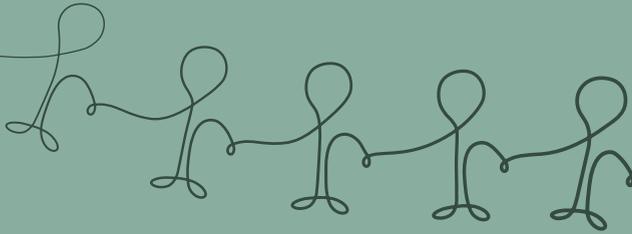


# LET'S TALK ABOUT IT

*Palliative care education in the undergraduate medical curricula*



**Jolien Pieters**



Let's talk about it:  
Palliative care education in undergraduate  
medical curricula

The research reported here was carried out at



**Maastricht University**



**Maastricht UMC+**

in the School of Health Professions Education



**School of  
Health Professions  
Education**

in the context of the research school:

**ico**

Interuniversity Center for Educational Research

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Let's talk about it:  
Palliative care education in undergraduate  
medical curricula

PROEFSCHRIFT

ter verkrijging van de graad van doctor aan de Universiteit Maastricht,  
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# CHAPTER 1

**General introduction**



## General introduction

### Need for palliative care

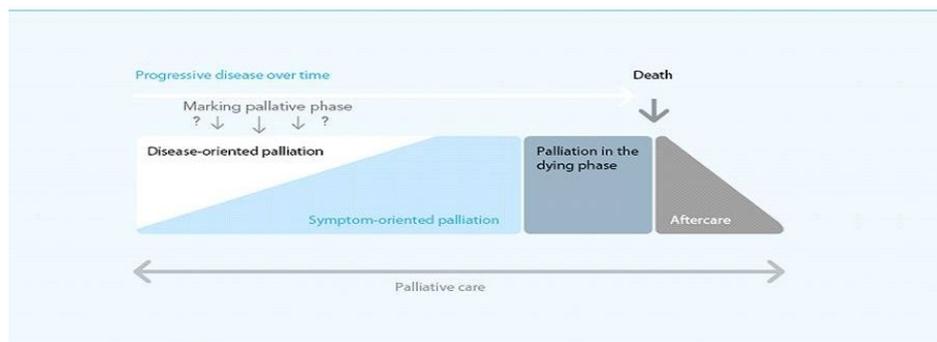
Palliative care is a basic human right of all people who suffer from a variety of life-threatening or life-limiting diseases. Each year, an estimated 56.8 million people need palliative care globally (Connor, 2020). Reports worldwide forecast that due to demographic changes, longer disease trajectories, and higher co-morbidity, the demand for palliative care is set to escalate over the next several decades (Hasson et al., 2020; Knaul et al., 2018; Sleeman et al., 2019). According to the World Health Organization (WHO), the majority of adults in need of palliative care have chronic diseases such as cardiovascular disease, cancer, Dementia, HIV/AIDS, and diabetes. Other conditions that may require palliative care include kidney failure, chronic liver disease, and external causes (Connor, 2020).

### Palliative care defined

The WHO has defined palliative care as *“an approach that improves the quality of life of patients and their families facing the problems associated with life-threatening illnesses, through the prevention and relief of suffering by means of early identification as well as the impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual (Connor, 2020).”* As such, it involves the treatment of an individual who has a serious illness for which a cure or complete reversal of the disease and its process is no longer possible (Krau, 2016). The purpose of palliative care is to assure an optimal quality of life for the patient and those involved in his or her life experience (Krau, 2016). It neither intends to hasten nor postpone death (Connor, 2020). Palliative care for patients with progressive diseases can be divided into four phases (see Figure 1.1).

In the first phase, the key focus is on disease palliation, meaning that efforts are aimed to modify disease processes (Cocquyt et al., 2017). In the second phase, palliation is largely symptom-oriented, with treatment focusing on the relief of symptoms, without directly affecting the disease. The third phase of palliation, the “dying phase,” is concerned with end-of-life care mainly aimed to comfort and alleviate suffering and to allow patients to die with dignity. Although difficult to predict, end-of-life care typically concerns individuals who are in the last six months of life. The final phase of palliative care aims to support relatives and loved ones after the patient is deceased.



**Figure 1.1** The four phases of palliative care.

Note. Adapted from “General principles of palliative care”, by A. de Graeff et al., *Nederlands Tijdschrift Oncologie* 2013;14(2):63.

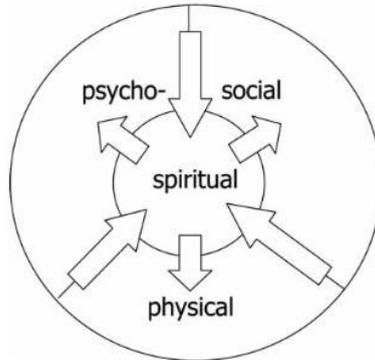
Apart from these four phases, we can also identify four distinct dimensions of palliative care, that is, a physical, psychological, social, and spiritual dimension. As depicted in Figure 1.2, these four dimensions interact with and influence each other. Consequently, the provision of palliative care is typically characterized by a holistic approach. Whereas the physical dimension represents an individual’s bodily health, the psychological dimension addresses a person’s cognitive health, including his or her mood or general emotional state (Jackson, n.d.). The social dimension, on the other hand, captures an individual’s ability to make and maintain meaningful relationships with others (Jackson, n.d.). Spirituality is defined by the European Association for Palliative Care as: *the dynamic dimension of human life that relates to the way persons (individual and community) experience, express and/or seek meaning, purpose and transcendence, and the way they connect to the moment, to self, to others, to nature, to the significant and/or the sacred* (Best et al., 2020). It includes what makes life meaningful, and what provides hope and strength. Although religion can be part of spirituality, it does not define it.

## Palliative care in the Netherlands

In the Netherlands, rather than being a distinct medical specialty as it is in many other countries, palliative care forms an integral part of regular healthcare (Brinkman-Stoppelenburg et al., 2016). Generalist care providers and institutions must be able to provide adequate palliative care whenever necessary (Cocquyt et al., 2017). Moreover, any healthcare professional should be able to deliver core elements of palliative care, such as managing basic symptoms and aligning treatment with patients’ goals (Brinkman-Stoppelenburg et al., 2016). To support them, eight centers of expertise for palliative care have been created in the university hospitals in the Netherlands. In all

Dutch regions, specialist consultation teams are available to family doctors, specialists, or nurses to answer questions about palliative care (Cocquyt et al., 2017). An increasing number of hospitals currently have a palliative team at their disposal to support care providers in caring for these patients (Cocquyt et al., 2017).

**Figure 1.2** The interaction of the four dimensions of palliative care.



*Note.* Adapted from “How spirituality is integrated system-wide in the Netherlands Palliative Care National Programme”, by J. van de Geer and C. Leget, *Progress in Palliative Care* 2013;20(2):103.

## Palliative care education

Providing palliative care is challenging due to the multidimensional aspects involved (physical, psychological, social, and spiritual). The fact that palliative care is insufficiently integrated into healthcare systems can be largely attributed to a lack of education (Centeno et al., 2017). In order to feel competent and confident in caring for palliative care patients, physicians should possess the necessary competences, irrespective of their specialty (Barclay et al., 2015). It is therefore imperative that palliative care education becomes an integral part of medical curricula at all levels of education, including undergraduate curricula. For a long time, however, attention to this topic in European medical curricula was largely fragmented or obscured (Centeno et al., 2017; Lloyd-Williams & Macleod, 2004).

Indeed, several studies have reported that undergraduate medical students receive inadequate education and training in palliative care because it is not well integrated into curricula (Billings & Block, 1997; Gibbins et al, 2011; Lloyd-Williams & Macleod, 2004). Reasons for this lack of integration are that there is minimal consensus about what to teach (Lloyd-Williams & Macleod, 2004), palliative care education is fragmented (Lloyd-Williams & Macleod, 2004), and that clinical experiences are primarily elective (Billings & Block, 1997). Previous research has established that professional healthcare workers have limited to no knowledge about the principles and

practices of palliative care (Connor, 2020) and that many newly qualified doctors across different countries lack confidence in providing palliative care (Chen et al., 2015; Eyigor, 2013; Storarri et al., 2019; Weber et al., 2011).

On a more positive note, palliative care education has recently started to receive more attention (Carrasco et al., 2015; Centeno et al., 2013). The subject is currently being taught in a large number of undergraduate medical programs at European universities (DeCoste-Lopez et al., 2015). In the UK, for instance, it has become firmly embedded in the medical curriculum (Borgstrom et al., 2016), whereas

in Germany it has been a mandatory part of the undergraduate medical curriculum since 2013 (Weber et al., 2011). Yet, the quality and quantity of palliative care education vary considerably across individual European countries (Carrasco et al., 2015; DeCoste-Lopez et al., 2015).

In the Netherlands, all medical schools must abide by the “*Raamplan*,” which is a Dutch national blueprint for undergraduate medical curricula. Subjected to a revision in 2020, the Raamplan now makes explicit mention of palliative care, specifying that a junior doctor must be able to provide such care (van de Pol et al., 2020). Notwithstanding this, Dutch undergraduate medical curricula still spend limited time on palliative care education. The few studies conducted in the Netherlands essentially focused on end-of-life-care education, showing that the latter is not sufficiently addressed in the Raamplan and that it is not a compulsory component of medical school curricula either (de Bruin et al., 2018). Undergraduate medical students, too, have voiced concerns that more attention should be paid to this third phase of palliative care (Hesseling et al., 2010). Because of this emphasis on end-of-life care, we expect other aspects of palliative care to be obscured, especially so since until recently, palliative care education was only taught in graduate programs.

## Research gaps

In summary, while the need for palliative care is increasing, medical universities have only recently started to pay attention to this topic in the undergraduate curriculum. As a result, medical students feel unprepared to provide palliative care. In order to develop proper palliative care training that caters to medical students’ perspectives and needs, we must first understand how they relate to palliative care and what exactly their learning needs are. At the moment, these perspectives are unknown and therefore need further research. Next, we must uncover the competences that according to the work field require training, how these competences can be best acquired, and how palliative care education can be integrated into the undergraduate curriculum. Once we know which subjects have been underexposed in the Dutch curricula, we can move on to develop the appropriate educational interventions.

## Research questions

The research conducted in this dissertation spans the following three phases (McKenney & Reeves, 2020) that are typical of Design-Based Research (DBR):

1. Analysis and exploration
2. Design and construction
3. Evaluation and reflection

In the first phase (*analysis and exploration*), we collaborated with our stakeholders to get a better understanding of the problems within palliative care education. To bring this into focus, we conducted a needs assessment based on medical students' perceptions and developed a competency framework based on a literature review and Delphi study with stakeholders. The second phase (*design and construction*) was devoted to collecting and inventorying existing educational materials. To address the needs identified in the first phase, we designed new educational interventions that were based on different educational principles, such as authentic learning and reflection. In the last phase (*evaluation and reflection*), we implemented and evaluated the said interventions and reflected upon their outcomes to improve both the interventions and their implementation.

To address the research gaps, we formulated the following research questions:

- What are undergraduate students' views on the importance of education in palliative care, their opinions on the education they received, and their (self-reported) confidence in and knowledge of palliative care? (DBR Phase 1 – Chapter 2)
- Which palliative-care-related competencies should, according to palliative care experts, junior doctors, experienced physicians, nurses, and educators, be addressed in undergraduate medical curricula, and at which level? (DBR Phase 1 – Chapter 3)
- How do medical students, teachers, and educational scientists evaluate a set of coherent learning tasks focusing on the spiritual dimension of palliative care? (DBR Phases 2 and 3 – Chapter 4)
- How do students and teachers evaluate the assignment in which a student communicates with a chronically ill patient about the four dimensions of care (physical, psychological, social, and spiritual), writes a report about it, gives and receives peer feedback, and reflects on it? (of DBR Phase 2 and 3 – Chapter 5)

## Setting and context

### *The Dutch medical curricula*

All the research was set in undergraduate medical education in the Netherlands, where medical schools typically last six years spanning a three-year bachelor's and a three-



year master's program. Whereas the bachelor's program is mostly concerned with teaching students the theoretical basics, the master's program focuses on the application of knowledge in practice, with students rotating through different internships. All eight medical schools in the Netherlands follow this same model, albeit subject to local variations.

### *The Pasemeco project*

The research was part of the Pasemeco project: a national project subsidized by ZonMW (no. 844001101). The overall goal of this project and dissertation was to develop and evaluate a multi- purpose toolbox offering undergraduate medical curricula an integrated palliative care program in order to prepare medical students for palliative care delivery. The toolbox needed to be filled with authentic learning materials and integrated programs that could be variously combined into meaningful learning tasks and integrated blended learning solutions. This hybrid model would allow universities to incorporate education about palliative care into their existing undergraduate medical curricula without losing their "couleur locale."

## Dissertation outline

Chapter 1 provides an overall introduction to palliative care education, by offering background information, identifying research gaps, outlining the existing research, and presenting the main concepts. The next two chapters subsequently present the needs analysis underlying this dissertation: Chapter 2 reports on a study investigating the perceptions of medical students across various universities regarding the palliative care education they received and what they found important, measuring their (self-reported) confidence and knowledge levels in the process; Chapter 3 describes the development of a theoretical framework for palliative care competencies, based on the opinion of diverse stakeholders as to what learning contents should be included in the undergraduate medical curriculum regarding palliative care.

Chapters 4 and 5 focus on the design, implementation, and evaluation of palliative care education. As such, they describe the development of educational interventions based on the outcome of the previous chapters, including their evaluation. Chapter 4 first reports on a process whereby experts described and evaluated a coherent set of learning tasks about communication and spiritual care. Chapter 5 subsequently goes on to present the development, implementation, and evaluation of an educational intervention addressing the four dimensions of care, using a DBR approach. Based on different educational principles, the respective intervention was implemented in the internships of fifth- year medical students, who, together with their teachers, evaluated the intervention. Finally, Chapter 6 provides an overall discussion of the main findings

and conclusions of this dissertation, presenting their practical implications, and proposes further research avenues.

**Table 1.1** Overview of the studies, research questions, methods, and participants.

Chapter	Research question	Methods	Participants	Setting
2	What are the undergraduate students' views on the importance of education in palliative care, their opinions on the education they received, and their (self-reported) confidence in and knowledge of palliative care?	Online questionnaire	222 final-year medical students from 4 medical schools	Students were recruited from 4 medical schools in the Netherlands
3	Which palliative-care-related competencies should, according to palliative care experts, junior doctors, experienced physicians, nurses, and educators, be addressed in undergraduate medical curricula, and at which level?	Online questionnaire	21 palliative care experts 21 physicians 13 nurses curriculum coordinators and educators junior doctors	Participants were recruited from several universities and hospitals across the Netherlands
4	How do medical students, teachers, and educational scientists evaluate a set of coherent learning tasks focusing on the spiritual dimension of palliative care?	Focus groups and semi-structured interviews	9 teachers 4 educational scientists 9 medical students	Participants were recruited from 4 medical schools in the Netherlands
5	How do students and teachers evaluate the assignment in which a student communicates with a chronically ill patient about the four dimensions of care (physical, psychological, social, and spiritual), writes a report about it, gives analysis and receives peer feedback, and reflects on it?	Questionnaires, focus groups, semi-structured interviews and document analysis	30 medical students and 3 teachers	Participants were recruited from Maastricht University, the Netherlands

## Reflexivity

### Research paradigm

My psychology education having shaped my view of science and the world, I started my Ph.D. as an exponent of the post-positive paradigm. I believed that research was objective and that it was my task to seek the truth. I quickly realized that this paradigm would not hold, particularly not in the realm of educational research. My supervisors challenged me to venture out of my comfort zone, and I realized that there are multiple ways to conduct research. As a result, I slowly but gradually came to embrace the pragmatic paradigm, which is reflected in the methods used throughout this dissertation: Design- Based Research, mixed methods, and interactions between me and other stakeholders.

## Personal interest

During my psychology training, I developed an interest in learning and education. What drew me to this Ph.D. trajectory was its focus on innovation, implementation, and evaluation. Beyond my own experience with palliative care, however, I did not know much about the topic. In the course of the Ph.D program, my passionate co-workers aroused my interest and I learned about the beauty and value, as well as the physical and emotional burden, of palliative care.

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# CHAPTER 2

## **Palliative care education in the undergraduate medical curricula: students' views on the importance of, their confidence in, and knowledge of palliative care.**

Pieters, J., Dolmans, D. H. J. M., Verstegen, D. M. L., Warmenhoven, F. C., Courtens, A. M., & Van den Beuken-van Everdingen, M. H. J. (2019). Palliative care education in the undergraduate medical curricula: students' views on the importance of, their confidence in, and knowledge of palliative care. *BMC Palliative Care*, 18(1). <https://doi.org/10.1186/s12904-019-0458-x>

## Abstract

### **Background**

The need for palliative care is increasing. Since almost every junior doctor will come across palliative care patients, it is important to include palliative care in the undergraduate curriculum. The objective of this research is to gather undergraduate students' views on palliative care in terms of its importance, their confidence in and knowledge of the domain.

### **Methods**

Final-year medical students at four Dutch medical faculties were surveyed. The questionnaire measured their views on the education they had received, their self-reported confidence in dealing with palliative care patients and their knowledge of palliative care.

### **Results**

Two hundred twenty-two medical students participated in this study. Students considered palliative care education relevant, especially training in patient-oriented care and communication with the patient. Students felt that several topics were inadequately covered in the curriculum. Overall, the students did not feel confident in providing palliative care (59.6%), especially in dealing with the spiritual aspect of palliative care (77%). The knowledge test shows that only 48% of the students answered more than half of the questions correctly.

### **Conclusion**

The students in this study are nearly junior doctors who will soon have to care for palliative patients. Although they think that palliative care is important, in their opinion the curriculum did not cover many important aspects, a perception that is also in line with their lack of confidence and knowledge in this domain. Therefore, it is important to improve palliative care education in the medical curriculum.

## Background

Due to the aging population and growing number of people with chronic diseases, such as heart failure, Chronic Obstructive Pulmonary Disease (COPD), and dementia (IKNL, 2014; Etkind et al., 2017) and the higher survival rate for diseases like cancer, the number of patients needing palliative care due to life-threatening illness is increasing. The World Health Organization (WHO) defines palliative care as ‘an approach that improves the quality of life of patients and their families who are facing problems associated with life-threatening illness through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual (WHO, 2018)’. Providing palliative care is challenging because of the multidimensional (physical, psychological, social and spiritual) and multidisciplinary aspects involved. Physicians working in nearly all specialties and many care settings regularly have to provide palliative care to the chronically and terminally ill. They should, therefore, acquire in their training the necessary attitudes, knowledge, and skills to do so (Barclay et al., 2015).

The World Health Organization (Connor & Bermedo, 2014) and the European Association for Palliative Care (Gamondi et al., 2013) (EAPC) underline the importance of palliative care education. Lack of palliative care education in the undergraduate medical curricula throughout Europe is considered as one of the most important barriers in the integration of palliative care in health care systems (Centeno et al., 2017). Several studies have reported that medical students are given inadequate education and training in palliative care (Gibbins et al., 2011; Billings & Block, 1997; Lloyd-Williams & Macleod, 2004) and many junior doctors across different countries (for example: The United States (Chen et al., 2015); Brazil (Storarri et al., 2019); Germany (Weber et al., 2011) and Turkey (Eyigor, 2013)) do not feel well prepared. The majority of medical graduates reported that they felt uncertain about providing palliative care (Weber et al., 2011). They lack knowledge of palliative care (Weber et al., 2011), especially on the pain and symptom control aspects (Weber et al., 2011). However, research shows that an integrated palliative care curriculum leads to increasing knowledge (Lehto et al., 2017), and physicians with special education in palliative medicine make less aggressive decisions in end-of-life care, as to withdraw life-prolonging therapies, indicating the importance of palliative care education (Piili et al., 2018).

