Knowledge and self-efficiency in palliative care: are brazilian medicine students prepared for it?

Conhecimento e autoeficácia em cuidados paliativos: os estudantes brasileiros de medicina estão preparados?
Conocimiento y autoeficiencia en cuidados paliativos: ¿están preparados los estudiantes brasileños de medicina?

RESUMO

Introdução: Os cuidados paliativos (CP) são considerados parte integrante dos sistemas de cuidados da saúde e um elemento inalienável do direito dos cidadãos. Estudos têm demonstrado que médicos não recebem treinamento formal em comunicação e outros aspectos essenciais ao lidar com pacientes terminais. O objetivo desse trabalho foi avaliar o grau de conhecimento em CP de estudantes de medicina do quarto, quinto e sexto ano de uma universidade pública do Estado de São Paulo, Brasil. Os dados foram coletados na forma de questionário on-line, com preenchimento anônimo, realizado de forma totalmente voluntária. Os questionários abordavam características pessoais e suas relações com CP, bem como o "Teste Bonn sobre conhecimento em cuidados paliativos" e um questionário de autoeficácia sobre CP. O total de participantes do estudo foi de 105 alunos, sendo 71,4% do sexo feminino, com média de idade de 24,5 anos ±2,1 anos. A média total de acertos do "Teste Bonn sobre conhecimento em cuidados paliativos" foi de 66,96%, quanto ao questionário de autoeficácia a média de concordância foi de 64,75%, e todos os participantes consideram importante a incorporação de conteúdos de CP no currículo médico. Dessa maneira, conclui-se que o conhecimento dos estudantes de medicina em geral é insuficiente, mesmo com parte deles tendo curso teórico em CP durante a graduação.

DESCRITORES: Cuidados paliativos, Educação médica, Integralidade em saúde.

ABSTRACT

Introduction: Palliative care (PC) is considered an integral part of health care systems and an inalienable element of citizens' rights. Studies have shown that doctors do not receive formal training in communication and other essential aspects when dealing with terminally ill patients. Objectives: The aim was evaluate knowledge in PC of medical students in the fourth, fifth and sixth year of a public university in the State of São Paulo, Brazil. Methods: Data were collected in the form of an online questionnaire,

Data were collected in the form of an online questionnaire, with anonymous completion, carried out on a completely voluntary basis. The questionnaires addressed personal characteristics and their relationship with PC, the "Bonn Test on knowledge in palliative care" and a self-efficacy questionnaire on PC. The total number of study participants was 105 students, 71.4% female, with a mean age of 24.5 years ± 2.1 years. The total average score for the "Bonn Test on knowledge in palliative care" was 66.96%. As for the self-efficacy questionnaire, the average agreement was 64.75%, and all participants consider it important to incorporate PC content into the medical curriculum. Thus, it is concluded that the knowledge of medical students in general is insufficient, even with some of them taking a theoretical course in PC during graduation.

DESCRIPTORS: Palliative care, Medical education, Integrality in health.

RESUMEN

Introducción: Los cuidados paliativos (CP) se consideran parte integrante de los sistemas de salud y un elemento inalienable de los derechos de los ciudadanos. Los estudios han demostrado que los médicos no reciben capacitación formal en comunicación y otros aspectos esenciales para tratar con pacientes terminales. El objetivo de este estudio fue evaluar el grado de conocimiento en CP de estudiantes de medicina de cuarto, quinto y sexto año de una universidad pública del Estado de São Paulo, Brasil. Los datos se recogieron en forma de cuestionario en línea, con cumplimentación anónima, realizado de forma totalmente voluntaria. Los cuestionarios abordaron características personales y su relación con CP, el "Test de Bonn sobre conocimientos en cuidados paliativos" y un cuestionario de autoeficacia en CP. El número total de participantes del estudio fue de 105 estudiantes, 71,4% mujeres, con una edad media de 24,5 años ± 2,1 años. La puntuación media total del "Test de Bonn sobre conocimientos en cuidados paliativos" fue del 66,96%. En cuanto al cuestionario de autoeficacia, la media de acuerdo fue del 64,75%, y todos los participantes consideran importante incorporar contenidos de PC en el currículum de medicina. Por lo tanto, se concluye que el conocimiento de los estudiantes de medicina en general es insuficiente, incluso con algunos de ellos tomando un curso teórico en AP durante la graduación.

