without causing harm.

Another point that drew attention was in relation to competence 6, which concerns the ability to respond to the needs of family members in relation to patient care. Students in the basic cycle obtained a higher score than those in the internship, suggesting that the experience throughout the course makes students lose the important concept that comprehensive care must include the patient's family. This is a way of avoiding conflicts that can cause suffering and harm the dignity of those involved [32].

With regard to promoting self-knowledge and professional development, competency 10, this was the one the students performed best in. And this was observed in practice, as most of the students, after completing and handing in the questionnaire, actively asked for their templates to study the mistakes they had made. This also highlights the importance of measuring competencies, as described by Scallon (2015), because it helps students to identify their strengths and weaknesses, develop a sense of self-knowledge and responsibility for their own learning. After all, turning an unconscious incompetence into a conscious one is the first step towards acquiring competencies [33].

Finally, observing that there was no statistical difference between the overall score of the students who took the optional CP course and those who didn't, makes it clear that just a few hours of theoretical course are not enough to guarantee a competent student, since acquiring skills goes far beyond theoretical knowledge. Beyond just adding subjects to a curriculum, medical education has the purpose of molding individuals into competent medical professionals. Although many essential skills for providing PC are an intrinsic part of basic medical education, the subjective capacity for humanization is closely related to interpersonal interaction [1, 10, 11].

With regard to the limitations of this study, we would highlight the challenge of measuring competencies. Although the Pallicomp survey instrument was developed on the basis of the EAPC CP competencies [9], it is a tool that mainly assesses the student's knowledge of the topics. The assessment of skills and attitudes is more complex and extra approaches may be needed. Another point is the fact that some Pallicomp statements, although grouped under a particular competence, can cover concepts from other competencies, which can generate a certain confusion bias. This is the third application of the Pallicomp research instrument, which is a tool in the process of evolution and improvement.

# Conclusions

In this study, the evaluation of competencies in palliative care (PC) among medical students revealed concerning results. Students across all three academic cycles achieved an overall score below 70%, a threshold commonly regarded as the minimum passing grade by most educational institutions. Notably, there was a decline in scores from the basic cycle to the internship, with no observed improvement in any competency across the three cycles. These findings underscore a significant gap in the training of medical students regarding PC, with potential consequences for the quality of care provided to future patients.

This gap appears to be influenced not only by an outdated educational model but also by a clinical care framework that fails to prioritize a holistic approach to the human being, perpetuating a vicious cycle. The observation that students in the basic cycle performed better overall than those in the internship suggests that the current educational focus on the biological dimension may undermine essential concepts and attitudes necessary for more humanized and holistic care. From a bioethical perspective, this highlights the need to reorient medical education toward practices that respect and uphold patient dignity.

The scarcity of PC courses in medical school curricula is evident and represents part of the problem, as the development of competencies in PC requires both technical expertise and ethical grounding. However, merely introducing PC as a mandatory subject does not appear sufficient to address this issue. In this study, students who attended a PC course did not perform better than those who did not. This emphasizes that theoretical knowledge alone is inadequate; the development of PC competencies necessitates the integration of skills and attitudes conducive to holistic patient care.

To achieve this, bioethical principles must be incorporated into clinical and surgical disciplines throughout medical training. This approach should aim to foster not only technical expertise but also ethical, humanized, and patient-centered medical practice. Furthermore, the development of PC competencies should be encouraged through practical simulations, theoretical programs, group dynamics, and supervised interactions with qualified professionals. Dedicated opportunities for ethical discussions, reflection, and mentorship are also crucial for fostering these skills.

The low performance of students in essential competencies required to promote beneficence, dignity, and patient autonomy—key principles of the beneficencein-trust model proposed by Pellegrino and Thomasma [7]—raises important concerns. Competencies such as addressing psychological and spiritual needs, coordinating interdisciplinary care, and effective communication are critical for providing comprehensive patient-centered care. These findings highlight the urgent need to reconsider the current care model and develop an educational framework that prioritizes psychosocial needs alongside disease management.

## Abbreviations

PC	Palliative care
WHO	World Health Organization
EAPC	European Association of Palliative Care
Pallicomp	Palliative Competence Tool

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#### Author contributions

MT developed the work's conceptual framework, obtaining ethical and institutional approvals, collected and interpreted the data, and drafted the article. CP assisted in the development of the work, data interpretation, and reviewed the article. UG developed the research instrument used in the work, assisted in development, data interpretation, and reviewed the article.

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#### Data availability

Demographic questionnaire data and Pallicomp responses are in the following spreadsheet available via Google Drive: https://docs.google.com/spreadsheet s/d/11D-9rAET3gcS35w4y6l-sN\_VmK-coODJ/edit?usp=sharing&ouid=105176 331686266285789&rtpof=true&sd=true. Or via https://figshare.com/s/dba2e6 0e5cefa537319f.

# Declarations

### Ethics approval and consent to participate

Ethical approval for the study was provided by the Research Ethics Committee of the Pontifical Catholic University of Paraná, No. 6.226.875 (CAAE 71542023.8.0000.0020).

#### **Consent for publication**

Consent was obtained from all participants through an informed consent form before applying the research instrument.

#### **Competing interests**

The authors declare no competing interests.

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