Currently, in the Netherlands, undergraduate medical curricula spend little time on palliative care. An EAPC expert committee evaluated the degree to which palliative care education was covered in undergraduate medical curricula in Europe and demonstrated that the Netherlands belongs to the five European countries that scored the lowest (Carrasco et al., 2015). Dutch medical education tends to disregard the competencies required to decide whether or not to treat (Steering Committee for Appropriate End-of-Life Care, 2015). A recent study showed that End-of-Life Care education is insufficiently mentioned in the Dutch national blueprint for



undergraduate medical curricula and is not fully integrated in compulsory medical curricula at the universities (de Bruin et al., 2018). Another study (Hesselink et al., 2010) also demonstrated that, from the perception of undergraduate medical students, more attention should be paid to end-of-life care. Nevertheless, there is an increased interest in palliative care teaching (Barclay et al., 2015; Fitzpatrick et al., 2017). In order to develop palliative care training that is aligned with the perspectives and needs of undergraduate medical students, it is important to understand how medical students relate to palliative care and what their learning needs are. The perspectives of students on palliative care, as defined by the WHO, are currently unknown and need further research. The objective of this study is to investigate undergraduate students' views on the importance of education in palliative care, their opinion of the education they have received, and their (self-reported) confidence in and knowledge of palliative care.

## Methods

### Setting and participants

Dutch medical education lasts six years and consists of a three-year bachelor's program and a three-year master's program. In the bachelor's program, students learn the theoretical basics. The master's program focuses on the application of knowledge in practice. Final-year students were recruited from four of the eight medical universities in the Netherlands to answer the online questionnaire administered for this study.

### Material

The questionnaire used in this research is based on the work of Weber et al. (2011) (permission granted). The questionnaire contained three components. The knowledge part is based on the earlier validated Palliative Care Examination by Weissman et al. (2002) Cronbach's alpha coefficient was used to assess the internal consistency within the other components (Tavakol & Dennick, 2011). The other components, the students' perception of the importance of palliative care education ( $\alpha = 0.822$ ), their opinion of the education they had received ( $\alpha=0.845$ ), and confidence felt in dealing with the various aspects of palliative care ( $\alpha=0.844$ ), showed that the internal consistency between the items within the different subparts is very good (DeVilles, 2016). No items were deleted.

#### *Perceived importance and education received*

The first part of the questionnaire was based on a translation of the questionnaire by Weber et al. (2011) and was elaborated with 11 statements concerning differed aspects of palliative care added by the authors. Participants were asked to evaluate

these 11 aspects in two ways (see Table 2.1). First, they were asked to indicate how important these aspects are and second to what extent had these aspects been covered in their curriculum. The survey employed a five-point Likert scale (1=not/barely important or not/ barely covered in the curricula; 3= neutral; 5=very important or extensively covered in the curriculum). The section ended with one open question: "Did your education in palliative care miss out on anything?"

### *Self-reported confidence*

This part was also based on a translation of the questionnaire by Weber et al. (2011). Students were asked to report their confidence level with regard to ten situations in which palliative care was required (see Table 2.2). The situations covered the four dimensions (psychosocial, somatic, and spiritual) of palliative care. The degree of confidence was differentiated on a four-point Likert scale (1=very confident; 2=confident; 3=unconfident; 4=very unconfident).

### *Knowledge*

Weber et al. (2011) based this part of their questionnaire on the Palliative Care Examination by Weissman et al. (2002). Their shortened questionnaire comprised eight brief case studies with 21 multiple-choice questions (MCQs). The questions related to pain management (57%), symptoms other than pain (19%), psychosocial issues (19%) and ethics (5%). Each MCQ had five answer options, of which one was 'I don't know'. For this study, a palliative care expert (MvdB) translated and adapted the Weber et al. (2011) version to the Dutch context.

### *Procedure*

A pilot study with five sixth-year medical students was conducted. The students filled out the questionnaire to establish the comprehensibility, clarity of the questions, handling and, duration. No further changes were needed. Then the link to the online questionnaire was sent to the participants. The recruitment of students for this study differed per university. At two universities, a staff member sent the invitation email to last-year medical students. At the two other universities, the students were invited in person by the first researcher, during one of their classes. If they agreed to participate, they received the same email as the students of the first two faculties. The difference in approach is due to faculty-specific rules about conducting research.

The first page of the online questionnaire asked the students for informed consent. The questionnaire was completed anonymously and on a voluntary basis. At the end, students could voluntarily fill in their email address to participate in a lottery for five book vouchers worth €15 each. Their email addresses were not linked to the questionnaire. Non-responders received one reminder.



## Statistical data processing

SPSS 21.0 was used for the statistical analysis. To obtain descriptive results, the data were analyzed in line with Weber et al. (2011) students indicated their perceived importance and education received on a five-point scale. Mean scores per item (N=11) across all students were computed. A score below 3.0 was considered unimportant or insufficiently covered, a score of 4.0 or higher as important or sufficiently covered, and all scores in between were considered to be neutral.

For the self-reported confidence levels and the knowledge test, scores were calculated within answer categories. The scores for the self-reported confidence were calculated in percentages and coded in two categories: '(rather) confident' (score 1–2) and '(rather) nonconfident (score 3–4)'.

For the knowledge test, the scores were calculated in percentages and coded in three categories: 'correct answers', 'incorrect answers' and the 'I don't know answers'. The categories for the knowledge test were: total score, pain knowledge (questions 1-12), psychosocial knowledge (questions 13, 14, 20, and 21), knowledge about ethics (question 15), and non-pain symptom control knowledge (questions 16–19).

## Results

In total 222 (response rate 38%) final-year students from four Dutch medical universities participated. The mean age was 24.9 years (SD = 1.79) and 160 students (72.1%) were female.

### Perceived importance and education received

The participants scored the importance of education on 11 items describing different aspects of palliative care (Table 2.1). Overall, students indicated that it is important to incorporate palliative care in their education (57.7%). The scores varied between 3.40 and 4.36 (scale: 1–5). Of the 11 items, five items scored higher than 4.0 (important). The other items scored between 3.40 and 3.90 (neutral). No item scored lower than 3.0 (unimportant). Students indicated that especially 'patient-focused work with palliative care patients' (Mean=4.36, SD=0.68) and 'communication with palliative care patients and their care system' (Mean=4.34, SD=0.73) were the most important aspects to learn about. The aspects that scored lowest were 'reflecting on their own ideas about death and dying' (Mean=3.40, SD=0.97) and the 'psychosocial and spiritual needs of the patients' (Mean=3.55, SD=0.98).

One hundred students answered the open-ended question "Did your education in palliative care miss out on anything?" Overall, the respondents said that palliative care

education did not receive enough attention. Furthermore, they said that the curriculum missed out on treatment options and aspects of self-care for physicians.

The 11 statements were also scored on education received (Table 2.1). Overall, the students judged their palliative care education as inadequate (45.5%) or were neutral about it (48.9%). The scores on the palliative care education received varied between 2.31 and 3.95 (scale 1–5). Of the 11 items, six scored less than 3.0 (inadequately covered). The other items scored between 3.0 and 3.9 (Neutral). No item scored higher than 4.0 (adequately covered). The students indicated that the most of the education they received concerned ethical issues around end of life (Mean=3.95, SD=0.90) and the definition of palliative care (Mean=3.90, SD=0.72). Self-care for physicians in providing palliative care (Mean=2.31, SD=0.86), the psychosocial and spiritual needs of patients (Mean=2.57, SD=0.10) and communication with palliative care patients and their care system (Mean=2.77, SD=0.99) scored lowest (Table 2.1).

**Table 2.1** Students' views on palliative care education and perception of its importance (N students=222) (Scale 1–5; 1=Lowest Score; 5=Highest Score).

Question	Perceived importance: Education received:	
	mean (SD)	mean (SD)
Definition of palliative care	4.33 (0.64)	3.90 (0.72)
Patient-focused work with palliative care patients	4.36 (0.68)	3.35 (0.91)
Knowledge of symptom control in palliative patients	4.31(0.62)	3.10 (0.89)
Communication with palliative care patient and their care system	4.34 (0.73)	2.77 (0.99)
Psychosocial and spiritual needs of the patient	3.55 (0.98)	2.57 (0.10)
Knowing what kind of care is available for palliative patients and who plays a role in it	4.15 (0.69)	3.10 (0.48)
Can work with various healthcare providers in the care of palliative patients	3.82 (0.82)	2.85 (0.93)
Ethical issues concerned with the end of life	3.89 (0.77)	3.95 (0.90)
Grief and loss	3.75 (0.77)	2.84 (0.94)
Reflection on own ideas about death and dying	3.40 (0.97)	2.79 (1.09)
Self-care for physicians in providing palliative care	3.79 (0.83)	2.31 (0.86)

## Self-reported confidence

Of the 222 respondents, nine did not complete this self-assessment part of the questionnaire. Table 2.2 lists their answers. Overall, the students do not feel confident in providing palliative care (59.6%). They stated that they feel most confident in assessing and examining patients with cancer pain (72.8%) and in communicating with severely ill and dying patients (61.5%). They reported feeling least confident about integrating the spiritual aspects (23.0%) and psychological aspects (42.7%) of the treatment and supervision of severely ill and dying patients. Also, they do not feel confident about explaining to the patient that their disease is incurable (43.2%).

**Table 2.2** Self-reported confidence in the domains of palliative care (N students=213).

Domains (N= number of items)	Non-confident %	Confident %
Integrating the psychological aspects of treating and supervising severely ill and dying patients, I feel...	57.3	42.7
Communicating with severely ill and dying patients, I feel...	38.5	61.5
When explaining to a patient that their disease is incurable, I feel...	56.8	43.2
When explaining to a patient that their tumor-specific treatment (e.g. chemotherapy) will be changed to palliative care, I feel...	50.7	49.3
Treating and guiding terminally ill and dying patients, I feel...	38.5	60.5
Assessing and examining patients with cancer pain, I feel...	27.2	72.8
The basic principles and contents of palliative care, I feel...	43.7	56.3
Treating symptoms that might occur in advanced cancer, I feel...	54.9	45.1
Treating cancer pain, I feel...	46.5	53.5
Integrating the spiritual aspects of treating and guiding severely ill and dying patients, I feel...	77.0	23.0
Overall	59.6	40.4

## Knowledge

The last part of the questionnaire comprised 21 questions exploring the students' knowledge of palliative care. Of the 222 respondents, 154 (69.4%) filled in this part of the questionnaire. Approximately half (47.8%) answered more than half of the questions (11 or more) correctly. Between 45 and 55% of the students gave correct answers in the domains of pain knowledge, psychosocial knowledge, and non-pain symptom control knowledge, while 84% of the students gave the correct answer to the question on knowledge about ethics (Table 2.3). The question answered correctly most often was on communicating the prognosis and the question answered correctly least often was on the side effects of opioids (Appendix). Only 7% of the students gave the right answer to this question.

This study demonstrates that medical students view palliative care as an important topic to be covered in their undergraduate medical education. However, according to the surveyed students, most aspects of palliative care are not covered properly. They do not feel confident in providing palliative care and lack the necessary knowledge. These results are in line with the growing body of research showing that medical students are not adequately prepared to provide palliative care (Gibbins et al., 2011; Chen et al., 2015; Storarri et al., 2019; Weber et al., 2011). The findings of our study are in line with results reported in various countries like the United States (Chen et al., 2015) and Germany (Weber et al., 2011).

**Table 2.3** Knowledge extrapolated in relation to four topic scores (%) (N students=154).

Correct answer	Wrong answer	Unsure	N items
Pain management	44.8	33.9	12
Symptom control	45.6	34.4	4
Psychosocial	55.5	39.8	4
Ethics	83.8	16.2	1

## Discussion

Looking at the various components of the questionnaire, some results are noteworthy. First of all, the respondents indicated that communication in palliative care is one of the most important aspects to learn about, but not much attention is paid to these specific communication skills in their training program. This may explain their rather low level of confidence on communication items.

Second, the students indicate that they lack education on the psychosocial and spiritual needs of palliative care patients, which again may explain why they lack confidence in this. This is in line with the research of Best et al. (2015) and Ellis et al. (1999) who found that doctors only rarely raise spiritual aspects of care, although many patients would be interested in discussing issues around spirituality in the medical consultation. Best et al. (2016) found that the underlying confusion regarding the differences between religion and spirituality is one of the important contributors to the reluctance of doctors to discuss spirituality with patients. Medical curricula are mainly based on the bio-psycho-social model (Geer, 2017), and shifting towards a biopsychosocial-spiritual model could lead to more holistic and better patient care.

Third, students responded positively on the topic of ethics concerned with the end of life care and they indicated that ethical aspects were properly covered. This finding is further supported by the results of the knowledge test, where students scored remarkably high on the ethics question. This result is line with research of Hesselink et al. (2010) who found that medical students perceived the content and quality of end-of-life-care moderate-to-good. However, Thurn and Anneser (2019) reported that German medical students experience moral distress frequently in end-of-life care and emphasize the importance of empowering students by means of training to address their moral concerns. Differences between our findings in which ethics were more positively rated, could be explained by cultural differences or by differences in training.

Although we did not formulate a research question about the relation between the different variables, we correlated the measures to check how they relate to each other. This resulted in a positive correlation between self-confidence and knowledge ( $R=0.22$ ;  $P=0.000$ ) and between self-confidence and the degree to which relevant topics were covered in the curriculum ( $R=0.40$ ,  $P=0.006$ ); which is in line with our expectations; i.e.



a better score on knowledge is positively related to self-confidence and a higher score on topics covered during training is also positively related to self-confidence.

Several issues should be taken into account when interpreting the results of this study. This is a multi-center study and the four participating universities are spread geographically throughout the Netherlands. The demographic characteristics of the participating students are comparable to those of the population of Dutch undergraduate medical students. The questionnaire consists of three different components: (1) perceived importance, (2) degree to which a given topic is covered in the curriculum and (3) the degree to which the student feels competent/confident. Put together, the results offer a broad perspective on students' views and current learning needs.

The study also has some limitations. Just like in the study by Weber et al. (2011), the response rate was relatively low, which could imply that only motivated students responded (Cheung et al., 2017). As a consequence, the importance of palliative care education could be overrated. The questionnaire was based on an existing questionnaire in order to connect with the literature. The disadvantage was that this questionnaire pays unequal attention to the different dimensions of palliative care and focuses more on cancer than on other palliative conditions. Another limitation of the study is that only the knowledge section of the used instrument makes use of a formerly validated instrument. The other two sections and the translation of the knowledge section were not revalidated.

This study determined which aspects of palliative care are important to medical students. The results have important implications for practice and research. Universities can use these results to anticipate the learning needs of the students and improve their education programs to better prepare students for a care context in which the need for palliative care will increase due to the expanding aging population and the growing number of people with chronic diseases. Thereby, this study offers an important first step in the development of palliative care education in undergraduate medical curricula. To develop a full picture of what should be covered in the medical curricula will require additional studies with stakeholders other than students involved.

## Conclusions

This study reveals that medical students view palliative care as an important subject that should be addressed properly in their medical education, especially the aspects of patient-focused work and communication. The respondents reported limited confidence in providing palliative care. The four medical schools involved in this study address many palliative care topics to a limited extent in their curricula. The findings will be of interest to all those concerned with the development of palliative care education.

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## Appendix

**Table 2.4** Answers to 21 questions exploring knowledge (%) in responding students (N students=154).

	Correct	Wrong	Don't know
Identify somatic pain	70.8	23.4	5.8
Move to strong opioid	64.3	30.5	5.2
NSAID for bone pain	67.5	11.7	20.8
Treatment of breakthrough pain	37.0	32.5	30.5
Conversion oral to IV morphine	22.7	9.8	67.5
Time to therapeutic for fentanyl patch	27.3	38.9	33.8
Equianalgesic dose of fentanyl	19.5	13.6	66.9
Opioid nausea resolves in <7 days	35.1	58.4	6.5
Side effects opioids	6.5	89.0	4.5
Worsened pain is worsening cancer	38.3	59.8	1.9
Identify neuropathic pain	80.5	14.3	5.2
Tricyclics for AIDS pain	68.2	25.3	6.5
Family says: don't tell	87.7	9.7	2.6
Tell prognosis in cancer	29.2	68.9	1.9
Define physician assisted suicide and euthanasia	83.8	16.2	0.0
Treat dyspnea	67.5	13.0	19.5
Diagnose hypercalcemia	55.8	35.8	8.4
Treat death rattle	20.8	62.3	16.9
No IV hydration for dying patient	38.3	26.6	35.1
Pronounce death	32.5	58.4	9.1
Identify normal grief	72.7	22.1	5.2





# CHAPTER 3

## **A National, Palliative Care Competency Framework for Undergraduate Medical Curricula**

Pieters, J., Dolmans, D. H. J. M., van den Beuken-van Everdingen, M. H. J., Warmenhoven, F. C., Westen, J. H., & Verstegen, D. M. L. (2020). A National, Palliative Care Competency Framework for Undergraduate Medical Curricula. *International Journal of Environmental Research and Public Health*, 17(7) <https://doi.org/10.3390/ijerph1707239>

## Abstract

As nearly all doctors deal with patients requiring palliative care, it is imperative that palliative care education starts early. This study aimed to validate a national, palliative care competency framework for undergraduate medical curricula. We conducted a Delphi study with five groups of stakeholders (palliative care experts, physicians, nurses, curriculum coordinators, and junior doctors), inviting them to rate a competency list. The list was organized around six key competencies. For each competency, participants indicated the level to which students should have mastered the skill at the end of undergraduate training. Stability was reached after two rating rounds (N=82 round 1, N=54 round 2). The results showed high levels of agreement within and between stakeholder groups. Participants agreed that theoretical knowledge is not enough: Students must practice palliative care competencies, albeit to varying degrees. Overall, communication and personal development and well-being scored the highest: Junior doctors should be able to perform these in the workplace under close supervision. Advance care planning scored the lowest, indicating performance in a simulated setting. A wide range of stakeholders validated a palliative care competency framework for undergraduate medical curricula. This framework can be used to guide teaching about palliative care.

## Introduction

Due to an increasingly ageing population and prevalence of noncommunicable diseases, the need for palliative care is expected to grow. This requires changes in government policies, but also in the professional training and education (Chan et al., 2020). Physicians will regularly need to care for patients requiring palliative care. Providing this care can be challenging and calls for specific competencies, which can be mentally and emotionally taxing for health care professionals (Donne et al., 2019). It is therefore important that junior doctors develop the ability to guide and support the chronically and terminally ill during their medical training (Barclay et al., 2015). Several studies, however, have demonstrated that medical students do not sufficiently receive such education and training in palliative care (Billings & Block, 1997; Lloyd-Williams & Macleod, 2004; Gibbins et al., 2011). On the other hand, palliative care education has recently started to receive more attention, several education interventions are made, and the subject is now taught in a large number of undergraduate medical programmes at European universities (Carrasco et al., 2015). Yet, the level at which palliative care is taught still differs widely between individual countries (Carrasco et al., 2015; Decoste-Lopez et al., 2015). This study focused on the Netherlands as one of the European countries where palliative care (de Bruin et al., 2018), albeit marked as general care, still receives very limited attention in medical curricula. In a previous study (Pieters et al., 2019), Dutch final-year medical students reported that their curricula, indeed, did not adequately cover many of the palliative care aspects they deemed important. This finding ties in with studies from different countries showing that students lack knowledge and confidence in caring for patients requiring palliative care (Chen et al., 2015; Storarri et al., 2019; Weber et al., 2011; Eyigor, 2013).