DESCRIPTORES: Cuidados paliativos, Educación médica, Integralidad en salud.

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INTRODUCTION

According to the World Health Organization (WHO), in a concept defined in 1990 and updated in 2002, "Palliative Care (PC) consists of assistance provided by a multidisciplinary team, which aims to improve the quality of life of patients and their families, life-threatening illness, through the prevention and relief of suffering, early identification, impeccable assessment and treatment of pain and other physical, social, psychological and spiritual symptoms."[1]

Palliative care (PC) is considered an integral part of health care systems and an inalienable element of citizens' rights. This care must be guided by the patient's needs, considering their values, preferences, dignity and autonomy, aiming at assistance focused on the Integrality of health. [2,3] However, what we see is the lack of investment in palliative medicine, due to the lack of information from society and the prejudice of many professionals, in addition to the lack of public policies and the absence of specific medical education. [4,5]

WHO emphasizes that active treatment and palliative care are not mutually exclusive and proposes that palliative care can be gradually increased as a component of patient care from diagnosis until death. 1 Suffering and death are natural occurrences of human life, with which every physician is frequently faced in his/her practical activity. Paradoxically, within the prevailing model of teaching and practice of medicine, due attention is not given to such issues and, thus, there is a growing lack of preparation on the part of professionals to deal with these matters, mainly contemplating the psychic and emotional unpreparedness facing the theme "death". [6,7]

Many physicians do not receive formal training in communication, follow-up, empathy and other essential aspects of dealing with terminally ill patients, emphasizing the treatment of pain and symptoms resulting from the disease, giving bad news or comforting the family, and thus they do not feel adequately prepared for this care. [8] This fact can cause a deep feeling of impotence and failure, which over time causes an affective distancing from the patient. [9]

Medical educators have noticed the growing need for education in the care of terminally ill patients, and are trying to reverse this situation. [10,11] There is evidence that deficits in education and training in palliative care have negative consequences for doctors and patients, for example, poor doctor-patient communication can affect patient and family satisfaction. [8,9,12]

It is also observed that the idea that "there is nothing to be done" for terminally ill patients is somehow ingrained in some doctors and medical students. However, we believe that a theoretical basis and clinical experience with such patients is essential in medical education, since such situations are inevitable in daily practice, in addition to student engagement with a reality that becomes increasingly normal in our daily lives.

Based on this problem, there was an interest in knowing the degree of knowledge in palliative care of medical students in their final years of graduation at a state university in the State of São Paulo, Brazil.

METHOD

This work is an observational and cross-s-sectional study that was submitted to the Research Ethics Committee of the Faculty of Medical Sciences of the State University of Campinas and filed with Plataforma Brasil (26664019.2.0000.5404- CAAE) and also approved by the Nucleus for evaluation and research in medical education (NAPEM) of the Faculty of Medical Sciences at Unicamp.

Students regularly enrolled in the medical course, from the fourth to sixth year of graduation at a state university in the State of São Paulo, were invited to participate in the study, who were randomly selected. If the student accepted to participate in the research, a link was sent through a communication application (WhatsApp®), for access to the questionnaires

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in the online format (Google Docs® platform) and the student could then respond at the most appropriate time. Three questionnaires were used for data collection: 1- addressing the personal characteristics of the participants and their relationships with PC, 2- contemplating the "Bonn Test on Knowledge in Palliative Care" (Bonn Palliative Care Knowledge Test 13), e por fim, o questionário de autoeficácia em cuidados paliativos. [13]

Statistical studies were carried out according to the nature of the variables, calculating the means, standard deviations, applying the chi-square and Student's t tests, establishing a $p < 0.05$ (5%) for rejection of the null hypothesis. When comparing the fourth and fifth year groups with the sixth year students, the unpaired and non-parametric Mann-Whitney test was used, considering different means and standard deviations for the two groups. Statistical analyzes were performed using GraphPad InStat software version 3.3.

RESULTS

The degree of knowledge in PC concepts and treatment was evaluated, as well as the perception of self-efficacy of medical students in this area. In addition, the knowledge of students in the fourth and fifth years of graduation was compared, who had a palliative care course included in the curriculum with the sixth year students who did not have it, as it had not yet been implemented in the institution's curriculum.

A total of 150 students were invited to participate in the study, involving fourth, fifth and sixth years, at random, of which 133 agreed to participate and only 105 filled out all the questionnaires correctly, therefore, this was the final number of participants. Most participants were female (71.4%), with a mean age of 24.5 years (±2.1 years), with the oldest age being 31 and the youngest 21 years. Table 1 shows the questionnaire data with personal characteristics and their relationship with PC.

As for the application of the "Bonn Test on Knowledge in Palliative Care", we had five questions with the highest number of

Table 1 – Characteristics of the participants and their relationships with palliative care

Characteristics of the participants	Data
Fourth grade students	24 (23%)
Fifth grade students	38 (36%)
Sixth grade students	43 (41%)
Male gender	30 (28,6%)
Age average	24,4 years old ±2,1 years old
Have you ever experienced the process of dying/death of close family members?	78,1% - Yes
Do you know what the definition of CP is according to WHO?	70% - Yes
Have you had experience with palliative patients?	98% - Yes
Did you have any subjects/classes in graduation that addressed the topic of palliative care?	97% - Yes
Do you consider yourself able to provide care to patients in PC?	22,8% - Yes
Do you consider it important to incorporate PC content in the medical training curriculum?	100% - Yes

Table 2 – Questions from the "Bonn Test on Knowledge in Palliative Care", the correct answers considered by the authors of the questionnaire and the percentage of correct answers from the students who participated in this study.

Questions	Test template	Hits (%)
01. PC should never be combined with curative treatments.	SC	85,7%
02. Non-steroidal anti-inflammatory drugs should NOT be used in case of regular administration of opioids.	SC	67,6%
03. The administration of subcutaneous fluids is necessary for the relief of xerostomia (dry mouth) in the person at the end of life..	SC	65,7%
04. Pain management with transdermal opioids is suitable for the person at the end of life.	SC	27,6%
05. Non-pharmacological therapies (eg physiotherapy) are important in pain management..	C	99,0%
06. For family members, it is always important to stay with the person in the last hours of life until death occurs.	SC	28,5%
07. Intestinal constipation should be accepted as a secondary effect, because pain management is more important.	SC	60,9%
08. PC requires constant emotional closeness.	SC	21,9%

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correct answers covering: communication skills can be learned (100% correct); physiological needs (sexuality) are important even in the process of dying (99.05% correct); in the face of death, visible rituals and farewell ceremonies should be avoided so as not to cause unrest (99.05 correct); non-pharmacological therapies (physiotherapy) are important in pain management (99.05% correct answers) and the use of antidepressants in pain management is not adequate (95.24% correct answers).

On the other hand, the questions with the lowest percentage of correct answers were the following: people with life-threatening illnesses should always be informed of the truth, so that they can prepare their dying process (10.48% correct answers); the final phase refers to the last 3 days of life (19.05% correct); CP requires constant emotional closeness (21.90% accuracy); pain management with transdermal opioids is adequate for the person at the end of life (27.62% of correct answers); for family members, it is always important to remain with the person in the last hours of life until death occurs (28.57% accuracy).

Table 2 presents the 23 questions of the "Bonn Test on Knowledge in Palliative Care", the correct answers considered (correct/reasonably correct - C) by the authors of the questionnaire and the percentage of correct answers of the students who participated in this study, as well as the slightly correct or incorrect answers (SC).

Regarding the self-efficacy test, the three statements that obtained the highest percentage of agreement were: creating empathy with the person undergoing PC in different life situations, family relationships, needs and intervening (95.24%); convince the multidisciplinary team about the need for PC support (78.10%) and obtain objective data that describe the pain intensity of the person in PC (74.20%). The three statements with the lowest percentage of agreement were: organizing contact with a PC service (38.09%); communicate with the patient in PC who expresses the desire to anticipate death (46.67%) and identify specific psychological problems of people in PC (54.29%). Table 3 presents the self-efficacy questionnaire and the percentage of responses in which participants agreed to be correct or reasonably correct.