Clearly, palliative care education should be developed and implemented in medical curricula (McMahon & Wee, 2021). What is not clear, however, is what contents the undergraduate curricula should exactly cover and what should be covered in postgraduate specialty training programmes and/or continuing professional development. The Pasemeco (Palliative care, Alliance, Sharing, Educational tools for MEditional student COmpetencies development) project focuses on integrating palliative care education into the eight Dutch medical curricula. Its project team has drafted a list of palliative care competencies based on two palliative care competency profiles that are suitable for the Dutch situation: An educational framework developed by VU University Medical Centre (2017) in the Netherlands and the European Association for Palliative Care (EAPC) competencies described in a white paper (Gamondi et al., 2013). We face-validated items within the project group, which contained different kinds of stakeholders. Whereas this educational framework describes the knowledge, skills, and attitudes regarding palliative care that a range of health care professionals should possess, the EAPC white paper describes the competencies that students should



acquire according to European guidelines. Although the two profiles provide a solid basis, they are yet to be further refined, tested, and examined by various stakeholders.

The purpose of this study was to gain insight into what is expected of medical students at the end of the undergraduate curricula when they move into the role of junior doctor. To this end, we conducted a Delphi study by offering the draft competency framework to various stakeholders for validation. In a Delphi procedure, a panel of experts rate the framework in different rounds until consensus or stability in panel members' responses is reached. This technique seemed a useful method to gather the opinions of various stakeholders with the aim to achieve consensus, especially since the same method has been used elsewhere to develop competency frameworks for palliative care education (Gamondi et al., 2013; Paes & Wee, 2008). To obtain more detailed insight, we investigated not only what contents undergraduate curricula should cover, but also with what degree of autonomy junior doctors should be able to perform palliative care tasks upon graduation. For instance, would they need to perform these in a simulated setting or in the workplace? Additionally, in the latter case, under close supervision or with a supervisor on call? We expected different stakeholders to have equally different responses to these questions. More specifically, palliative care experts could hold the view that junior doctors should be able to perform palliative care tasks in the workplace with little supervision, whereas physicians and nurses could think otherwise. In summary, this study addressed the following question: Which palliative-care-related competencies should, according to palliative care experts, junior doctors, experienced physicians, nurses, and educators, be addressed in undergraduate medical curricula, and at which level?

## Materials and methods

### Panel

The study involved sending an online questionnaire to a panel of representatives from five groups of stakeholders (Table 3.1). The first group consisted of experts in palliative care: Physicians or nurses who had received specialist palliative care training. The second and third group consisted of physicians and nurses who were not specialized in palliative care but were involved in caring for patients requiring palliative care. We expected them to have insight into the abilities of junior doctors and the demands placed on them because they were either supervising them (physicians) or collaborating closely with them (nurses). The fourth group consisted of educators and curriculum coordinators from several medical universities in the Netherlands who could share their educational view on the topic. The final group consisted of recently graduated, junior doctors. We recruited these stakeholders from the networks of the Pasemeco project team and the Expertise Centres for Palliative Care (EPZ), which are

linked to every University Medical Centre in the Netherlands, by sending them an email invitation to participate. Table 3.1 provides more details on the participants.

**Table 3.1** The five groups of participating stakeholders.

Group 1: Round 1 N=21 Round 2 N=13	Group 2: Round 1 N=21 Round 2 N=13	Group 3: Round 1 N=13 Round 2 N=9	Group 4: Round 1 N=13 Round 2 N=10	Group 5: Round 1 N=14 Round 2 N=9
Experts (physicians or nurses) in palliative care who completed specific (Dutch) post-initial palliative care courses.	Physicians with specialties other than palliative care, and were tasked with educating junior doctors	Nurses with specialties other than palliative care, and who worked closely with junior doctors.	Curriculum coordinators and educators from medical universities in the Netherlands involved in undergraduate medical curricula, with at least three years' experience in teaching.	Junior doctors who had recently graduated from medical school and were working as a junior doctor for a maximum of two years.

## Instrument

The draft competency list was organised around six key competencies reflecting the tasks that newly graduated junior doctors are expected to perform. These key competencies covered the following domains: Communication, advance care planning, pain and symptom management, working in a multidisciplinary team, end-of-life care, and personal development and well-being. Each key competency covered three to ten enabling competencies, resulting in a list totaling 46 items (comprising six key competencies and 40 enabling competencies). An enabling competency of 'communication' (key competency), for instance, was: 'Is able to communicate with respect and empathy with patients and relatives'. The panel members were asked to indicate per key and enabling competency (each item) if and to what degree the junior doctor should master this competency. More specifically, panel members were asked whether they expected junior doctors to only have theoretical knowledge of the competencies (basic or advanced), or to be able to practice them, either in a simulated setting or in the workplace (under close supervision or with a supervisor on call). With a simulated setting we mean practice outside the clinical setting in practice settings organized for education, for example, role plays, practice with simulated patients, or in a simulation center. This resulted in a six-point Likert scale, ranging from 'Not applicable: Competency is not required' to 'The newly graduated junior doctor must be able to execute this task independently in the workplace with a supervisor available on call' (see Box 3.1).



## Delphi procedure

The Delphi technique is an iterative process, intending to obtain group consensus from different stakeholders or experts. The Delphi technique uses a multistage self-completed questionnaire with individual feedback (McMillan et al., 2016). Before we sent the questionnaire to panel members, we first tested it on five participants (not panel members), which led to small changes to the scoring system. Subsequently, we approached 120 potential panel members. The first page of the online questionnaire asked for informed consent. Subsequently, panel members were invited to rate the 46 items. They were also invited to give feedback or additional information on key and enabling competencies if they felt they needed revision or to suggest additional key and enabling competencies. In the second round, panel members were presented with the same items as in the first round and were asked to rerate or confirm their original rating of each item. They were given both their previous answers and the panel's mean scores. Nonresponders received a maximum of two reminders. Data were stored on a protected drive, to which only the first researcher (JP) had access. Ethical approval was obtained from the Dutch Society for Medical Education (Nederlandse Vereniging voor Medische Onderwijs [NVMO]) Ethical Review Board (file no. 817).

## Statistical analyses

We used IBM SPSS Statistics for Windows, version 21.0 (IBM Corp., Armonk, N.Y., USA) to calculate the mean scores of each key competency and each enabling competency. Mean scores (1–6 scale) were computed across all panel members. A mean score of 4.5 or higher was rounded up to a score of 5 (a junior doctor should be able to perform this competency in the workplace under close supervision). The Delphi rounds stopped when consensus and/or stability was reached. The consensus rate was set at 75%, which was achieved when a minimum of 75% of panel members concurred that the competency belonged to one of the following categories: 'Not applicable' (a score of 1), 'theoretical' (a score of 2–3), or 'practical' (a score of 4, 5, or 6, all on a 1–6 scale). Stability was defined as no or minimal shifting of panel responses between rounds (one point or less on the Likert scale). The Kruskal–Wallis test was conducted to examine the differences in scores for the competencies (key and enabling) between the stakeholder groups.

**Box 3.1** Explanation of the six-point Likert Scale on which compete.

Level	Meaning
1.	Not applicable: a newly graduated junior doctor does not require this competency.
2.	The newly graduated junior doctor must possess the basic knowledge, skills and attitudes [professional behaviour] needed for this task.
3.	The newly graduated junior doctor must be able to integrate the knowledge, skills and attitudes [professional behaviour] needed for this task.
4.	The newly graduated junior doctor must be able to execute this task in an educational or simulated setting (under the teacher's supervision).
5.	The newly graduated junior doctor must be able to execute this task in the workplace under close supervision.
6.	The newly graduated junior doctor must be able to execute this task in the workplace independently, with a supervisor available on call.

## Results

We approached 120 potential panel members. A total of 82 panel members responded (68%) in the first round, and 54 in the second round (66% of the respondents who had participated in the first round). Stability was achieved after two rounds, meaning that none of the scores differed more than one point on the scale between the two rounds. The results showed high levels of agreement within and between stakeholder groups: All 46 competencies need to be covered in the undergraduate curriculum. With regards to the level that competencies should be addressed the panel reached consensus on 32 of the 46 competencies (70%), but could not find consensus on 14 enabling competencies. All competencies where consensus was found were categorized as practical (score of 4, 5, or 6). Panel members concurred that graduates should be able to practice these competencies either in a simulated setting or under close supervision in a real-life setting.

Table 3.2 presents the mean scores for each of the key competencies, which differed between 4.04 (standard deviation [SD]=0.89) and 4.54 (SD=1.01) on a six-point scale. Advance care planning received the lowest overall mean score (mean score=4.04, SD=0.879), meaning that the panel expected junior doctors to be able to perform this task only in a simulated setting with teacher supervision. Personal development and well-being (mean score=4.54; SD=1.02), communication (mean score=4.50; SD=0.75), and pain and symptom management (mean score=4.48; SD=0.74) scored highest, showing that at least a part of the panel expected junior doctors to be able to perform these tasks in the workplace under close supervision.



**Table 3.2** Panel members' mean ratings of the six key competencies in palliative care and their standard deviations (N panel members=54) (1–6 scale\*).

Key competency	Junior doctor is able to:	Mean	SD
Communication	Discuss the incurable illness, prognosis and death with the patient and loved ones	4.50	0.75
Advance Care planning	Organize advance care planning in regular consultation with the patient, family and the care providers involved	4.04	0.89
Pain and symptom management	Combat the suffering of palliative patients and their loved ones with consideration for all four dimensions	4.48	0.74
Working in a multidisciplinary team	Work in a multidisciplinary and interdisciplinary team of various care professionals, volunteers and caregivers	4.41	0.77
End-of-life care	Carry out the care trajectory around the patient's death together with the team of professionals, volunteers and relatives	4.20	0.92
Personal development and well-being	Ensure personal well-being and development	4.54	1.02

\* 1= Not applicable: a newly graduated junior doctor does not require this competency; 2= The newly graduated junior doctor must possess the basic knowledge, skills and attitudes [professional behaviour] needed for this task; 3 = The newly graduated junior doctor must be able to integrate the knowledge, skills and attitudes [professional behaviour] needed for this task; 4 = The newly graduated junior doctor must be able to execute this task in an educational or simulated setting (under the teacher's supervision); 5 = The newly graduated junior doctor must be able to execute this task in the workplace under close supervision; 6 = The newly graduated junior doctor must be able to execute this task in the workplace independently, with a supervisor available on call.

Table 3.3 and Table S3.1 (Supplementary Materials) provide an overview of the mean scores for each enabling competency. The enabling competencies that panel members scored especially high were 'communicates with respect and empathy with patients and loved ones' (mean score=5.02, SD=0.96), 'adapts to the different ways of communicating' (mean score=4.70, SD=1.00), 'adjusts content and communication style when communicating with the patient' (mean score=4.65, SD=0.97), 'determines the time and cause of death' (mean score=4.67, SD=1.2), and 'acts professionally with due regard to both personal and professional values and norms' (mean score=4.69, SD=1.01). On the 14 enabling competencies, where no consensus was found regarding the level of achievement, the following enabling competencies scored lowest: 'Integrates disease-oriented and symptom-focused care at an early stage' (mean score=3.38, SD=0.91) and 'arranges complementary care, if desired' (mean score=3.43, SD=1.09).

No significant differences were found between the panel member groups, except for the communication key competency (P=0.022). Curriculum coordinators scored this key competency significantly higher than experts (P=0.007) and nurses (P=0.008). There was no significant difference between the curriculum coordinators, physicians, and junior doctors.

**Table 3.3** Panel members' highest mean ratings of the enabling competencies in palliative care and their standard deviations per key competency (N panel members=54) (1–6 scale\*).

Key competency	Enabling Competency Junior doctor is able to:	Mean	SD
Communication	Communicate with respect and empathy with patients and loved ones.	5.02	0.961
	Adapt to the different ways of communicating.	4.70	1.002
Advance Care planning	Explicitly discuss the patient's wishes for the end of life (including euthanasia and treatment limitations).	4.43	0.716
	(With regard to diagnosis and treatment) take into account both the quantity and quality of life (e.g. avoids under- and over-diagnostics and weighs up diagnostic processes).	4.37	0.681
Pain and symptom management	Recognise and consider the feelings of patients and relatives and the influence these have on the well-being of those involved.	4.63	0.958
	Systematically identify the most common symptoms in the palliative phase, such as pain, congested breathing, confusion, nausea and vomiting, anxiety and itching, and treat these with and without medication.	4.26	0.894
Working in a multidisciplinary team	Take advantage of opportunities for consultation in palliative care and, to this end, consult experts within and outside the institution.	4.35	0.828
	Work in a multidisciplinary and interdisciplinary team; exhibit familiarity with the duties and responsibilities of the other health care professionals involved.	4.26	0.805
End-of-life care	Determine the time and cause of death and fill in the death certificate.	4.67	1.213
	Guide the loved ones directly in the period around the death.	4.56	0.965
Personal development and well-being	Act professionally with due regard to both personal and professional values and norms.	4.69	1.006
	Exhibit knowledge of their personal responsibility as a health care professional and the limits thereof.	4.57	0.983

## Discussion

This research has validated a competency framework for palliative care education. The panel members in this study concurred that all the proposed key and enabling competencies should be included in the undergraduate medical curricula. There was also a high level of consensus among panel members on the level of acquirement on the competencies: The panel agreed on all key and most enabling competencies that they should be attained at a practical level, i.e., in a simulated setting or in practice under close supervision.

One significant difference between the different panel member groups was found. The curriculum coordinators and educators scored significantly higher on the communication key competency than experts in palliative care and nurses. We are not sure how to explain this, but one reason might be that curriculum coordinators felt more familiar with this subject and have more attention for teaching communication,



since communication is a key domain for all area of medicine, already. Another explanation could be that curriculum coordinators find that in the communication lies the biggest educational gap. Surprisingly, we found no other differences between the different groups of panel members. We had expected, for example, that experts in palliative care would have higher expectations than the other groups.

The fact that all stakeholders agreed that junior doctors should be able to perform all key and enabling competencies on theoretical or practical level suggest that the different professions increasingly appreciate the importance of palliative care. For most competencies, participants agree on the recommended level of achievement. For some, there was no consensus on whether these should be taught only at a theoretical level or also practiced in undergraduate medical curricula.

However, implementing all this in practice will not be easy. Since teaching time and resources are limited, we foresee that it will not be feasible to incorporate all the proposed competencies into the undergraduate medical curriculum, especially if this has to happen at a practical level. Although the difference between a score of 4 and 5 may seem small, there is a large difference between teaching competencies to the level of 'execution in a simulated environment' (e.g., in a role play or with a simulated patient) or to the level of 'execution under close supervision in practice' (during internships).

Our competency framework for palliative care can serve as a basis for integrating palliative care into existing undergraduate curricula. The question of how to implement palliative care education can have different answers. While some would argue that palliative care should be introduced as an independent course, we believe that it would be better to weave it into the existing curriculum and courses, for several reasons. First, almost all doctors will deal with terminally ill patients. Most people die in generalist settings, and physicians in nearly all specialties (rather than palliative care specialists) look after these patients in their end-of-life phase (Kizawa et al., 2011). Thus, many specialties share the learning objectives of palliative care education, which, arguably, span the whole medical curriculum (Wennberg et al., 2004). Research shows that palliative care education can be a vehicle to teach the patient-centered care model in undergraduate medical education and that it can contribute to personal and professional development (Boland et al., 2019). Therefore, palliative care should be addressed in all kinds of care courses, whenever it is relevant (Noguera et al., 2019). For example, when teaching medical students about the heart, it would be logical to also familiarize them with the prospects of patients with heart failure, the potential complications and treatment options, including those aimed at quality of life in the end-of-life phase. Second, integration enhances students' learning process because learning is contextualized. Learning about palliative care in diverse contexts is expected to enhance the transfer to practice. Vertical integration throughout the curriculum allows integration of learning tasks that gradually increase in complexity (Van Merriënboer et al., 2002). Finally, there is the practical consideration that it is difficult to free up time in

the curriculum for an entirely new, independent course about palliative care. How and where competencies can be integrated in the curriculum depends on the way that the curriculum is organized, however. There is no one-size-fits-all solution.

Our competency framework for palliative care can serve as a basis for integrating palliative care into existing undergraduate curricula. A large advantage of this framework is that, unlike previous frameworks, it incorporates the views of different stakeholders and is not solely based on the opinions of experts in palliative care. Panel members were actively involved in the study. This helped create a larger support base and a network of people motivated to increase attention to palliative care in undergraduate curricula. Our framework has further refined previous insights (Carrasco et al., 2015; Decoste-Lopez et al., 2015) and asked panel members to indicate at what level students need to acquire the proposed competencies. This has led to a framework that is concrete enough to develop education and enrich existing educational programs by integrating the palliative care context when possible.

A limitation of this study is that it was conducted in the specific context of Dutch medical education. Fortunately, however, all Dutch medical universities were represented and the participating panel members were spread geographically throughout the country. We did not invite patients nor their family members to participate in this study. However, in an earlier conducted study, we interviewed patients who received palliative care and their family members about the palliative care that they received and on the qualities that junior doctors and nurses need to acquire. A strong point of this study is that we involved different groups of stakeholders. However, our data give only limited insight into panel members' reasoning. We do not know why they considered the different competencies important, nor can we say anything about what they considered more urgent or important. Further research is required to investigate the usefulness of this framework in practice, and how and in which order competencies can be best addressed in undergraduate medical curricula. A natural continuation of our study would be to focus on the implementation and evaluation of the way in which these competencies are addressed and mastered by students.

## Conclusions

This study has resulted in a validated competency framework that guides implementation of education about palliative care in undergraduate medical education. The level of consensus among panel members on the level of acquirement on the competencies was high. They concurred that all the proposed key and enabling competencies should be included in the undergraduate medical curricula and that all key and most enabling competencies should be attained at a practical level, i.e., in a simulated setting or practice under close supervision. The framework can be used to



develop educational materials and improve medical education programs that prepare students to provide palliative care.

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## Supplementary materials

**Table S3.1** Panel Members' Mean Ratings of Each Enabling Competency in Palliative Care and their Standard Deviations, Divided into Six Categories (N panel members=54) (1–6 scale; 1=graduate does not require this competency; 6=graduate must be able to practise this competency with little guidance).