09. With advancing age, people learn to deal with pain independently, as a result of various experiences.	SC	55,2%
10. The philosophy of the PC advocates that NO interventions intended to prolong life are carried out.	SC	53,3%
11. The pain threshold is lowered by anxiety or fatigue.	C	68,5%
12. People with life-threatening illnesses should always be told the truth so that they can prepare for their dying process.	SC	10,4%
13. Team members do NOT have to be believers/religious to provide spiritual care for the dying person.	C	84,7%
14. The person receiving CP must accept death.	SC	67,6%
15. Communication skills can be learned.	C	100%
16. The other patients should NOT be informed about the person's death to avoid unrest.	SC	80,9%
17. Medical treatment always has priority in PC.	SC	89,5%
18. When a person dies, visible rituals and farewell ceremonies should be avoided so as not to cause unrest.	SC	99,0%
19. The use of antidepressants in pain management is NOT appropriate.	SC	95,2%
20. Adjunctive analgesics are NOT required during opioid treatment.	SC	92,3%
21. The final phase refers to the last 3 days of life.	C	19,0%
22. The caregiver's feelings (for example, disgust) may come out during care for the person.	C	68,5%
23. Physiological needs (for example, sexuality) are important even in the dying process.	C	99,0%
Total average	Correct answers	66,96%

Correct/fairly correct-C; Slightly Correct or Incorrect-SC;

As for the results of fourth- and fifth-year students compared to sixth-year students, it was evidenced that when comparing fourth and fifth year students (total of 62 students who have already had theoretical PC classes in the curriculum) with the sixth year (43 students who did not have theoretical classes on PC during graduation) there was no significant difference in relation to personal characteristics and their relationship with PC. Comparing the questions of the "Bonn Test on Knowledge in Palliative Care", between these two groups, there were few answers that had a statistically significant difference ($p < 0.05$) and which are illustrated as shown in Table 4.

Table 5 shows the questions of the

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"Bonn Test on Knowledge in Palliative Care" with the percentage of correct answers for the two groups and the "p" value when comparing them, according to the template of the questionnaire, according to the authors of the instrument. The total correct answer average of fourth and fifth year students compared to sixth year students was 65.65% vs. 67.65%, respectively, the difference not being statistically significant, p=0.812).

Regarding the self-efficacy test, only two statements had a significant difference when comparing the two groups: 37.2% of sixth year students vs. 53.2%, from fourth and fifth years who agree to be able to communicate with patients in PC who express the desire to anticipate death (p=0.009) and organize contact with a PC service (58.1% in sixth year vs. 35.4 % fourth and fifth years, p=0.022). The other answers to the self-efficacy questions did not show a significant difference when comparing the two groups, which can be seen in Table 6.

DISCUSSION

The World Health Organization (WHO) states that it is crucial that educators and assistants in the health area include content related to palliative care in educational programs and that they are addressed systematically and not by chance.[1]

With demographic and epidemiological changes, we observe population aging

Table 3 – Palliative care self-efficacy questionnaire of participants in general who answered correct/reasonably correct (%)

Questions: I think I am capable of...	%
01. Obtain objective data that describe the intensity of the person's pain in PC.	74,20%
02. Advise people in PC on how to relieve nausea.	61,90%
03. Inform the person and their family members about PC provided by the health service.	69,52%
04. Convince the multidisciplinary team about the need for PC support.	78,10%
05. Identify and discuss real problems in the social environment of the person in PC.	70,48%
06. Organize contact with a PC service.	38,09%
07. Communicate with the anxious patient and their family members about PC in order to make them feel safe.	55,24%
08. Identify the complex needs of the person at the end of life and intervene appropriately	67,61%
09. Teach relaxation strategies to a person with PC pain	63,80%
10. Communicating with the PC patient who expresses the desire to anticipate death.	46,67%
11. Provide appropriate oral care for the person at the end of life	65,71%
12. Inform the person on PC about possible side effects of prescribed medications	63,80%
13. Identify specific psychological problems of people in PC.	54,29%
14. Integrate the cultural aspects of death and dying in end-of-life patient care.	66,67%
15. Create empathy with the person in PC in different life situations, family relationships and needs, and intervene.	95,24%
Total Average	64,75%

Table 4 - Questions of the "Bonn Test on Knowledge in Palliative Care" against the correct answers of the two groups

Questions	4th and 5th grades	6th grade	"p" value
Subcutaneous administration of fluids is necessary for the relief of xerostomia (dry mouth) in the dying person.	54,8%	81,4%	p=0,003*
With advancing age, people learn to deal with pain independently as a result of various experiences.	66,1%	39,5%	p=0,007*
Nonsteroidal anti-inflammatory drugs should not be used in case of regular opioid administration.	59,6%	78,0%	p=0,031*
When a person dies, visible rituals and farewell ceremonies should be avoided so as not to cause unrest.	93,5%	79,0%	p=0,043*

*the difference between the two groups was statistically significant (p < 0.05).

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in the world, including Brazil, which increases the demand for PC. Such care must be viewed with attention by public health, as they are central components of universal coverage and a key element of the quality of health care.[14,15] This care fits into the quaternary level of prevention, that is, prevention of unnecessary suffering among patients and family members in situations of terminal illness. The training and education of health professionals becomes one of the challenges for the implementation of PC in care, whether in health programs in primary care, in the emergency department or in intensive care units. [14]

An extensive search for a standardized questionnaire, validated and widely used

Table 5 – Questions from the "Bonn Test on Knowledge in Palliative Care" with the percentage of correct answers from the two groups and the p-value when comparing them to each other

Questions	4th and 5th grade*	6th grade*	"p" value
01. PC must never be combined with curative treatments.	88,71%	81,40%	0,315
02. Non-steroidal anti-inflammatory drugs should NOT be used in case of regular administration of opioids.	59,68%	79,07%	0,031
03. The administration of subcutaneous fluids is necessary for the relief of xerostomia (dry mouth) in the person at the end of life.	54,84%	81,40%	0,003
04. Pain management with transdermal opioids is suitable for the person at the end of life.	24,19%	32,56%	0,359
05. Non-pharmacological therapies (eg physiotherapy) are important in pain management.	98,39%	99,70%	0,801
06. For family members, it is always important to stay with the person in the last hours of life until death occurs.	24,19%	34,88%	0,247
07. Intestinal constipation should be accepted as a secondary effect, because pain management is more important.	66,13%	53,49%	0,200
08. PC requires constant emotional closeness..	19,35%	25,58%	0,461
09. With advancing age, people learn to deal with pain independently, as a result of various experiences.	66,13%	39,53%	0,007
10. The philosophy of the PC advocates that NO interventions intended to prolong life are carried out.	56,45%	48,84%	0,447
11. The pain threshold is lowered by anxiety or fatigue.	62,90%	76,74%	0,126
12. People with life-threatening illnesses should always be told the truth so that they can prepare for their dying process.	8,06%	13,95%	0,359
13. Team members do NOT have to be believers/religious to provide spiritual care for the dying person.	80,65%	90,70%	0,140
14. The person receiving PC must accept death.	67,74%	67,44%	0,974
15. Communication skills can be learned.	100%	100%	-
16. The other patients should NOT be informed about the person's death to avoid unrest.	80,65%	81,40%	0,924
17. Medical treatment always has priority in PC.	88,71%	90,70%	0,742
18. When a person dies, visible rituals and farewell ceremonies should be avoided so as not to cause unrest.	93,55%	79,07%	0,043
19. The use of antidepressants in pain management is NOT appropriate.	95,16%	95,35%	0,964
20. Adjunctive analgesics are NOT required during opioid treatment.	88,71%	97,67%	0,058
21. The final phase refers to the last 3 days of life.	16,13%	23,26%	0,378
22. The caregiver's feelings (for example, disgust) may come out during care for the person.	70,97%	65,12%	0,534
23. Physiological needs (for example, sexuality) are important even in the dying process.	98,39%	97,67%	0,801
Total average	65,65%	67,65%	0,812

*Percentage of correct answers, according to the questionnaire template, according to the authors of the instrument

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Table 6 – Comparison between the two groups in relation to the self-efficacy test against the correct and reasonably correct answer