Key Competency	Enabling Competency Junior doctor is able to:	Mean	SD
<b>Communication</b>			
	Mark the palliative phase.	4.33	0.824
	Communicate with respect and empathy with patients and loved ones.	5.02	0.961
	Adapt to the different ways of communicating.	4.70	1.002
	Take diversity into consideration and adjust the content and communication style (e.g. with regard to cultural aspects or beliefs) when communicating with the patient.	4.65	0.974
	Keep patients and loved ones informed about the expected course, treatment and care options.	4.39	0.712
	Discuss the expectations and wishes of the patient and their relatives with regard to the course of the illness, treatment, care process and manner of death.	4.52	0.746
	Make the four dimensions of palliative care open to discussion with the patient and loved ones.	4.13	0.674
<b>Advance care planning</b>			
	Integrate disease-oriented and symptom-focused care at an early stage*.	3.38	0.906
	Commit to shared decision-making in setting policy with regard to the course of the illness, treatment, care process and manner of death.	4.13	0.674
	Act proactively at the various stages of palliative care and anticipate potential complications*.	3.81	0.779
	(With regard to diagnosis and treatment) take into account both the quantity and quality of life (e.g. avoids under- and over-diagnostics and weighs up diagnostic processes).	4.37	0.681
	Apply evidence-based principles from the literature, protocols and guidelines from the field of palliative care when it comes to making their own clinical decisions.	4.30	0.833
	Explicitly discuss the patient's wishes for the end of life (including euthanasia and treatment limitations).	4.43	0.716
	Act in accordance with legislation and regulations when making decisions to do with the end of life: stopping fluid/nutrition, palliative sedation, euthanasia and assisted suicide*.	3.72	0.920
	Exhibit awareness of the ethical and moral dilemmas surrounding the end of life. When necessary, discusses these issues with the patient, loved ones and care providers involved and acts according to the outcome of these considerations*.	3.89	0.793



Table S3.1 (continued)

Key Competency	Enabling Competency Junior doctor is able to:	Mean	SD
Pain and symptom management	(During the palliative phase) treat problems arising from common syndromes (e.g. heart failure, COPD, cancer and dementia).	4.17	0.818
	(When setting policy) take into account and, if necessary, treat the most common emergencies arising in the palliative phase, such as delirium, (imminent) spinal cord injury, massive (lung) bleeding, vena cava superior syndrome, ileus, retention bladder, acute dyspnoea, suffocation, exhaustion, pain, existential crisis*.	3.96	0.868
	Systematically identify the most common symptoms in the palliative phase, such as pain, congested breathing, confusion, nausea and vomiting, anxiety and itching, and treat these with and without medication.	4.26	0.894
	Recognise and consider the feelings of patients and relatives and the influence these have on the well-being of those involved.	4.63	0.958
	Systematically evaluate the psychological health of the patient, and provide treatment and support or refer the patient [to a professional].	4.11	0.793
	Recognise the different coping strategies that patients and relatives use, adapt their own behaviour and communication accordingly and call in expertise and/or professional guidance as needed*.	3.91	0.896
	Recognise the different ways of mourning, adapt their own behaviour and communication accordingly and call in expertise and/or professional guidance, if needed*.	4.07	0.949
	Signal when informal care providers get overloaded and offer support/referral, if necessary*.	3.80	0.979
	Examine the patient's social context, including financial capacity and the legal and practical issues concerning end of life, and consider its influence on the patient's palliative care. Refers the patient to extra support, if required*.	3.56	1.022
	Provide space for spiritual, existential and religious topics in conversations with patients and their loved ones and refer them to specific care on request*.	3.85	0.856
Multidisciplinary team	Work in a multidisciplinary and interdisciplinary team; exhibit familiarity with the duties and responsibilities of the other health care professionals involved.	4.26	0.805
	Take advantage of opportunities for consultation in palliative care and, to this end, consult experts within and outside the institution.	4.35	0.828
	Organise the care chain, taking management into account*.	3.52	1.112
	Refer the patient directly to palliative care organisations that can provide care and support to palliative patients and their relatives (e.g. patient associations, informal caregiver support centres, and network organisations for palliative care) *.	3.70	0.944
	Arrange complementary care, if desired*.	3.43	1.092
End of life	Treat problems arising in the terminal phase, including stopping infusions and palliative sedation.	4.19	0.779
	Determine the time and cause of death and fill in the death certificate.	4.67	1.213
	Guide the loved ones directly in the period around the death.	4.56	0.965

Table S3.1 (continued)

Key Competency	Enabling Competency Junior doctor is able to:	Mean	SD
Personal development and well-being	Exhibit awareness of their own feelings and know what effect they have or can have on their own attitude and behaviour.	4.46	0.985
	Reflect on distance (objectivity) and proximity in the treatment relationship with a palliative patient.	4.30	0.903
	Exhibit knowledge of their personal responsibility as a health care professional and the limits thereof.	4.57	0.983
	Recognise signs of their own overload and, if necessary, seek adequate help.	4.54	1.004
	Reflect on their own spiritual and existential experiences around life and death*.	3.87	0.933
	Reflect on own values and norms in the field of palliative care.	4.24	0.845
	Act professionally with due regard to both personal and professional values and norms.	4.69	1.006

\* No consensus (lower than 75%) found





# CHAPTER 4

## **The Spiritual Dimension in Palliative Medicine: a qualitative study of learning tasks – medical students, teachers, educationalists.**

Pieters, J., Verstegen, D. M. L., Dolmans, D. H. J. M., Neis, E. P. J. G., Warmenhoven, F. C., & Van den Beuken-van Everdingen, M. H. J. (2021). The Spiritual Dimension in Palliative Medicine: a qualitative study of learning tasks – medical students, teachers, educationalists. *BMJ Supportive & Palliative Care*. <https://doi.org/10.1136/bmjspcare-2021-003026>

## Abstract

### Background

Palliative care is gaining importance within the physician's range of duties. In the undergraduate medical curriculum, education on the four dimensions of care is insufficient. The spiritual dimension is hardly addressed. Therefore, we developed a coherent set of learning tasks targeted at learning to communicate about the spiritual dimension. The learning tasks are based on educational principles of authentic learning, reflective learning and longitudinal integration in the curriculum. This article reports on the feasibility of using these learning tasks in the medical curricula.

### Methods

Teachers and educational scientists were interviewed and students were asked to evaluate the learning tasks in focus groups. Interview transcripts were analysed by three independent researchers.

### Results

The learning tasks encourage the students to reflect on the four dimensions of palliative care and their personal values. Learning was clearly organised around authentic learning tasks relevant to the later profession, using paper, video cases, as well as simulations and real patients. Participants suggest giving more attention to cultural diversity. As palliative care is an emotionally charged subject, the safety of both student and patient should be guaranteed. All participants indicated that the program should start in the bachelor phase and most agreed that it should be integrated vertically and horizontally throughout the undergraduate program, although there is some debate about the optimal moment to start.

### Conclusion

The tasks, are authentic, encourage the students to reflect on the spiritual dimension of palliative care and are suitable for integration in the undergraduate medical curriculum.

## Introduction

The need for palliative care is set to grow due to demographic changes, longer disease trajectories and higher comorbidity. Central to providing palliative care is the holistic, patient-centred and multidimensional approach, which addresses not only the physical, but also the psychological, social and spiritual dimension (Al-Mahrezi & Al-Mandhari, 2016). Providing palliative care is increasingly recognised as a universal responsibility of healthcare professionals (Best et al., 2020; Osman et al., 2018) and all doctors will see patients with progressive life-limiting conditions at some point during their careers (MacPherson et al., 2014). Physicians, irrespective of specialism, should be both competent and confident in caring for the palliative care patient. Taking care of palliative care patients is typically associated with powerful and highly emotional situations affecting junior doctor's emotional well-being (Bharmal et al., 2019). It is therefore important that junior doctors develop the ability to guide palliative care patients during their medical training (Barclay et al., 2015).

Although there is a growing international movement to embed palliative care education in the undergraduate medical curricula (Bharmal et al., 2019), this topic is not adequately addressed within all European medical universities. Several studies demonstrate that medical students do not receive sufficient education in this area (Gibbins et al., 2011; Billings & Block, 1997). Students do not feel well prepared (Wells et al., 2020; Chen et al., 2015; Storarri et al., 2019; Weber et al., 2011) and feel especially ill-prepared to raise and discuss the psychological, social and spiritual dimensions of care (Pieters et al., 2019). Their education primarily focuses on one dimension—the physical—while allowing the others to fall by the wayside (Pieters et al., 2021). Students also report that self-care and reflection in the context of palliative care do not get much attention in their education (Wells et al., 2020; Pieters et al., 2019). In the Netherlands, the undergraduate medical education assigns only limited attention on palliative and end-of-life care (Pieters et al., 2019; de Bruin et al., 2018; Hesselink et al., 2010; Carrasco et al., 2015). This despite that the national competency framework states that the doctor should promote people's health and related quality of life, also in the palliative phase (van de Pol et al., 2020). The competences that Dutch medical students need to acquire to provide good-quality palliative care have recently been set out in an educational framework (Pieters et al., 2020). This framework specifies among others that the medical students should be able to talk to the patient and family about the incurable illness, prognosis and death, and discuss the four dimensions of care. They should also be able to take care of their own well-being and reflect on their own spiritual needs, alongside their perceptions about life, death and dying.

To bridge the gap between what students should learn and actually learn about spiritual care, we developed a coherent set of eight learning tasks. Addressing the spiritual dimension is a complex task. According to current educational principles,



learning complex tasks can be supported by providing authentic or realistic learning tasks (Vandewaetere et al., 2015), by using principles of reflective learning, and should be integrated in the curricula. Authentic tasks allow students to acquire knowledge, skills and attitudes in an integrated fashion (Dolmans et al., 2013) which improves the transfer of the curriculum to the workplace (Vandewaetere et al., 2015). These authentic learning tasks can be interwoven in existing curricula in a horizontal and vertical integration manner. Reflection is a skill that is considered crucial for personal and professional development (Borgstrom et al., 2016; Mann et al., 2009; Shapiro et al., 2006; Sandars, 2009). Through reflection, students are encouraged to think about their role as a physician (Borgstrom et al., 2016) foster professional growth, release the emotional burden of caring for palliative care patients and increase patient care skills (Shapiro et al., 2006). Self-reflective training on the spiritual dimensions within the students' own lives is recommended (Best et al., 2020). We developed a coherent set of realistic authentic learning tasks, in which students learn about and reflect on communication about the four dimensions of care, with a particular focus on the spiritual dimension. The main aims of these learning tasks are that students learn about spiritual care, are able to talk about it with a palliative care patient, and to reflect on their spiritual experiences regarding life and death. This article gives more insight into the usability and feasibility of these learning tasks from the stakeholders' perspectives, that is, medical students, teachers and educational scientists on the design of the learning tasks based on the educational principles of authentic educational scenarios, reflection and integration. The research question is: How do medical students, teachers and educational scientists evaluate a set of coherent learning tasks focusing on the spiritual dimension of palliative care?

## Methods

### Design

Three groups of stakeholders were asked to participate in this evaluation: medical students, teachers, and educational scientists. The students were interviewed in focus groups. The teachers and educational scientists were questioned in individual interviews, due to their busy schedules. This qualitative approach was used to gather in-depth information and insights from our stakeholders.

### Setting

In the Netherlands, it takes 6 years to qualify as a physician. In the first 3 years, the Bachelor program, the student primarily acquires theory and medical knowledge. In

the last 3 years, the Master’s program, the focus is on the application of knowledge in the work setting by letting students rotate between different internships.

### Coherent set of learning tasks

We designed a set of eight learning tasks (Table 4.1; for a full description, see online supplemental appendix 1), designed to be integrated into the undergraduate medical curriculum. The designers included diversity and variations in teaching methods, diseases, treatment plans, age and gender of the patient. The competencies to be acquired are described in Box 4.1. These competences are a selection of the framework from Pieters et al. (2020). The educational principles of authenticity, and reflection are incorporated into the set of learning tasks (see Table 4.2).

**Table 4.1** The eight learning tasks.

1	Learning about the four dimensions: physical, psychological, social and emotional
2	Discussing and reflecting on palliative patient in the context of life
3	Reflection on personal views on life, death and dying
4	Recognizing the spiritual dimension
5	Learning to integrate the spiritual dimension into counselling
6	To conduct an interview on meaning and purpose and work with the Diamond Model
7	Simulation interview with a palliative patient
8	Unsupervised interview with a palliative patient

**Box 4.1** Intended competencies of the learning tasks.

Competencies	
1.	The student communicates in a respectful and empathetic manner with patients and relatives.
2.	The student makes the four dimensions (somatic, psychological, social, and spiritual) of palliative care discussable with the patient and family.
3.	The student reflects on distance and closeness in the treatment relationship with a palliative patient.
4.	The student reflects on his/her spiritual and existential views around life and death.

**Table 4.2** The incorporated educational principles in the different learning tasks.

Authentic tasks	The materials provided are based on life-like, authentic tasks. The video clips used are based on real cases encountered by professionals in their work. The learning tasks have been developed in close consultation with various care professionals. Furthermore, the student interviews a real patient they have met in the workplace.
Reflecting	Reflection is a vital part of almost every learning task. Reflection is emphasised in several areas: Reflection on personal values, standards, and allocation of meaning and purpose (learning tasks 2,3 and 5) Reflection on the influence of the four dimensions on the patient and the care trajectory (learning task 1, 4, 5 and 8)
Integration	The learning tasks have been developed for integration into existing courses.



## Participants

Three groups of stakeholders were asked to participate in the evaluation: medical students, teachers and educational scientists. The stakeholders came from faculties of medicine of four different universities in the Netherlands.

### *Medical students (N=9)*

These stakeholders were asked to be interviewed in focus groups as they represented the educational users as learners. Medical students in their final year of the Bachelor's program or studying for their Master's degree were invited. These students have an informed opinion as to which tasks they deemed suitable for students and at what stage the tasks could best be implemented in the curriculum.

### *Teachers of palliative care (N=9)*

These stakeholders were invited for their insight and experience in education and their substantive expertise in palliative care. This group of stakeholders included medical specialists, mental healthcare providers and psychologists involved in teaching in undergraduate medical education.

### *Educational scientists (N=4)*

These stakeholders were asked for their expertise in both educational design and the educational principles used in this learning program (Authentic learning, reflection and integration into existing courses). The educational scientists worked at medical faculties.

## Instruments

The teachers and educational scientists were interviewed individually, the students were interviewed in focus groups, using the same semistructured interview guide (see online supplemental appendix 2). The interview guide asked for perceptions of the set of learning tasks, focusing on the educational learning principles that shaped them: authentic learning tasks, the principles of reflective learning, and the integration into the existing courses.

## Procedure

Participants were recruited through purposeful sampling within the network of Pasemeco until data saturation was reached. They were invited through an email that included the information letter. Prior to their individual or focus group interview, the participants received a short explanatory video and a document with an overview of

the set of learning tasks. The interviews took no more than 45 min and were conducted by JP and EN. The interviewees gave their written informed consent.

## Analysis

The interviews were recorded and transcribed. To support the qualitative data analysis, Atlas.ti V.8 was used. The transcripts were analysed using template analysis, taking into account the step-by-step plan of Brooks et al. (2015). Researchers JP, EN, and FW carried out the preliminary coding of the data, starting with determining the a priori themes. These themes were based on the components of the research question (authentic learning tasks; reflection and integration into the curriculum). Two interview transcripts were read and coded independently by researchers JP, EN, and FW. They discussed their findings, merged the themes into meaningful clusters, and provided an initial coding template. This template was then applied independently by the three researchers to three other transcripts.

After consultation, the template was finalised and applied to the full data set. Themes were discussed and elaborated on iteratively with the whole research team. JP and DV coded the other eight transcripts independently and discussed the results afterward. The results were then discussed among all of the authors.

## Reflexivity

This learning program was developed by a multidisciplinary group that included educational scientists (DV and DD), researchers (JP and EN) and physicians (FW and MvdBvE). The different perspectives have enhanced the strength of this paper, but may have influenced our views on educational principles and the learning tasks.

## Results

### Authentic tasks

The stakeholders agreed that the educational materials, including the case descriptions, the video clips and short movies, showed the students a realistic view of what they could encounter in the workplace. The learning tasks were authentic and presented in a logical and structured order, from paper cases to a full-fledged conversation with a patient. The stakeholders commented that the learning tasks and materials could be further improved if they provided a better reflection of the cultural diversity within the patient population. Students especially appreciated the clips in which real patients and doctors talked about palliative care and suggested that encouraging the possibility to discuss cases students have encountered in medical practice would further increase the authenticity.



## Reflective learning

Stakeholders recognised reflection is a recurring element across the learning tasks. They also consider it to be an important skill. According to the stakeholders, the majority of the students should be able to reflect well on the various health dimensions, but the spiritual dimension can be emotionally charged. Some stakeholders indicated that to be able to reflect on this properly, some life experiences would not go amiss. Novice medical students' reflections lack the necessary depth in comparison with Master's degree students. Both the teachers and students preferred oral group reflection. The students indicated that they attached great value to the interaction with their fellow students and that it helps them express themselves better. Student safety must be ensured in order for them to properly reflect in a group.

## Integration

The stakeholders believed that the learning tasks should be integrated across the curriculum in different years. However, it is important that this does not become too fragmented and that students can clearly see the cohesion. Almost all stakeholders mentioned that the initial tasks (tasks 1–5) would be best implemented in the Bachelor's program, as the cases in these tasks revolve around the basis of palliative care. The other learning tasks (tasks 6–8) were considered more appropriate for more advanced students during the internships as these center around communication with a simulated or real patient. According to the stakeholders, they required experience with patients that students only acquire during the Master's degree. There was no consensus as to when to start the learning trajectory. Some stakeholders believed that palliative care education should start in the very first year, so that students become immediately aware that palliative care is a part of routine care. But others thought it better to wait until the end of the Bachelor's program, because students would not be open to the subject or not fully understand the subject matter until then.

The implementation should also take into account the differences between students. In the final learning task, students conduct an unsupervised interview with a palliative patient. According to the stakeholders, the learning program does prepare students well for this interview, but it is still an emotionally charged task. In order to protect both the patients and the students, the students must be well prepared and be able to take the lead in such an interview. Some students may need more training or support (Table 4.3).

**Table 4.3** Theme's and quotes of the stakeholders.

Theme	Quote
Authentic tasks	<p><i>"I recognise this (authenticity, eds.) in so far that patients tell you a lot of stories. So, in that sense, they are all very authentic stories and this is how patients present themselves to doctors" – I10</i></p> <p><i>"If you look at the learning tasks, you do see a clear structure. From watching to an increasingly active role to eventually actually having a conversation with a patient, of course" - I8</i></p> <p><i>"I would also pay more attention to a more diversified background, (XX). The impression here is that it might be more about the classic white Dutch native than perhaps the Surinamese or Moroccan who gets into these problems and needs an essentially different approach" – I7</i></p> <p><i>"(the clips, eds.) in the sense that the doctors who were talking, for example a [person] I have met in the clinic as well so that appeals more to the imagination. That actually makes it even more authentic" - FG2</i></p> <p><i>"That there are not only videos but also something like a link to a wishlist , and a (Volkskrant) newspaper article so I think that's already very authentic. You might want to make it a little more authentic by having students contribute cases they encounter" – FG2</i></p>
Reflective learning	<p><i>"I believe, indeed, that in real life that might be better than on paper, especially because you sometimes have to put something on paper and then you are not really sure or you feel differently or have not enough time and if you are really working in such a group, then ideas emerge or feelings that other people then evoke in you or you hear it and you think, oh that's right, I agree or I do not" – FG1</i></p> <p><i>"What is also important here is that in your educational groups, or in the subgroup where you would discuss this, you have a bond of trust as well as feel safe" - I11</i></p>
Integration	<p><i>And what might also be good timing, (xx), is the second half of the third year of medicine. Students are then very receptive to everything that is useful in their internships, so to speak, because then it is kind of a big thing that you will have to tackle soon and so you have to get started" – FG2</i></p> <p><i>"I see no reason not to do it (integration as of year 1 , eds.). And another advantage is that students will get an idea of - oh, yes, so this is part of the job as well? It soon makes it more normal, because students often enrol with a strong idea of: we are going to make everyone better... but accepting that you can't make someone better will become the reality... but it is not really part of the idea of beginning students so, in that sense, I think: maybe it's also good to create some kind of awareness here" - I12</i></p> <p><i>"I believe you could use that simulation interview as a go/no-go for having an interview with a patient. And, once again, they really are vulnerable patients, often in the final stage of life, who are often quite willing to contribute to the training, but who should also not be burdened disproportionately by oafs or students who are not interested or cut corners, and that such a patient is about to go home with a bad feeling after 45 minutes" - I8</i></p>

I= interview; FG= Focus Group



## Discussion

The medical students, teachers, and educational scientists agree that the set of learning tasks was designed in line with contemporary instructional design guidelines. Learning was clearly organised around authentic learning tasks relevant to the later profession, using paper, video cases, as well as simulations and real patients. The tasks encourage the students to reflect on the four dimensions of palliative care and their personal values. There were various options offered for the integration of the tasks into existing curricula. The stakeholders also offered a number of suggestions to take into account, which will be discussed further.