Questions: I think I am capable of...	4th/5th grades	6th grade	"p" value
01. Obtain objective data that describe the pain intensity of the person in PC.	75,81%	72,09%	0,675
02. Advise people in PC on how to alleviate nausea.	59,68%	65,12%	0,247
03. Inform the person and their family members about the PC provided by the health service.	70,97%	67,44%	0,704
04.Convince the multidisciplinary team about the need for PC support.	75,81%	81,40%	0,493
05. Identify and discuss real problems in the social environment of the person in PC.	72,58%	67,44%	0,578
06. Organize contact with a CP service.	35,48%	58,14%	0,022
07. Communicate with the anxious patient and their family members about CP in order to make them feel safe.	62,90%	44,19%	0,060
08. Identify the complex needs of the person at the end of life and intervene accordingly.	64,62%	72,09%	0,414
09. Teach relaxation strategies to a person with PC pain	62,90%	65,12%	0,818
10. Communicating with the PC patient who expresses the desire to anticipate death.	53,23%	37,21%	0,009
11. Provide appropriate oral care for the person at the end of life	62,90%	69,77%	0,467
12. Inform the person on PC about possible side effects of prescribed medications	59,68%	70,04%	0,289
13. Identify specific psychological problems of people in CP.	58,06%	48,84%	0,158
14. Integrate the cultural aspects of death and dying in end-of-life patient care.	74,19%	60,47%	0,147
15. Create empathy with the person in PC in different life situations, family relationships and needs, and intervene.	93,55%	97,67%	0,294
Total average	65,60%	65,00%	0,907

in the literature, revealed that tools of this type were available in studies aimed more at evaluating nurses. [16-20] Studies carried out with medical students or doctors to assess knowledge in PC created their own questionnaire, with no standardization and wide use of any of them. [21-24] As our study was to assess medical students' basic knowledge of PC, we chose to use a standardized questionnaire, translated into other languages and validated in Portuguese, although it is more used in studies with nurses and health professionals in general, the "Bonn Test on Knowledge in Palliative Care", adapted to Portuguese in 2017. 13 When analyzing our results, we observed that the majority of participants (71.4%) were female, reflecting the reality of most medical schools, which mostly have more female students than male students in the medical course. Most participants (78.1%) said they had already experienced the process of dying/death of close family members and 70% said they knew the definition of PC, according to the WHO. This last question, being open, made it impossible to confirm the veracity of the student's answer.

In this institution, students have contact with patients at an early age, becoming more frequent from the fourth year of graduation, which therefore explains the percentage of participants who have had experience with palliative patients (98%). The vast majority (97%) also stated that at some point during graduation they had classes in PC, but that it is known that only the fifth and fourth year, in fact, had face-to-face and mandatory theoretical classes included in the curriculum. The sixth year may have had non-compulsory or random classes when passing through internships in which they have contact with patients in PC, for example, in the emergency room, rear of the emergency room and/or in the intensive care unit, where these cases are more common.

When asked if they considered themselves able to provide care to patients in PC, only 22.8% answered positively, according to a similar study carried out with nurses and most likely considering the complexity of family conversations, the dosage of medications, the nuances of home palliative care, the ethical and moral issues involved, among others. 25 All of the students interviewed consider it important to incorporate content on PC in the medical training curriculum, given the growing importance of this area in our country.

Regarding the "Bonn Test on Knowledge in Palliative Care", the total average of correct answers was 66.96%, similar to that found by the authors of the instrument and in identical studies. Of the five questions with the highest accuracy, only number 19 (the use of antidepressants in pain management is not adequate) and 23 (physiological needs, for example, sexuality, are important even in the process of dying) were shown to be different when

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compared with other similar works. [13,16,19] The questions with the lowest percentage of correct answers were all similar to other studies carried out with the "Bonn Test on Knowledge in Palliative Care". The same occurred when comparing the results of the self-efficacy questionnaire with the averages found in other works, both the questions with greater or lesser agreement.[13,16,19]

When analyzing some questions of the "Bonn Test on Knowledge in Palliative Care", a recent study pointed out that, unlike the authors of the original instrument, Brazilian experts considered items 8 to be correct (PC requires constant emotional closeness) and 10 (PC philosophy recommends that no interventions intended to prolong life are performed) and incorrect items 11 (the pain threshold is lowered by anxiety or fatigue) and 21 (the final phase refers to the last 3 days of life). 26 These findings are completely in line with the opinion of the authors of this study carried out with medical students, with the low rate of correct answers being evident in questions 8 and 21, mainly. Incompatibilities like these can be explained by the difference in the training of professionals and the culture in the two countries. As previously mentioned, education in PC in Brazil is scarce, addressed most of the time during professional practice and not theoretically in the curricula of undergraduate courses.