First, palliative care and the spiritual dimension in particular are emotionally charged subjects. Extra attention to both student and patient safety is required. Both the students and teachers attached great value to the group discussions and reflections, where a bond of trust and psychological safety between all of the attendees was considered to be essential. These findings are in line with the literature, where confidentially sharing experiences is needed and only possible in a group of people who know each other (Best et al., 2020; Feld & Heyse-Moore, 2006).

Second, the educational materials were considered authentic with variation in cases and learning methods, but to increase authenticity, the stakeholders suggested including more cultural diversity among the patient cases used in the learning tasks. Contemporary society is more culturally diverse than the current materials reflected. It is an important topic that should not be overlooked, given that many physicians are unfamiliar with the specific needs of ethnic minorities regarding palliative care and communication (Suurmond et al., 2020).

Third, there was discussion on how to integrate learning tasks or palliative care education in general. All participants agreed that this should start in the Bachelors and most agreed that it should be integrated vertically, throughout the undergraduate program and not as a stand-alone module. Furthermore, it needs to be integrated horizontally, where relevant, for instance, in cardiology, oncology, humanities, and communication training. Integrating this set of learning tasks, therefore, mainly depends on the curriculum of a medical university and its identity as to where and when palliative care education can be implemented in the curriculum. The idea of vertically and horizontally integration is in line with recent educational research and guidelines (MacPherson et al., 2014; McMahon & Wee, 2021; Mason & Ellershaw, 2010).

Some stakeholders argued that for learning about spiritual and palliative care in general, students should have some life experience and, therefore, it would be more suitable to start the program later in the bachelor. Others argue that palliative care should be normalised for the students and should, therefore, start in the first year. The concern that early exposure may be emotionally challenging for young students, is the

main reason why curricula integrate palliative care education in general later in the program (Wechter et al., 2015; Sullivan et al., 2003) However, research shows that direct experience with palliative care for first-year students is associated with positive effects on the students' attitudes regarding caring for palliative care patients (McMahon & Wee; 2021; Wechter et al., 2015; Binienda et al., 2001; Crawford & Zambrano, 2015). Junior doctors who were trained earlier in palliative care have enhanced competencies of psychosocial and spiritual aspects of palliative care, communication, and self-awareness (Crawford & Zambrano, 2015). Thus, early exposure helps to normalise death and dying and the complex emotions that students and physicians can encounter while treating palliative care patients (Wechter et al., 2015; Binienda et al., 2001; Crawford & Zambrano, 2015). Interestingly, in this study, students themselves had lively discussions on this topic too, but they mainly discussed more practical obstacles: when is there time for this in the curriculum?

This study had some limitations. To begin with, we evaluated the set of learning tasks prior to its implementation. This meant that we could not reflect on the implementation process itself, leaving this to be researched at a later stage. We also focused on the stakeholders in the educational setting: medical students, teachers, and educational scientists. Patients were not involved in the evaluation, although they were involved in the overarching project within which the learning tasks were developed. Last but not least, the educational principles within this learning program were tailored to the Dutch situation. The educational principles and general setup of the design are internationally transferable, if tailored to the national situation. Following the authenticity principle means that it is important to paint a realistic picture of the professional field. If authenticity is to be guaranteed, learning tasks will have to be reviewed and adapted to be used in other countries. This also regards to the principle of reflective learning. The students involved in this study are already familiar with reflecting and sharing their opinion, since it plays a vital role in their curriculum. On a national level there is a lively debate on end-of-life care, but not on the spiritual dimension. Therefore, an emphasis was placed on the spiritual dimension.

This study has several practical implications. First, it pays off to integrate the program horizontally and vertically into the curriculum. It depends on the specific tasks and the curriculum itself how and where the integration can best take place. Some tasks will fit in well with education regarding communication or where clinical conditions are discussed such as oncology or lung disease. To avoid fragmentation and guarantee that all aspects are covered, however, it is also important that someone has an overview of where and how palliative care is addressed in the curriculum, for example, a curriculum coordinator or someone specifically assigned with this task. Furthermore, the tasks can always be adapted to specific contexts. For example, it might be difficult to arrange interviews with palliative care patients. Students could then interview a chronically ill patient



instead of a palliative patient. With explicit attention to communication and spiritual care education, it is possible to better prepare students for working in the professional field. The spiritual dimension of care deserves explicit attention in the medical curriculum.

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## Appendix 4.1 Overview of learning tasks

Learning task	Title	Objective	Design
1	Learning about the four dimensions: physical, psychological, social and emotional	<ul style="list-style-type: none"> <li>● To introduce the subject of palliative care and the four dimensions of illness and care.</li> <li>● To learn to recognise each dimension.</li> <li>● To make the connections between problems in the different dimensions.</li> <li>● To adapt the patient's care to the problems in all of the dimensions.</li> </ul>	<p>In this learning task, the focus is on the introduction of the four dimensions of care and illness.</p> <p>Students are shown a brief explanatory video clip with the basic principles of palliative care. It also explains the four dimensions.</p> <p>Next, the students review five patient cases from palliative care.</p> <p>They are then asked to:</p> <ol style="list-style-type: none"> <li>1. recognise the different dimensions of illness in each case;</li> <li>2. make the connections between problems in the different dimensions;</li> <li>3. adapt the patient's care to the problems in all of the dimensions.</li> </ol> <p>Together with a tutor/teacher, the students answer the questions associated with the cases. The students explore the elements of these four dimensions.</p>
2	Discussing and reflecting on palliative patient in the context of life	<ul style="list-style-type: none"> <li>● To see the palliative patient in the context of their life.</li> <li>● To reflect on what emotionally affects the students themselves and what is apparently important to the patient.</li> <li>● To acquire the relevant communication skills.</li> </ul>	<p>In this learning task, the focus is on seeing the patient in context and subsequent reflection.</p> <p>The students watch 7 video clips of approximately 12 minutes each in which people talk about their personal experiences with palliative care. In the video clips, the four dimensions can be recognised in palliative patients with various underlying illnesses such as breast cancer and pancreatic cancer.</p> <p>They jointly reflect on:</p> <ul style="list-style-type: none"> <li>● the doctor as a person;</li> <li>● allocation of meaning or purpose;</li> <li>● communication, in-depth questioning;</li> <li>● involving different dimensions in the care policy.</li> </ul>



Learning task	Title	Objective	Design
3	Reflection on personal views on life, death and dying	<ul style="list-style-type: none"> <li>● To be able to reflect on and discuss personal ideas about dying and death and the influence these could have on the role as a care provider in palliative care.</li> <li>● To be able to reflect on and discuss personal ideas about meaning and purpose and the influence these could have on the role as a care provider in palliative care.</li> </ul>	In this learning task, the focus is on the reflection on life and death. Students study the preparatory materials beforehand. In the group meeting, they first discuss the various styles of dying, questions of meaning and purpose, and ideas and wishes regarding dying. Next, the discussion is steered towards the role of the care provider. The students complete a reflection assignment after the meeting. Their reflection is to focus on answering the following questions: "Say that today you have heard that you have no more than 4 months to live, what would you want?", "What would be important to you?", and "How would you like a care provider to deal with it?"
4	Recognizing the spiritual dimension	<ul style="list-style-type: none"> <li>● To communicate with patients about dying and death.</li> <li>● To question a patient on relevant aspects in the physical, psychological, social and spiritual dimensions.</li> <li>● To be able to reason about the possible influence of aspects from the different dimensions on the palliative care policy to be pursued.</li> </ul>	In this learning task, the focus is on the role of the doctor, in this case the general practitioner, in discussing questions about meaning and purpose and linking these findings to choices in treatment options. The task comprises preparatory reading and a group meeting where four video clips are watched and discussed. The first three clips are (staged) interviews between a family doctor and a patient with breast cancer in different stages of her illness. In the last interview, the general practitioner reflects on his own role in the care of palliative patients. He also emphasises the importance of discussing questions of meaning and purpose and the influence his findings may have on the choices in treatment.
5	Learning to integrate the spiritual dimension into counselling	<ul style="list-style-type: none"> <li>● To communicate with patients about dying and death.</li> <li>● To question a patient on relevant aspects in the physical, psychological, social and spiritual dimensions.</li> <li>● To be able to reason about the possible influence of aspects from the different dimensions on the palliative care policy to be pursued.</li> <li>● To be able to reflect on and discuss personal ideas about meaning and purpose and the influence these could have on the role as a care provider in palliative care.</li> <li>● To be able to discuss questions on meaning and purpose with palliative patients and, if necessary, refer them for further support.</li> </ul>	In this learning task, the focus is on how physicians integrate the spiritual dimension into their counselling of palliative patients. The task comprises preparatory reading and a group meeting in which three video clips are watched and discussed. The video fragments show that doctors differ in their dealing with meaning and purpose, but that there are also interesting parallels to be discovered. The students study these differences and similarities and consider their own views on the integration of the spiritual dimension.

Learning task	Title	Objective	Design
6	To conduct an interview on meaning and purpose and work with the Diamond Model	<p>To communicate with patients about dying and death.</p> <p>To question a patient on relevant aspects in the physical, psychological, social and spiritual dimensions.</p> <p>To be able to reason about the possible influence of aspects from the different dimensions on the palliative care policy to be pursued.</p> <p>To be able to discuss questions on meaning and purpose with palliative patients and, if necessary, refer them for further support.</p>	<p>In this learning task, students briefly watch video clips on how to start an interview about meaning and purpose with a palliative patient. In these video clips, the palliative patients reveal areas of tension when it comes to allocating meaning and purpose. These can be identified by Carlo Leget's Diamond Model, which provides the students with an (open) framework from where they can approach the spiritual dimension. After watching the video clips, the students continue the discussion in small groups. Finally, all of the findings are discussed.</p> <p>Five different video clips are available.</p>
7	Simulation interview with a palliative patient	<p>To effectively practise the skills to query the four dimensions of palliative care with a specific focus on meaning and purpose.</p>	<p>In this learning task, the focus is on practising the skills to interview a palliative patient. By way of preparation for the actual interview, an interview is conducted with a simulation patient. This is to create a safe environment in which the students can master the necessary interview skills. The simulation interview is followed by reflection.</p>
8	Unsupervised interview with a palliative patient	<p>To explore how people learn to live with permanent limitations as a result of a chronic or incurable disease.</p> <p>To reflect on the differences in the way people learn to live with different types of permanent disorders and limitations, including differences between somatic and psychological limitations.</p> <p>To explore the concepts of "coping", "palliation" and "meaning and purpose".</p> <p>To explore the relationship between the somatic, psychological, social and spiritual aspects of (coping with) a palliative condition.</p> <p>To explore the relationship between the somatic, psychological, social and 'spiritual' aspects.</p>	<p>In this learning task, the focus is on having an unsupervised interview with a patient about the four dimensions. The assignment begins with students studying the preparatory materials consisting of literature on the four dimensions of care and a topic list with questions that students may use during the interview.</p> <p>The student interviews a palliative patient (or, if this is not feasible, a chronically ill patient) focusing on the four dimensions of care and illness and not just the diagnosis. The interview will take between 30 and 45 minutes.</p> <p>Afterwards, the student writes a narrative report and a brief reflection on the interview describing how the patient deals with the condition or illness, how they perform in each of the four dimensions, and how the four dimensions affect the care (to be) provided. The student discusses their interview with fellow students in a tutorial group. They also provide peer feedback on two of the reflection reports from their fellow students. The interview with the patient can take place in either the clinical or home setting.</p>



## Appendix 4.2 The interview guide

### Introduction:

[Introductions and expl and goal of research study]

Transition question:

- 1) What do you think of palliative care education, especially about communication and spiritual dimension, in the Netherlands?

Thank you. The set of learning tasks is designed based on certain ideas and educational principles. I would like to elaborate on this.

[Short presentation about the learning tasks].

- 2) What is your first impression of the coherent set of learning tasks?
- 3) What is your impression of the different parts of the coherent set of learning tasks? What works well and why, what works less well and why? What do the students learn from this?
- 4) We think it is important that there is a build-up in difficulty. Do you recognize this in the set of learning tasks? Why/ why not?
- 5) We think it is important that the tasks and assignments that can lead to authentic learning. Do you recognize this in the set of learning tasks? Why/ why not?
- 6) We also think it is important that the tasks and assignments lead reflection. Do you recognize this in the set of learning tasks? Why/ why not?
- 7) Can the coherent set of learning tasks be integrated within the medical curriculum? At which points / in which years could the learning tasks be integrated?
- 8) Are there other things that are relevant to report?





# CHAPTER 5

## **Design and evaluation of a learning assignment in the undergraduate medical curricula on the four dimensions of care: a mixed method study**

Pieters, J., Verstegen, D. M. L., Dolmans, D. H. J. M., Warmenhoven, F. C., & Van den Beuken - Van Everdingen, M. H. J. (2021). Design and evaluation of a learning assignment in the undergraduate medical curricula on the four dimensions of care: a mixed method study. *BMC Medical Education*, 21(309).  
<https://doi.org/10.1186/s12909-021-02681-0>

## Abstract

### Background

Chronic and palliative care are rapidly gaining importance within the physician's range of duties. In this context, it is important to address the four dimensions of care: physical, psychological, social, and spiritual. Medical students, however, feel inadequately equipped to discuss these dimensions with the patient. To bridge this gap, a new assignment was developed and implemented, in which students talked to a chronic or palliative patient about the four dimensions of care during an internship. This study, reports the evaluation of this assignment by students and teachers using a design-based approach.

### Methods

Mixed methods were used, including a) student questionnaires, b) student focus groups, c) teacher interviews, and d) student's written reflections. Two researchers performed analyses of the qualitative data from the focus groups, interviews, and written reflections using qualitative research software (ALTLAS.TI). Descriptive statistics were computed for the quantitative data using SPSS 21.0.

### Results

Students and teachers valued talking to an actual patient about the four dimensions of care. Reading and providing peer feedback on each other's reports was considered valuable, especially when it came to the diversity of illnesses, the way that patients cope and communication techniques. The students considered reflection useful, especially in the group and provided it was not too frequent. All the dimensions were addressed in the interviews, however the spiritual dimension was found to be the most difficult to discuss. The analysis of the written reflections revealed an overlap between the social and spiritual dimensions. Students pay a lot of attention to the relationship between the illness and the patient's daily life, but the reflections do often not show insight in the potential relationship between the four dimensions and decisions in patient care.

### Conclusions

During internships, medical students can practice talking about four dimensions of care with a chronically ill or palliative patient. Due to the format, it can be implemented across existing internships with relatively little extra time and effort. Reflection, peer feedback, and group discussion under the guidance of a teacher are important additions.

## Introduction

The growing elderly population and advancing medical insights have given chronic and palliative care more prominence in the physician's range of duties. Central to chronic and palliative care is the holistic approach. This approach concerns the four dimensions of care: physical, psychological, social and spiritual. The provision of such holistic care poses complex challenges (Bailey & Cogle, 2018). It is important, therefore, that medical students acquire the necessary knowledge and skills before they enter the professional setting and that they learn to communicate with a patient about the four dimensions of care. Basic palliative care training to all medical and nursing students has been a long-standing credo of the palliative care community (Paal et al., 2020), and had it been implemented, the health-care professionals would be more prepared for the COVID-19 pandemic (Radbruch et al., 2020). The competences that medical students need to acquire to do so have recently been set out in an educational framework (Pieters et al., 2020), but prior research has shown that medical students feel ill-prepared to raise and discuss the four dimensions (Pieters et al., 2019). Their education primarily focuses on one dimension - the physical - while allowing the others to fall by the wayside.

To fill this gap, a new assignment was developed to teach students to communicate about the four dimensions of care with a patient. This assignment was implemented in an existing internship in which students encounter chronic patients on a regular basis. Addressing the four dimensions is a complex task. According to current educational principles, complex learning can be supported by an assignment that constitutes a realistic or authentic task (Vandewaetere et al., 2015). Realistic, authentic tasks allow students to acquire the necessary knowledge, skills and attitudes integrally (Dolmans et al., 2013). This, in turn, improves the transfer of the curriculum to the workplace (Vandewaetere et al., 2015). The authenticity of the assignment in this study lay in the fact that the student was to question a real patient encountered in the professional practice about the four dimensions of care.

The principles of peer feedback and reflection also play an important role in contemporary learning. Feedback is essential for learning (Simonsmeier et al., 2020; Hattie & Timperley, 2007; Schultz et al., 2004); it can help students recognize their possible shortcomings in their knowledge, skills, or attitudes (Simonsmeier et al., 2020). Students who provide peer feedback experience increased responsibility. It also initiates an active and self-managed learning process (Simonsmeier et al., 2020). It may be a reliable assessment for professionalism and aid in the development of professional behavior (Lerchenfeldt et al., 2019). At the same time, the students reflect on their own work by considering the work of others. They learn to use assessment criteria, which they can then apply to their own work (Patchan & Schunn, 2015). The ability to reflect on one's own performance is regarded as crucial for personal and professional development (Borgstrom et al., 2016; Mann et al., 2009; Shapiro et al.,



2006; Sandars, 2009). Reflection is an essential component in medical curricula (Sandars, 2009). It creates a greater understanding of both the self and the situation, so future actions can be informed by this understanding (Sandars, 2009). The ability to reflect on one's own performance is regarded as crucial for personal and professional development (Borgstrom et al., 2016). Reflection encourages students to think more deeply about their role as a physician (Borgstrom et al., 2016), foster professional growth and patient care skills (Shapiro et al., 2006; Sandars, 2009). Recent research shows that written reflection about difficult patient interactions allow students to explore emotions, motivation and identity (Steinauer et al., 2019).

This article reports on the assignment's design based on educational principles, its implementation and the evaluation with students and teachers. The evaluation sought to answer the following question: How do students and teachers evaluate an assignment in which students communicate with a chronically ill patient about the four (physical, psychological, social and spiritual) dimensions of care, provide each other with peer feedback and reflect?

## Methods

### Approach

A Design-Based Research (DBR) approach was used. This methodology revolves around the design of education, based on both theoretical principles or design guidelines and the input of various stakeholders. Research that uses the DBR methodology must meet the five following conditions (Dolmans & Tigelaar, 2012): Firstly, the intervention should be implemented in a real-life setting where learning normally takes place. In this study, we implemented the learning assignment in an internship. In this real-life setting, students encounter chronic patients and sometimes palliative care patients. Secondly, the DBR methodology requires that various stakeholders should be involved. This assignment was developed by a team of instructional designers, teachers, educational researchers, and practitioners. Thirdly, the design of the intervention has to be based on theoretical principles. This intervention is based on the principles of authentic tasks, peer feedback, and reflection. Fourthly, the DBR methodology requires continuous cycles of design, evaluation, and redesign. In this research, we evaluate the intervention to redesign it. And lastly, it should include a mixed methods evaluation. In this study, a concurrent triangulation mixed methods was applied (Hanson et al., 2005), evaluation methods were a questionnaire, focus groups with students, interviews with teachers, and an analysis of reflection reports.

## Setting

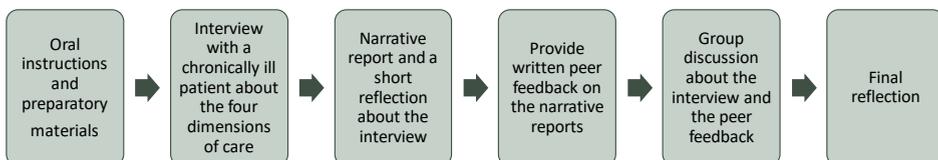
The undergraduate curriculum in Medicine in the Netherlands covers 6 years divided into two parts. The first 3 years form the Bachelor's degree and the last 3 years are the Master's degree that consists largely of internships. At Maastricht University, the internship in Neurosciences is scheduled into the fifth year of the curriculum. It is a 20-week internship covering four medical disciplines: ophthalmology, otolaryngology, neurology and psychiatry. It allows students to encounter patients living with one or more permanent limitations as a consequence of a chronic or incurable illness. The students meet every week, during in-house sessions, to discuss theory and experiences. The new assignment was placed on the agenda for three of these sessions. Every 2 weeks, there is a new group of students starting this internship.

## Assignment

### *General description*

First, students were asked to study the preparatory materials consisting of literature on the four dimensions of care and a topic list with questions that students may use during the interview. Either alone or together with a fellow student, the student then interviewed a patient with a chronic condition, focusing on the four dimensions of care. Next, the student was asked to write a narrative report and a brief reflection on the interview, describing the way the patient dealt with the condition or illness related to each of the four dimensions. Each student discussed their interview with the group in the in-house session. They also provided peer feedback on the reflection reports of two fellow students. At the end of their internship, students wrote a final reflection. The interview with the patient could take place in either a clinical or home setting. As for the interviewee, the student asked a patient they had met during their internship for an interview (see Figure 5.1). The assignment was designed on the basis of three educational principles: it was an authentic assignment, in which the students provided peer feedback and reflected on their own experiences.

**Figure 5.1** The assignment.



### *Authentic assignment*

Each student interviewed a real patient they had met during their internship. The students were encouraged to conduct the interview in such a way that optimal attention was paid to the four dimensions of care. To help them, the students received a list of example questions, such as “What impact do you believe your illness has on your future?”

### *Peer feedback*

Students gave peer feedback in the form of assessing two narratives and reflection reports from fellow students and received peer feedback from two fellow students themselves. Peer feedback was discussed in the weekly in-house sessions that are organized as part of the internship.

### *Reflection*

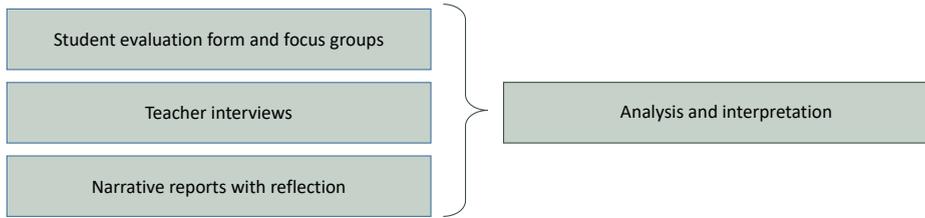
Students were encouraged to reflect on their own interview and their personal values and beliefs with regards to the four dimensions of care, in a reflection report. The agendas for the weekly in-house sessions included the necessary time for subsequent discussion and joint reflection, under the supervision of a teacher. By the end of their internship, they wrote a final reflection report.

## Participants

A total of 30 students completed the questionnaire and participated in the focus groups, 24 of whom also gave permission for analysis of their reflection reports. A total of 50 students had been invited to participate, 12 of whom declined, and 8 were excluded when it became clear that they came from a different stream in the Bachelor degree which included a similar (but now cancelled) assignment. The 30 participating students were divided into 4 focus groups. Their average age was 23 (SD=1.46), and 19 students were female. In addition, three participating teachers were interviewed.

## Instruments

This study used concurrent triangulation mixed methods (see Figure 5.2) to validate the findings generated by each method through evidence produced by the other methods (Kroll & Neri). Two groups of stakeholders were asked to participate in the evaluation: students and teachers. The students were asked to complete a short questionnaire and participate in the focus group (FG) in which the assignment was evaluated extensively. The teachers were interviewed. Furthermore, the students’ reflection reports were examined in order to analyse the topics discussed.

**Figure 5.2** The applied concurrent triangulation mixed methods.

### *Student evaluation form*

Students completed a questionnaire with 17 items about the assignment on a five-point Likert scale (range: 1 =totally disagree; 5 =totally agree). The questionnaire was developed by the researchers JP and DV. The questionnaire was developed by the researchers JP and DV. The items were based on the educational principles used in this study (authentic learning, peer feedback, and reflection). After discussing with the research team, some of the items were reworded. A question regarding the final reflection was removed from the questionnaire; the students could not answer this question because the questionnaire preceded their final evaluation. The questionnaire was divided into four parts: authentic task, the four dimensions, peer feedback, and reflection. It also included two open questions: “What did you find most valuable about the assignment?” and “What did you find least valuable about the assignment?”

### *Student focus group*

In the focus groups, the students discussed the assignment and supporting resources using a semi- structured interview guide (see Additional File 5.1). The questions concerned the students’ experiences with regards to the assignment, such as “How did you experience interviewing a real patient about the four dimensions, what worked well and why, what worked less well and why?”, “How did you experience the group reflection/peer support?” and “How did you experience to be a provider of peer feedback?”

### *Teacher interviews*

Semi-structured interviews (see Additional File 5.1) were used for the teacher evaluations. The questions concerned the teachers’ experiences with regards to the assignment, such as “How did the teachers experience the communication assignment?” and “Did the students learn from these assignments?”



### *Reflection reports*

The researchers inspected the reflection reports written by the students about their interviews. The analysis focused on the subjects the students had included in their reports, for example, to what extent students had addressed the four dimensions of care. These analyses were only used for the study and not for the assessment of the student.

### Procedure

In the first in-house session, the assignment was explained and the study was introduced to the students. The FG meetings were held directly after the last in-house session. A week before the FG meetings, the students were asked to participate by an email sent from the first researcher (JP). The information letter was added to this email. Prior to the study, the participating students gave their written consent. Patients gave their consent to the interview with the students. The students anonymized the patients in their reports. Thereafter, the student reports were anonymized for the researchers. At the beginning of their FG meeting, the students were asked to complete the questionnaire before the actual discussion began. Each FG consisted of 6–8 students who met for a maximum of 45 min. The students were also asked whether the researchers were allowed to inspect their reflection reports. Their permission was also obtained through the informed consent form. The teachers were evaluated through individual interviews. They were invited by an email that included the information letter. The interviews took no more than 45 min.

### Analysis

For the questionnaire, SPSS 21.0 was used to obtain descriptive results. The mean scores per item (N= 17) were computed across all students. For the qualitative part, the data analysis was supported by Atlast.ti. The focus group meetings, interviews and reflection reports were analysed based on a thematic analysis, taking into account the step-by-step plan of Brooks and colleagues (Brooks et al., 2015). Researchers JP and DV familiarised themselves with the data. They were both involved in the focus group meetings and read the transcripts. Preliminary coding of the data started with determining the a priori themes. These themes were based on the research question (authentic learning tasks, the four dimensions, peer feedback, and reflection). Two focus group transcripts were read and independently coded by researchers JP and DV. They discussed their findings, divided the themes into meaningful clusters and created an initial coding template. This initial template was subsequently applied to the last focus group transcript and the three interview transcripts, independently by researchers JP and DV. The researchers discussed and finalised the template and applied it to the full data set. The reflection reports were then coded with the same coding scheme.

## Reflexivity

This assignment was developed by a multidisciplinary group that included teachers, educational theorists, researchers and physicians. Researchers JP and DV coded and analysed the data. JP is a doctoral student with a background in psychology and educational research. DV is an educational theorist with extensive experience in educational research. Due to the background of these two researchers, the analysis focused primarily on the students' learning process and the design principles. Both researchers co-designed the assignment. Researchers DD, MvdB and FW contributed ideas and helped shape the analysis. DD is an educational scientist and has expertise in instructional design. MvdB is an internist and medical consultant palliative care. FW is a researcher and former general practitioner with expertise in both palliative care as well as medical education. The different perspectives have enhanced the strength of this paper. But the disparate backgrounds also may have influenced our views on educational principles and the assignment itself.

## Results

### Evaluation form

The students scored the assignment on 17 items (Table 5.1). The scores varied between 3.00 (SD=0.76) and 4.63 (SD=0.49) (scale 1–5).

**Table 5.1** Students' views on the new assignment (N=30) (Scale 1–5; 1=Totally disagree; 5=Totally agree).

	Question	Mean score (SD)
Authentic task	The assignment gave me more insight into the influence of the four dimensions on the care (to be) provided	3.27 (0.77)
	The content of the assignment was in keeping with my prior knowledge and skills.	4.03 (0.67)
	The assignment encouraged me to think about my future role as a physician. I found it instructive to interview a real patient.	3.50 (0.82) 3.80 (0.93)
Four dimensions	I dared to discuss the four dimensions of care with the patient.	4.20 (0.55)
	I talked to the patient about the physical dimension	4.40 (0.86)
	I talked to the patient about the psychological dimension	4.57 (0.56)
	I talked to the patient about the social dimension.	4.63 (0.49)
Peer feedback	I talked to the patient about the spiritual dimension.	3.43 (1.19)
	I found it instructive to give peer feedback.	3.13 (0.68)
	I found it instructive to receive peer feedback.	3.40 (0.72)
	I trust the peer feedback I received from my fellow students. I found it useful to read the reports by my fellow students.	4.27 (0.69) 3.73 (0.64)
Reflection	I found it instructive to write the interview report.	3.20 (0.81)
	I found it instructive to discuss my interview with the patient in the group.	4.00 (0.70)
	I learned a lot from the "4D interview" assignment.	3.40 (0.81)



The average scores for the items about the authenticity of the assignment were 3.50 or higher, with the exception of the item about the influence of the four dimensions on care, which scored an average of 3.27 (SD=0.77). The students specified that they discussed the four dimensions during the interview. The physical, psychological, and social dimensions all scored higher than 4.00; only the spiritual dimension received a lower average score of 3.43 (SD=1.19).

The scores for providing and receiving peer feedback ranged from 3.13 (SD=0.68) to 3.40 (SD=0.71). Students trusted the peer feedback they received, with an average score of 4.27 (SD=0.69). The scores for reflection varied between 3.20 (SD=0.81) and 4.00 (SD=0.70). The learning effect of the assignment scored 3.40 (SD=0.81).

In the open questions, students stated that they found it most valuable to have more time with a patient than they have as a (trainee) practitioner. They considered the influence of the illness on the patient's daily life the most informative. The students valued that they had gained more knowledge about the four dimensions of care. They considered reflection valuable and also discussing peer feedback in the group. Providing written peer feedback was found least valuable, as it was time-consuming and did not render any new insights.

## Focus group meetings with students and interviews with teachers

### *Authentic task*

Interviewing a real patient was perceived as beneficial by both the students and teachers. Students found it interesting to hear the patient's story from the patient themselves or, in some cases, from the patient's partner. A number of students explicitly stated that they had discovered or tried new communication strategies. The students believed that they managed to discuss all four dimensions using the topic list they received. The spiritual dimension was felt to be the most difficult to question. The students believed that there was quite some overlap between dimensions, especially where the social dimension was concerned. Some students stated that they were not used to talking about the spiritual dimension or that the patient did not really want to talk about it. According to the teachers, however, the students addressed all of the four dimensions, but had as yet not dared to probe and look for depth. Teachers recognise this in the way students reported on the patients' coping with their illness: almost all of the patients turned out to have a positive outlook on life; while some said their condition did not cause them much discomfort. This led the teachers to conclude that the students had not gone into enough depth. Students, on the other hand, claimed that this was a consequence of selection. Most had opted for patients with an open and easy demeanour and, thus, for patients with a positive outlook on life.

“This makes you genuinely curious. If you have someone sitting opposite you, then, well, you are interested in that story. And if a simulation patient then says something, well, then you do it because you have to.” - Student, focus group 1.

“I did notice that some students found it difficult to ask probing questions about certain things because then, because they thought, well, that is too sensitive, but that they then sometimes also had the idea of yes, that they would er ... that it would be unprofessional to ask about certain matters.” - Teacher 2.

“That they almost always say, like: ‘Well, er... those patients, what strong people they are, how well they deal with those... with those complaints’. I think that is what many do. And that disappoints me. That, that actually shows me that they don’t adequately probe and seek depth.” - Teacher 1.

“You do select patients, naturally. You do not go for the most ... say the most grumpy, the one you have no connection with at all, you will not interview that one. For ... so you pick people who are a bit up your alley, whom you believe: oh, this is one I can ask things. Not someone who has just been diagnosed and is in a very foul mood.” - Student, focus group 4.

### *Peer feedback*

By reading each other’s reflection reports, the students saw more diversity in conditions, the influence on patients’ lives and the ways in which they coped. A number of students stated that reading the others’ reflection reports had taught them more about interview techniques. Both teachers and students found the group discussion/reflection the most valuable. The students enjoyed being able to ask each other questions, in terms of both content and the way in which the other person had conducted their interview. The teachers said that the group discussion allowed them to ask questions to encourage the students to reflect more deeply. Students found the obligation to provide written peer feedback unnecessarily time-consuming.

“Yes, by reading it you very much come across the diversity of chronic conditions. You also talk about it in the group, but you’re just a little more aware of it when you actually have to read a report that you, say, like, have to reflect on.” - Student, focus group 2.

“How other people experienced the interview. And they see or often face other bottlenecks in such an interview than the ones you may have encountered. And that’s interesting to talk about.” - Student, focus group 3.



### *Reflection*

Both the students and teachers considered reflection a logical and important part of this assignment. The students believed that reflecting after the interview makes sense, provided it was not required too often. The group reflection was found to be the most valuable<sup>4</sup>. The teacher stated that the students mainly reflected on surprising scenarios, particularly on the greater than expected influence of the illness on the patient's life and the way in which the patient coped with the illness in their daily life. The students reflected far less on the influence of the four dimensions on the care (to be) provided. Only a few students made the connection between the two.

"This [reflection] forces you to run through everything once again and categorise it a bit, like, what have I actually questioned until the last detail." - Student, focus group 2.

"On the unexpected findings, let me put it that way. Things they ... so they reflect on things they have heard which they realise they would not have heard in the doctor's office." - Teacher 1.

"Yes, I did think it did give, at least in the case of my patient, a clearer idea of what the patient's needs were with regards to the choice of treatment and so on. Something you normally skim over in a flash, so to speak." – Student, focus group 1.

'[Reflecting] feels a bit more like, say, a mere obligation now. Like: here we go. My response was: here we go again. Like I have to write again and you have to reflect on yourself and on your ... and on other conversations, and then a final reflection and ... that you are just reflecting to reflect, that is how it feels." - Student, focus group 4.

### Written reflections

All four dimensions of care were addressed in most reports, but the physical and social dimensions were typically the most extensively discussed, usually related to the impact of the illness on the patient's life. The spiritual dimension was least explored, although many students realised that, for many patients, meaning and purpose were bound up with the social dimension: the importance of being able to undertake activities with family or friends. Otherwise, the reflections mainly focused on the influence of the patient's illness on daily life, coping and experiences with the care system. Only a few made a link between the four dimensions, care provision and their own role as a (future) physician. The reports show that most students stuck to the topic list as the reports had the same structure.

"Living with the uncertainty that is so inherent in the illness has the same effect on life as many chronic illnesses. I think that this is the most important point that can be

concluded from this case; in the medical world, we tend to quickly focus on the physical limitations and somatic aspects of a chronic condition, and in a mild case as described above, quickly assume that the effect on the patient's life must be minimal as well." - Student 2C, quote from report.

"Reflecting on this interview, I can conclude for myself that I now go into the consultation hour very differently, for I can indeed mean something to these patients by, among other things, also paying attention to the emotional experience that the patient is going through." - Student 2 M, quote from report.

"I found it quite an experience to meet a patient I saw in hospital at home for a change. You immediately become aware that it creates a completely different atmosphere and also feels less like a patient-doctor relationship." - Student 2D, quote from report.

## Discussion

This assignment taught students to talk to patients about the four dimensions of care. In the focus group meetings, the students stated that they found the authenticity of the assignment, i.e. interviewing a real patient, instructive. The questionnaire and reflection reports confirmed this. Reading and providing peer feedback on each other's reports was considered valuable, especially when it came to the diversity of illnesses, the way that patients cope and communication techniques used in the interviews. The students considered reflection useful, especially in the group and provided that it was not too frequent.

Looking at the various components of the assignment, some aspects stand out. Firstly, in the focus group meetings the students said that they were generally quite satisfied with the way they conducted their interviews about the four dimensions, although they did find the spiritual dimension the most difficult to discuss. Other findings confirmed this: the spiritual dimension scored lowest in the questionnaire and was the least discussed dimension in the reflection reports. This corresponds to recent research that showed that also in the consultation room the spiritual dimension is the least discussed and it is experienced as the most difficult dimension. Both professionals and students attributed this to various obstacles such as too little time, discomfort and a lack of training (Pieters et al., 2019; Osório et al., 2017). Yet, medical students underline the importance of spiritual needs (Pieters et al., 2019; Limpawattana et al., 2019) and the skills to discuss meaning and purpose can be taught and acquired (Osório et al., 2017). In this study, students expressed that the difficulty in discussing the spiritual dimension lay in the fact that it is largely interwoven in the psychological and social dimensions. They were also not used to talking about it. The students did ask



what the patient considered important and what they felt to be 'a good day', as suggested in the topic list. The teachers believed that students did not always scratch below the surface and asked shallow questions. The students did not see it this way: they believed that the patients they interviewed managed to cope well with their illnesses so that there was not much depth to go into. It is indeed likely that the students selected patients with a (relatively) positive outlook on life and good coping mechanisms. However, it might also be that students are as yet not fully equipped to recognise when and how they should go into detail, and therefore require further training. Maybe they will be able to discuss the spiritual dimension in more depth when they learn more about it beforehand, i.e. about what exactly constitutes this dimension and how it is related with the other dimensions.

Secondly, there was a small discrepancy between the findings from the focus groups and the questionnaire when it came to receiving and providing peer feedback. In the focus groups, the students rated that providing peer feedback is more valuable than receiving it. This, however, did not emerge from the questionnaire. The students filled in the questionnaire directly before starting the focus groups. During the focus groups was a more in-depth discussion regarding this topic, which may have resulted in students changing their views. Therefore it is most likely that the focus groups results reflect a more representative view. This would also be in line with the literature that states that providing feedback leads to greater improvements than receiving feedback (Lundstrom & Baker, 2009; Mulder et al., 2014; Li et al., 2010). By providing peer feedback, students take an active, reflective role in learning (Patchan & Schunn, 2015). Furthermore, students develop problem-solving skills (Mulder et al., 2014) and learn the use of the assessment criteria, which they use to improve their own work (Mulder et al., 2014).

Thirdly, it appeared that the students found it beneficial to reflect, provided they did not have to do it too often. Although reflection is a useful tool, too much reflection creates resistance among students (Sandars, 2009). Furthermore, it can fail to achieve its objectives, when students have been conditioned to follow prescribed thought steps rather than engaging in truly reflective behavior (de la Croix & Veen et al., 2018).