When comparing the questions of the "Bonn Test on Knowledge in Palliative Care" between the two groups (fourth and fifth years with the sixth year), only four questions out of the 23 had a significant difference, with $p < 0.05$.

And curiously, two questions were more correct for the fourth and fifth year, including: with advancing age, people have learned to deal with pain independently, as a result of various experiences (66.1% vs. 39.5%) and when a person dies, visible rituals and farewell ceremonies should be avoided so as not to cause unrest (93.5% vs. 79.0%), with p= 0.007 and p= 0.043, respectively.

And in the other two, the sixth year was the one with the highest accuracy: the administration of subcutaneous fluids is necessary to relieve xerostomia (dry mouth) in people at the end of life (81.% vs. 54.8%) and non-steroidal anti-inflammatory drugs should not be used in case of regular opioid administration (78.0% vs. 59.6%), with p= 0.003 and p= 0.031, respectively. These last two questions address the use of medication, which could justify the higher score for the sixth year, for having gone through most of the stages of the internship, and thus, having more mastery in this subject than the other group. Although the sixth year did not have the theoretical course included in its mandatory curriculum, the average of total correct answers of fourth and fifth year students compared to sixth year students did not obtain a significant difference (65.65% vs. 67.65%, respectively, p=0.357).

Regarding the self-efficacy questionnaire, only two differences were observed when comparing the two groups: the first question states that 37.2% of sixth year students vs. 53.2%, from the fourth and fifth years, agree to be able to communicate with a patient in PC who expresses the desire to anticipate death (p=0.009). This finding, although in line with what was expected by the authors, reflects the same results of the authors of the original instrument, in which the years of experience showed a negative correlation with the self-efficacy score. [16]

The other question addressed the ability to organize contact with a PC service (58.1% sixth year vs. 35.4% fourth and fifth years, p=0.022), in which the sixth year, probably because they had already gone through more practical internships, would have more knowledge of how the procedures work, even though the percentage of this ability was low. This fact probably occurred because the hospital where the research was carried out is still at the beginning of the implementation of the palliative care service.

Thus, it is evident that this study has several limitations, the main one being the lack of a validated questionnaire in Portuguese, suitable for use with medical students or physicians to assess the degree of knowledge in PC. Despite its use in several studies, it was not designed to provide a comprehensive assessment of higher levels of knowledge associated with experience in palliative care practice, in addition to presenting disagreements depending on the country where it is applied. It focuses on the primary level of information that would normally be found in introductory courses and workshops, for example.

> Second, in this study, although the participants were randomly selected, it is an uncontrolled, observational study with a small sample.

Third, this study tried to assess knowledge and self-efficacy and consequently the difficulties reported by medical students. Self-reported data may have a social desirability bias, especially with regard to the self-efficacy questionnaire.

Finally, this study was carried out in only one university, and the results found here are limited to this population, its theoretical course and its practical dynamics in the hospital, which may be different from other universities. However, our objective in carrying out this study was also to highlight the importance of having

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a minimum of theoretical and practical training in PC for undergraduate medical students. We believe that the true result of education in palliative care is observed through improvements in the quality of life of patients and their families, therefore, the better prepared the physician is to deal with such situations, the greater the chance of achieving the desired outcome.

CONCLUSION

It is concluded from the application of the questionnaire that the knowledge of medical students in general is insufficient, even with some of them taking a theoretical course in PC. There weren't many significant differences when comparing fourth and fifth grades with sixth grade. Other studies using a more appropriate questionnaire for medical students and covering a larger number of participants are needed to better assess the knowledge of PC in this population. All participants consider it important to incorporate content on PC in the medical curriculum, evidencing the concern with this subject in their training.

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