Finally, it was striking that students pay a lot of attention to the relationship between the illness and the patient's daily life, whereas the relationship between the four dimensions and care remained unclear for most of them. This came to the fore in both the focus groups and the questionnaire. We did see a small group of students make this link in the reflection reports. They discussed how the dimensions might influence the patient's care plan. To safeguard the transfer to practice, students will have to learn to make this link. As future medical professionals, they should not only be able to discuss the four dimensions with the patient, but also translate the outcomes of the discussion into the care plan. Several factors may play a role as to why the students did not make this link. To begin with, the students stuck to the topic list, which did not include an explicit question concerning the four dimensions and care. Secondly, it may also be

that the teachers placed an emphasis on the way illnesses affect the patients' daily life, but put little focus on how they affect the care (to be) provided.

This study had some strengths and limitations. The implementation of the assignment in practice is a strong point: it shows that attention for the four dimensions of care can be integrated in internships. This also means, however, that it was examined in a specific context and that the results are affected by the design of this specific curriculum in a problem-based education system (Dolmans et al., 2005; Dolmans, 2019). The students involved in this study were already familiar with discussions, peer feedback and reflecting. The effectiveness of this assignment in a different context remains to be investigated. Secondly, we used triangulation of different data sources: the results were based on the experiences of the students, teachers and the inspection of reflection reports. The researchers did, however, not observe the interviews between the students and patients themselves. Thirdly, students interviewed chronically ill rather than palliative patients. The advantage of this is that students meet many chronically ill patients in this internship and it was not difficult for them to find patients that were willing to be interviewed. This means, however, that most students did not talk to palliative care patients. Thirdly, this assignment comprised one extensive assignment. Proper education in chronic and palliative care requires that the associated topics be integrated into the curriculum and discussed when relevant (Boland et al., 2019). In order to prevent the training from becoming too generalised (Lloyd-Williams & Macleod, 2004), a learning programme should be developed. For example, prior to this assignment, students could learn more about the four dimensions, and the spiritual dimension in particular. A subsequent assignment could then focus on teaching the students to make a clearer link between care and the four dimensions. Future research should focus on the longitudinal integration and evaluation of learning activities focused on communicating with patients about the four dimensions of care in the entire curriculum.

This study contributed to the knowledge about integrating attention for palliative care in the undergraduate curriculum. Due to the format, this assignment can be implemented across existing internships with relatively little extra time and effort, taking into account the educational principles and a number of key elements and. The first is that enough time is allowed to discuss the assignment in the groups. Both the students and teachers considered the group discussions to be very valuable. There should also be a clear topic list with possible questions to ask the patient, especially if it is the first time that the students talk to patients about the four dimensions of care. It provides a foothold and ensures that the students dare to discuss the dimensions. Furthermore, it is important that teachers take their own educational institution into account and consider to what extent students are familiar with the four dimensions, reflection and peer feedback.



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## Additional File 5.1 Interview guide

### Semi-structured interview guide for students

#### Introduction

- Please introduce yourself (name; age)

#### Transition question

1) How did you experience the assignment around the four dimensions and the associated education in general?

*Thank you. The assignment has been designed based on certain educational ideas and principles. I would like to elaborate on this with you.*

1) How did you experience interviewing a real patient about the four dimensions of care? What worked well and why? What worked less well and why? What did you learn? (Authentic learning task)

2) How did you experience writing the narrative report and your personal reflection on this conversation? What was instructive / less instructive and why? (Reflection)

3) How did you experience GIVING peer feedback? What was instructive / less instructive and why? (Peer feedback)

4) How did you experience RECEIVING peer feedback? What was instructive / less instructive and why? (Peer feedback)

5) How did you experience the group reflection / Intervention? (Reflection)

6) How did you experience the final reflection? (Reflection)

*Finally,*

1) Are there other things that are relevant to discuss, and that have not yet been addressed?

*Thanks.*

## Semi-structured interview guide for teachers

### Introduction

- Introduce yourself (name; function)

### Transition question

- 1) How did you experience the assignment around the four dimensions and the associated education in general?

*Thank you. The assignment has been designed based on certain educational ideas and principles. I would like to elaborate on this with you.*

- 2) What is your impression of the conversations that students have had with a real patient about the four dimensions of care? To what extent were the four dimensions covered in the individual interview reports? What worked well and why? What worked less well and why? What do you think that students have learned from it? (Authentic learning task)
- 3) What did you think of the depth of the students' individual reflection reports? To what extent did you see a profound critical dialogue in which the student reflects and comes up with alternative approaches? (Reflection)
- 4) How did you experience the group reflection / intervision? To what extent have the four dimensions been discussed and how profound was the d? (Reflection)
- 5) How was providing the peer feedback experienced? (Peer feedback)
- 6) How was accepting the peer feedback perceived? (Peer feedback)

*Finally,*

- 7) Are there other things that are relevant to discuss, and that have not yet been addressed?

*Thanks.*







# CHAPTER 6

**General discussion**

## General discussion

With a growing elderly population and advanced medical insights, the need for palliative care is on the rise (Hasson et al., 2020; Knaul et al., 2018; Sleeman et al., 2019). Consequently, palliative care is becoming an indispensable part of physicians' range of duties. In the Netherlands, palliative care already forms an integral part of regular healthcare, meaning that any healthcare professional should be able to provide adequate palliative care (Cocquyt et al., 2017), such as managing basic symptoms and aligning treatment with patients' goals (Brinkman-Stoppelenburg et al., 2016), whenever needed. As palliative care delivery typically requires a holistic and interdisciplinary approach, the provision of such care poses complex challenges.

Considering this, it is important that medical students have acquired the necessary knowledge and skills *before* entering the professional setting (Barclay et al., 2015). In order for physicians of all specialties to feel competent and confident in caring for palliative care patients (Bailey & Cogle, 2018), palliative care education should be part of undergraduate medical curricula. Several studies, however, have reported that such education is currently inadequate (Billings & Block, 1997; Gibbins et al., 2011; Lloyd-Williams & Macleod, 2004) and not well-integrated into curricula due to minimal consensus about what to teach (Lloyd-Williams & Macleod, 2004) and because clinical experiences are primarily elective (Billings & Block, 1997). Other studies have pointed out that professional healthcare workers have limited to no knowledge about the principles and practices of palliative care (Connor, 2020) and lack confidence in providing palliative care (Chen et al., 2015; Eyigor, 2013; Storarri et al., 2019; Weber et al., 2011).

The present dissertation aimed to understand and improve palliative care education in Dutch undergraduate medical curricula. To this end, we first sought to identify learning needs and education gaps, the outcome of which allowed us to develop a competency framework. We then focused on developing, implementing, and evaluating a coherent set of learning activities related to palliative care for inclusion in the medical curriculum.

To achieve these goals, we formulated the following main research questions:

1. What are undergraduate students' views on the importance of education in palliative care, their opinions on the education they received, and their (self-reported) confidence in and knowledge of palliative care? (Chapter 2)
2. Which palliative-care-related competencies should, according to palliative care experts, junior doctors, experienced physicians, nurses, and educators, be addressed in undergraduate medical curricula, and at which level? (Chapter 3)



3. How do medical students, teachers, and educational scientists evaluate a set of coherent learning tasks focusing on the spiritual dimension of palliative care? (Chapter 4)
4. How do students and teachers evaluate the assignment in which a student communicates with a chronically ill patient about the four dimensions of care (physical, psychological, social, and spiritual), writes a report about it, gives and receives peer feedback, and reflects on it? (Chapter 5)

## Main results and conclusions

### Learning needs

To gain insight into students' learning needs, we conducted two studies. First, in Chapter 2 we explored the views of medical students from four universities on the importance of palliative care education, on the education they received, and their confidence in and knowledge of palliative care. The results showed that these students viewed palliative care as an important subject that should be taught in undergraduate medical education. Although communication with palliative care patients is at present not a part of their communication skills training, students flagged it as a topic they found especially important. As their education focused mainly on the physical dimension of care, students felt particularly ill-prepared to raise and discuss the psychological, social, and spiritual dimensions. They reported to have little confidence and to lack the knowledge necessary to provide palliative care. Yet, they were satisfied with their education on ethics in end-of-life care, which is not surprising, as end-of-life care is a hotly debated topic in the Netherlands.

Second, in Chapter 3 we conducted a Delphi study to identify students' learning needs as perceived by stakeholders from the work field. More specifically, we asked palliative care professionals, physicians, nurses, educators, and junior doctors which palliative-care-related competencies they felt needed addressing in undergraduate medical curricula, and at which level. Based on the literature on competencies in palliative care, we created a competency list with key and enabling competencies for stakeholders' perusal. The first major finding from this study was that there was a high level of consensus on competency acquisition among panel members. They agreed that all the key and enabling competencies proposed should be included in the undergraduate medical curricula and that these should be attained at a practical level (i.e., in a simulated or practice setting under close supervision). The second major finding was that stakeholders rated communication, personal-development, and well-being skills at the highest level, meaning that they believed that junior doctors should develop these competencies in the workplace under close supervision. The findings of the two said studies underscore the relevance of including palliative care education in

undergraduate medical curricula. Based on the views of students and stakeholders, we developed an educational framework.

## Development, implementation, and evaluation

Based on the results of Chapters 2 and 3, we developed educational materials addressing communication skills and the four dimensions of palliative care to help improve medical education programs. These materials consisted of a coherent set of learning tasks designed to help students communicate about the four dimensions of palliative care, with a particular emphasis on the spiritual dimension. Consistent with instructional design guidelines, these learning tasks were based on educational principles of authentic and reflective learning, peer feedback, and curriculum integration. In Chapter 4, we presented these learning tasks to medical students, teachers, and educational scientists with the request to evaluate them. Stakeholders were generally positive about the learning tasks, feeling that they were designed in line with contemporary instructional design guidelines. In their view, the authentic learning tasks offered in the form of paper and video cases, simulations, and real patients were relevant to the profession and, therefore, instructive. The learning tasks gave students a realistic view of what they could expect to encounter in the workplace. Furthermore, participants felt that the tasks encouraged reflection on the four dimensions of care. All held the view that such tasks should already be introduced in the bachelor's phase and continue to be offered in the master's phase. Most agreed that such integration into the curriculum should be achieved vertically as well as horizontally throughout the whole undergraduate program.

In Chapter 5, we implemented the last assignment of the set of learning tasks in an internship and evaluated its outcome. The aim of the assignment was for students to learn how to talk to patients about the four dimensions of care. They did so by talking with a chronically ill or palliative patient about the four dimensions of care during the internship, writing a reflection report and giving peer feedback on this report and on the patient narratives of two students. As part of their internship, students returned to campus for weekly sessions to discuss feedback with their peers. Central to the study was the implementation of the task and its evaluation by students and teachers. Both groups regarded the assignment as instructive, teaching students to interview a real patient and to read and provide feedback on each other's reports. They generally perceived reflection, peer feedback, and group discussion under the guidance of a teacher as useful. The assignment also helped students to understand communication techniques, the diversity of illnesses, and the way patients cope with their situation. Finally, both groups highly valued the authenticity of tasks, whereas students also appreciated the reflective component, especially in the group and as long as it was not too frequent.



## General discussion

In digesting the outcomes of all separate studies included in this dissertation, we identified three main discussion points that stood out, which will be discussed in the next paragraphs.

### Importance of palliative care education

In the course of this PhD project, a variety of stakeholders participated in the studies. It is interesting to note that participants talked about, discussed, or integrated palliative care education with great enthusiasm in all studies. We did not expect the topic to meet with such enthusiasm for two reasons. First, as curricula are already packed, introducing a new topic can provoke resistance. Second, we expected palliative care experts to attach more importance to palliative care education and to demand higher levels of achievement than would other stakeholders. From Chapter 3 we learned, however, that this was not the case, suggesting that the importance of palliative care education is becoming increasingly appreciated.

### Integration of palliative care education

Introducing new educational materials into existing curricula that are already packed is not easy. When it comes to implementing palliative care education, the main question that arises is whether it should be integrated throughout the curricula or be offered as a stand-alone module. Developing a new course that covers all the palliative care competencies might seem like the most straightforward solution. From an educational perspective, however, it would be more beneficial to integrate palliative care activities and materials into different courses longitudinally. The findings from this dissertation clearly point to the benefits of integrating palliative care education both horizontally and vertically into the curriculum. Integration is coined “horizontal” when it takes place across disciplines within a specified period and “vertical” when it happens across time (Brauer & Ferguson, 2015). When both types of integration are combined, we speak of “spiral” integration, which allows the learner to progress “to more complex versions” of the educational materials (Brauer & Ferguson, 2015). To prevent training from becoming too generalized or too fragmented, it is important to take a systematic approach and keep an overview of what is covered where. The coherent set of learning tasks regarding communication presented in Chapter 4 is an example of how to address competencies from simple to complex. These tasks were specifically designed to be integrated into different parts of the curriculum. It is important that students and teachers are aware of the links between different elements and recognize links to other educational materials.

## Early introduction of palliative care education

A recurrent question regarding the integration of palliative care education is when to introduce it. Throughout this PhD research that formed part of the Pasemeco project, some stakeholders suggested that palliative care may be less suitable for first- or second-year students as it can be an emotional subject. Nevertheless, most stakeholders, students included, did not object to implementing palliative care education at the beginning of the curriculum. By introducing palliative care education early in the program, students learn that palliative care is part and parcel of regular healthcare. We would therefore argue for covering palliative care from the start, provided students are offered a safe environment to discuss their experiences and emotions, the group discussions are guided by teachers, and that they take place within fixed groups.

## Strengths and limitations

The research within this dissertation has some strengths and limitations. A first strength is that we involved a broad range of stakeholders in the different studies, so that our findings are not solely based on the opinions of experts in palliative care. This resulted in a large support base and a network of people motivated to increase attention to palliative care in undergraduate curricula, including curriculum coordinators. A second strength is that we combined theory and practice by grounding our educational materials in theoretical educational principles, such as authentic learning, reflective learning, peer feedback, and curriculum integration, and systemically evaluating them in practice. A third strength is that we developed a coherent set of learning tasks designed to help students communicate about the four dimensions of palliative care, with a particular emphasis on the spiritual dimension. In doing so, we used the Design-Based Research framework which allowed us to go through subsequent cycles of analysis, design, and evaluation. We developed the learning tasks consistent with instructional design guidelines and invited medical students, teachers, and educationalists to review them. We implemented one task as an intervention within an existing curriculum which allowed us to gather valuable evaluative information and to offer guidelines about how to implement similar educational interventions.

A limitation of this dissertation is that we did not involve patients in the studies we conducted. However, patients were included within the Pasemeco project in other ways. For the preparation of the study materials, we asked patients and their families which competencies healthcare students needed to acquire to be able to provide adequate palliative care. We documented the results of this study in an internal report which subsequently served as a foundation for defining competencies for the second



study (Chapter 3). Furthermore, two patient representatives were involved in an advisory board throughout the project and they provided input on the educational materials used for the studies reported in Chapters 4 and 5. A second limitation is that the content and organization of palliative care are culturally bound and differ across countries and cultures. Although the educational principles are transferable, the definition of competencies and the educational materials may have to be adapted. A final limitation is that the students who participated in the evaluation studies were familiar with Problem-Based Learning as well as with peer-feedback and reflection activities. Consequently, they may have been more used to expressing their opinions and having discussions with their peers than other students. Before implementing palliative care education, researchers and teachers should be aware of these inter-university differences.

## Further research

We welcome future research that also explores patients' perspective on the educational materials. Their perspective could reinforce the authenticity of the tasks that students and teachers so valued. More specifically, such research could focus on how patients evaluate the content of these materials or on how to involve patients in teaching and learning. Another important focus might be to explore the usability of the said materials in other contexts, for instance by extending the range of educational materials, implementing them in medical curricula with different educational systems or within different cultures, and evaluating their outcomes. In such process, the educational materials, including teachers and students' manuals, would have to be adapted to facilitate a smooth implementation in different contexts.

## Practical implications

The findings of this dissertation have several important implications for future practice. Regarding the implementation of palliative care education, we recommend the following:

First of all, we recommend that palliative care education be integrated into the undergraduate medical curricula both horizontally and vertically. From an educational perspective, we know that integration throughout the educational program enhances students' learning, because it contextualizes knowledge and skills and improves their transfer to practice (Vandewaetere et al., 2014). This method of integration was also preferred by the stakeholders in our studies. For such integration to be successful, we suggest taking the following steps. The first is to address palliative care early on in the

program, so that it becomes normalized as “part of the package” rather than regarded as some special kind of care. Second, the educational materials should be cast in a flexible format, so that they can be implemented across existing curricula with relatively little extra time and effort. Third, since palliative care education competencies are shared across many specialties, teachers from different specialties should collaborate; interdisciplinary collaboration enhances integration and ensures university support. Lastly, we need continued effort to prevent the educational materials from becoming too fragmented when implemented. Appointing a staff member to keep an overview of where and how palliative care is addressed in the curriculum might offer a solution.

Our second recommendation is to use the competency framework as a guideline when developing and implementing the educational materials. The Dutch national blueprint for undergraduate medical curricula, the “*Raamplan*,” does not describe any clear end qualifications (Van de Pol et al., 2020). It merely specifies that a junior doctor should be able to provide palliative care, without defining how or at what level. The framework fills this gap by offering guidelines on these end qualifications. The university and its teachers are then free to decide where, when, and at what level to implement palliative care education.

The last recommendation is to apply educational principles of authentic learning, peer feedback, and reflection, for they can enhance palliative care learning. Authentic learning materials were found instructive by students and teachers and they enhanced students' commitment, so we strongly recommend their use. Students are eager to learn when they see how their education relates to their work field. Learning can be rendered authentic by using realistic patient cases, doctors with real-life cases, or real patients.

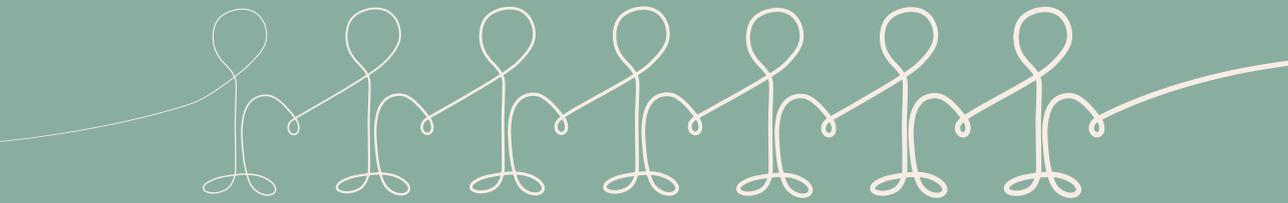


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# ADDENDUM



**English summary**  
**Nederlandse samenvatting**  
**Impact chapter**  
**Acknowledgements**  
**About the author**  
**SHE dissertation series**  
**ICO dissertation series**



## English summary

### Chapter 1

There is a growing need to include palliative care in undergraduate medical curricula. Palliative care is a basic human right, which becomes necessary in the face of a variety of life-threatening or limiting diseases. Central to the provision of holistic palliative care are the four dimensions of care: physical, psychological, social and spiritual. In the Netherlands, palliative care is an integral part of regular healthcare, rather than a distinct medical specialty. Physicians, irrespective of specialism and institution, are required to provide adequate palliative care whenever necessary. Palliative care education should thus be a part of the undergraduate medical curricula. Although the need for palliative care has increased, medical schools have only recently started to pay attention to this topic within the undergraduate curriculum. International research has shown that medical students feel unprepared in their provision of palliative care. To develop palliative care training that is aligned with the perspectives and needs of undergraduate medical students, it is important to identify their learning needs and pinpoint what competencies are required for the professional field, how these competencies can be best acquired, and how palliative care education can be integrated into the undergraduate curriculum.

This dissertation addresses four research questions:

1. What are undergraduate students' views on the importance of palliative care education, their opinions on the education they have received and their (self-reported) confidence in and knowledge of palliative care? (Chapter 2)
2. Which palliative care-related competencies should, according to palliative care experts, junior doctors, experienced physicians, nurses and educators, be addressed in undergraduate medical curricula and at which level? (Chapter 3)
3. How do medical students, teachers and educational scientists evaluate a set of coherent learning tasks focusing on the spiritual dimension of palliative care? (Chapter 4)
4. How do students and teachers evaluate the assignment in which a student communicates with a chronically ill patient about the four dimensions of care (physical, psychological, social and spiritual), writes a report on it, gives and receives peer feedback and reflects on it? (Chapter 5)



## Chapter 2

In the first study in this dissertation, we investigated undergraduate students' views on the importance of palliative care education, their opinions on the education they have received and their (self-reported) confidence in and knowledge of palliative care. 222 final-year medical students in four Dutch medical faculties were surveyed. The results showed that students consider palliative care education relevant, with a particular emphasis on training in patient-oriented care and communicating with the patient. These topics are not adequately covered in current Dutch medical curricula. Students generally felt underprepared in the provision of palliative care and in discussing the psychological, social and spiritual dimensions of care. The knowledge test revealed that only 48% of students answered more than half of the questions correctly. However, students were satisfied with their education in ethics during end-of-life care, which was reflected in their remarkably high scores in the ethics questions on the knowledge test. This finding fits the Dutch context, where there is an ongoing national debate on end-of-life care.

## Chapter 3

Based on the literature and the results of the first study, we curated a list of six key competencies and corresponding sub-competencies. We asked five groups of stakeholders from five different professional backgrounds (i.e., palliative care professionals, physicians, nurses, educators and junior doctors) which competencies and sub-competencies should be addressed in undergraduate medical curricula and at which level. This resulted in a national palliative care competency framework for undergraduate medical curricula. A consensus was reached after two rounds of ratings. The results showed high levels of consensus within and between stakeholder groups who confirmed that acquiring theoretical knowledge alone is not sufficient. Students must practice palliative care competencies at a practical level in a simulated setting or under close supervision. Overall, communication, personal development and well-being scored highest in the skills that should be emphasised. Junior doctors should be able to perform these competencies in the workplace under close supervision. Advance care planning scored the lowest, indicating performance in a simulated setting.

## Chapter 4

We developed a coherent set of eight learning tasks, which taught students how to communicate about the four dimensions of palliative care, with a particular focus on the spiritual dimension. The learning tasks were developed in accordance with instructional design guidelines and educational principles, namely authentic learning, reflective learning, peer feedback and curriculum integration. We asked students, teachers and educational scientists to evaluate the learning tasks and materials. Focus

group and individual interviews were conducted. The stakeholders were generally positive about the tasks and materials as learning was clearly organised around authentic learning that was relevant to the future profession. In addition, the learning tasks encouraged students to reflect not only on the four dimensions of palliative care, but also on their personal values. All of the participants indicated that the program should be introduced during the Bachelor's, and the majority agreed that it should be integrated vertically and horizontally throughout the undergraduate program. However, there was debate as to the optimal moment to introduce the program. Participants suggested giving more attention to cultural diversity within the tasks and learning materials. They also stressed the importance of student and patient safety, as palliative care is an emotionally charged subject.

## Chapter 5

One of the learning tasks was implemented within a fifth-year internship where medical students interviewed a chronically ill or palliative care patient about the four dimensions of care. They then wrote a report and a critical reflection of their interview. They both provided and received peer feedback on the reports and discussed their experiences within their group. The students also answered a questionnaire and participated in a focus group. We analysed their reports and reflections and interviewed the teachers involved.

Both students and teachers valued the assignment, although most students interviewed a chronically ill patient instead of a palliative care patient. The assignment taught students to talk to patients about the four dimensions of care. During the focus group meetings, students stated that they found the authenticity of the assignment (i.e., interviewing a real patient) instructive. The questionnaire and reflection reports confirmed this. They also considered reading and providing peer feedback on each other's reports as valuable. The assignment gave them knowledge of communication techniques and helped them to see the diversity of illnesses and the ways patients cope. Students found reflection useful, especially in the group setting, as long as it was not too frequent. In their reports, students emphasised the relationship between the illness and the patient's daily life, but rarely reflected on the potential relationship between the four dimensions of care and the care decisions made. This study confirmed that medical students can practice talking about the four dimensions of care with a chronically ill or palliative patient during their internship, although they find the spiritual dimension the most difficult to discuss. This learning task was received positively by students and teachers; hence, it can be implemented in existing internships with relatively little time and effort needed.



## Chapter 6

In the general discussion, we explained the main results and conclusions and presented three discussion points. First, the importance of palliative care education was highlighted throughout this dissertation. In all of the studies conducted, the participants' enthusiasm in discussing and implementing palliative care education was high, suggesting an increasing recognition of the importance of palliative care education. Second, most stakeholders preferred the implementation of palliative care education throughout the curriculum, as opposed to a stand-alone module. Third, a recurrent discussion point was the question of when to start palliative care education in the medical curriculum. The majority of stakeholders favoured implementing palliative care education at the beginning of the educational program, provided that a safe environment for students is established.

The first main strength of this dissertation is the broad range of stakeholders that were involved in the different studies. Second, is the combination of theory (i.e., educational principles) and practice throughout the dissertation. This combination can be found in the competency framework and in the educational materials. Third, is the flexibility of the educational materials we developed. They are based on overarching educational principles and teachers can adapt them to fit their curriculum, the level of their students and other specific contexts. We provided guidelines on how to implement certain educational interventions, which we based on the last two studies. The limitations of this dissertation are related to the exclusion of palliative care patients as stakeholders and the generalisability of the educational materials. Further research is needed to explore patients' perspectives and the implementation and evaluation of the educational materials in universities that have different cultures and educational systems.

Our findings have various practical implications for the implementation and evaluation of palliative care education in the undergraduate medical curricula. These practical implications were addressed in the discussion chapter.

# Nederlandse samenvatting

## Hoofdstuk 1

Er is een groeiende vraag om onderwijs over palliatieve zorg op te nemen in de geneeskunde opleidingen. Patiënten hebben recht op palliatieve zorg, wanneer dat noodzakelijk wordt in het licht van een levensbedreigende of zeer beperkende ziekte. In het verlenen van holistische palliatieve zorg staan de vier dimensies van zorg centraal: de fysieke dimensie, de psychologische dimensie, de sociale dimensie en de zingevingsdimensie. In Nederland is palliatieve zorg een regulier onderdeel van de integrale basis zorg en geen apart medisch specialisme. Van alle artsen, ongeacht specialisme en instelling, wordt verwacht dat zij, waar nodig, adequate palliatieve zorg kunnen verlenen. Daarom moet palliatieve zorg een onderdeel zijn van de opleiding van artsen. Hoewel de behoefte aan palliatieve zorg is toegenomen, besteden Geneeskunde-opleidingen pas sinds kort aandacht aan dit onderwerp. Uit internationaal onderzoek blijkt dat geneeskundestudenten zich onvoorbereid voelen in hun palliatieve zorgverlening.

Om passend onderwijs te ontwikkelen, dat aansluit bij de perspectieven en behoeften van de studenten Geneeskunde, is het belangrijk om eerst leerbehoeften in kaart te brengen en vast te stellen welke competenties verwacht worden door de praktijk. Vervolgens moet worden onderzocht hoe deze competenties het beste kunnen worden verworven en hoe het onderwijs over palliatieve zorg geïntegreerd kan worden in het curriculum.

Het onderzoek in dit proefschrift richt zich op vier vragen:

1. Wat zijn de opvattingen van studenten Geneeskunde over het belang van palliatieve zorg onderwijs, over het onderwijs dat zij hebben genoten en hun (zelf gerapporteerde) vertrouwen in hun eigen capaciteit en hun kennis van palliatieve zorg? (Hoofdstuk 2)
2. Welke competenties op het gebied van palliatieve zorg, en op welk niveau, moeten aan bod komen in de Geneeskunde-opleiding volgens experts in de palliatieve zorg, pas afgestuurde artsen, ervaren artsen, ervaren verpleegkundigen en docenten? (Hoofdstuk 3)
3. Hoe evalueren Geneeskunde studenten, docenten en onderwijskundigen een reeks samenhangende leertaken gericht op de zingevingsdimensie van palliatieve zorg? (Hoofdstuk 4)
4. Hoe beoordelen studenten en docenten de opdracht waarin de student met een chronisch zieke patiënt in gesprek gaat over de vier dimensies van zorg (fysiek,



psychologisch, sociaal en zingeving), er een rapport over schrijft en peerfeedback geeft en ontvangt en hierop reflecteert? (Hoofdstuk 5)

## Hoofdstuk 2

In de eerste studie van dit proefschrift onderzochten we de opvattingen van studenten Geneeskunde over het belang van onderwijs over palliatieve zorg en hun mening over het onderwijs dat ze hebben genoten. Daarnaast onderzochten we het (zelf gerapporteerde) vertrouwen in het verlenen van palliatieve zorg en hun kennis over palliatieve zorg. In totaal vulden 222 laatstejaars geneeskundestudenten van vier Nederlandse medische faculteiten de vragenlijst in. Uit de resultaten bleek dat studenten onderwijs over palliatieve zorg belangrijk vinden, met name onderwijs dat is gericht op patiëntgerichte zorg en communicatie met de patiënt. Deze onderwerpen komen onvoldoende aan bod in de huidige medische curricula. De studenten voelden zich over het algemeen onvoldoende voorbereid in het verlenen van palliatieve zorg en in het bespreken van de psychologische, sociale en met name de zingevingsdimensie van zorg. Uit de kennistoets bleek dat slechts 48% van de studenten meer dan de helft van de vragen goed beantwoordde. Studenten waren echter wel tevreden over het onderwijs betreffende ethiek rondom de levenseinde zorg, wat tot uiting kwam in hun opmerkelijk hoge scores op de ethische vragen op de kennistoets. Deze bevinding past in de Nederlandse context, waar sprake is van een landelijk debat over levenseinde zorg.

## Hoofdstuk 3

Op basis van de literatuur en de resultaten van het eerste onderzoek, zijn zes hoofdcompetenties met bijbehorende sub-competenties geformuleerd. We hebben aan vijf groepen stakeholders met verschillende professionele achtergronden (d.w.z. palliatieve zorg professionals, artsen, verpleegkundigen, onderwijzers en net afgestudeerde artsen) gevraagd welke hoofd- en sub competenties aan bod dienen te komen in de geneeskunde opleidingen en op welk niveau. Na twee beoordelingsrondes werd overeenstemming bereikt. De resultaten lieten een hoge mate van consensus zien zowel binnen als tussen de stakeholdergroepen. Stakeholders vinden dat het verwerven van alleen theoretische kennis niet voldoende is. Studenten moeten competenties op het gebied van palliatieve zorg ook kunnen oefenen in een gesimuleerde setting of onder direct toezicht in de praktijk. Stakeholders vinden met name communicatie, persoonlijke ontwikkeling en welzijn belangrijk. Vroegtijdige zorgplanning scoorde iets lager, dat wil zeggen dat onderwijs in een in een gesimuleerde setting daarvoor voldoende zou zijn. De resultaten hebben geleid tot een landelijk competentie raamwerk voor de geneeskunde opleidingen.

## Hoofdstuk 4

We hebben een samenhangende set van acht leertaken ontwikkeld, waarin studenten leren communiceren over de vier dimensies van palliatieve zorg en in het bijzonder de zingevingsdimensie. We hebben daarbij de volgende ontwerprichtlijnen en onderwijskundige principes toegepast: authentiek leren, reflectief leren, peer feedback en integratie in het curriculum. We hebben studenten, docenten en onderwijskundigen gevraagd om de leertaken en materialen te evalueren door middel van focusgroepen en individuele interviews. De stakeholders waren positief over de leertaken en materialen, omdat ze authentiek waren en relevant voor de zorgpraktijk. Bovendien moedigen de leertaken studenten aan om niet alleen na te denken over de vier dimensies van zorg, maar ook over hun persoonlijke normen en waarden. Alle deelnemers waren het erover eens dat deze leertaken als longitudinale lijn in de opleiding Geneeskunde geïntegreerd zouden moeten worden, maar zij verschilden van mening over wanneer daarmee gestart zou moeten worden: al meteen in het eerste jaar of pas later, tegen het einde van de bachelor of in de masterfase. De stakeholders stelden verder voor om meer aandacht te besteden aan culturele diversiteit binnen de taken en leermaterialen. Ze benadrukten ook het belang van de veiligheid van studenten en patiënten, omdat palliatieve zorg mogelijk een emotioneel beladen onderwerp is.

## Hoofdstuk 5

Een van de acht leertaken uit het vorige onderzoek werd geïmplementeerd binnen een vijfdejaars coschap in een opleiding Geneeskunde. Binnen deze leertaak hebben de studenten een chronisch zieke patiënt of palliatieve zorgpatiënt geïnterviewd over de vier dimensies van zorg. Vervolgens schreven ze een verslag en een reflectie over hun interview. Studenten gaven peer feedback op elkaar en bespraken hun ervaringen in een groepsbijeenkomst. Om deze leertaak te evalueren vroegen we studenten om een vragenlijst te beantwoorden en deel te nemen aan een focusgroep. We analyseerden ook de verslagen en reflecties van studenten en interviewden de betrokken docenten. Zowel de studenten als docenten waardeerden deze leertaak, hoewel de meeste studenten een chronisch zieke patiënt interviewden in plaats van een palliatieve zorgpatiënt. Tijdens de focusgroepen gaven de studenten aan dat ze de authenticiteit van de opdracht (d.w.z. het interviewen van een echte patiënt) leerzaam vonden. Ze gaven wel aan zij de zingevingsdimensie het moeilijkst vonden om te bespreken. De vragenlijst en reflectieverslagen bevestigden dit. Studenten vonden het ook waardevol om elkaars rapporten te lezen en peerfeedback te geven. Zij gaven aan dat ze geleerd hadden over verschillende communicatietechnieken en inzicht hadden gekregen in de diversiteit tussen patiënten en verschillende coping-technieken. Studenten vonden het reflecteren nuttig, met name in de groepsbijeenkomst, zolang ze het niet te vaak hoeven te doen. In de verslagen viel op dat studenten veel aandacht besteedden aan



de relatie tussen de ziekte en het dagelijks leven van de patiënt, maar zij reflecteerden zelden op de mogelijke relatie tussen de vier dimensies van zorg en de genomen zorgbeslissingen. Dit onderzoek bevestigt dat studenten Geneeskunde in staat zijn om te oefenen met een gesprek over de vier dimensies van zorg en dat deze leertaak relatief eenvoudig kan worden geïntegreerd in een coschap.

## Hoofdstuk 6

In de algemene discussie werden de belangrijkste resultaten en conclusies samengevat en drie discussiepunten gepresenteerd. **Ten eerste** werd het belang van palliatieve zorg onderwijs in dit proefschrift bevestigd. In alle uitgevoerde onderzoeken was het enthousiasme van betrokken stakeholders bij het bespreken en implementeren van palliatieve zorg onderwijs groot. Dat wijst op erkenning van het belang van palliatieve zorg onderwijs. **Ten tweede** gaven de meeste stakeholders de voorkeur aan de implementatie van onderwijs over palliatieve zorg onderwijs op verschillende plekken in het Geneeskunde curriculum en niet (alleen) in een aparte module. **Ten derde** was een terugkerend discussiepunt de vraag wanneer te beginnen met palliatieve zorg onderwijs in het medische curriculum. De meerderheid van de stakeholders was voorstander van het invoeren van onderwijs aan het begin van het onderwijsprogramma, op voorwaarde dat er een veilige omgeving voor studenten wordt gecreëerd.

De kracht van dit proefschrift is het brede scala aan stakeholders dat bij de verschillende onderzoeken betrokken was. Een tweede sterk punt is de combinatie van onderwijskundige theorie en toepassing in de praktijk. Dit is terug te vinden in het competentieraamwerk en in de leerlijn en leertaken. Ten derde zijn de ontwikkelde materialen flexibel. Ze zijn gebaseerd op onderwijskundige principes en docenten kunnen ze aanpassen aan hun context, bijvoorbeeld hun eigen doelen en het niveau van hun studenten. We hebben richtlijnen gegeven voor het implementeren van bepaalde onderwijskundige interventies, die we hebben gebaseerd op de laatste twee onderzoeken. In dit proefschrift zijn echter patiënten niet expliciet betrokken bij het ontwerpen van nieuw onderwijs over palliatieve zorg. Wij hebben ook slechts een deel van de leerlijn leertaken daadwerkelijk geïmplementeerd en geëvalueerd. Verder onderzoek is nodig om de perspectieven van patiënten en de implementatie en evaluatie van het onderwijsmateriaal in universiteiten met verschillende culturen en onderwijssystemen te verkennen.

Onze bevindingen hebben verschillende praktische implicaties voor de implementatie en evaluatie van onderwijs in palliatieve zorg in de medische curricula van de bacheloropleiding. Deze praktische implicaties kwamen aan de orde in hoofdstuk 6.

## Impact chapter

This section is a reflection on the conducted studies in this dissertation, and particularly on their societal and scientific impact.

### Main objective and results

We aimed to contribute to developing, implementing and evaluating palliative care education in the undergraduate medical curricula across the Netherlands. We conducted four empirical studies in order to achieve this objective. The first two studies analysed the learning needs of students, which inspired the creation of an educational framework: a set of palliative care competencies that should be covered in undergraduate medical curricula. The last two studies focused on developing and evaluating a coherent set of learning activities for palliative care education, as well as the development, implementation and evaluation of one learning task focusing on the four dimensions of care: the physical, social, psychological and spiritual.

The results from the first two studies analysing learning needs showed that medical students across four universities view palliative care as an important subject that should be properly addressed during their undergraduate medical education. Students reported feeling ill-prepared when raising and discussing the psychological, social and spiritual dimensions of care, as their education only placed a significant emphasis on the physical dimension. Education on how to communicate with palliative patients was also lacking, whilst students considered communication to be one of the most important skills they needed to learn. Based on the literature and the results of the first study with students, we proposed a set of palliative care competencies that should be included in undergraduate medical curricula to stakeholders across the industry (i.e., palliative care professionals, physicians, nurses, educators and junior doctors). They agreed with the findings of the first study and stressed that junior doctors should be able to communicate with palliative care patients in the workplace under close supervision. Of significance was the high level of consensus from stakeholders: they felt that these competencies should not only be covered at the theoretical level, but should also be acquired successfully at the practical level (i.e., in a simulated setting or practised under close supervision).

Based on the needs analyses and the developed framework, educational materials were developed to improve palliative care education across undergraduate medical curricula. We developed a coherent set of learning tasks focused on teaching communication skills with patients about the four dimensions of palliative care, with an explicit emphasis on the spiritual dimension. Learning tasks were developed in line with instructional design guidelines. Due to the complex nature of these competencies, a number of educational principles were prioritised: authentic learning, reflective learning, peer feedback and curriculum integration. Learning was organised around



authentic learning tasks relevant to later professions, using printed materials, video case studies, simulations and real patients. One of the learning tasks was implemented in a medical curriculum and evaluated by both the students and teachers. Feedback emphasised the importance of talking to an actual patient about the four dimensions of care. Even with discussion of all four dimensions of care during the interviews, the spiritual dimension was still found to be difficult to discuss. The last two studies showed that palliative care education can be enhanced in undergraduate medical curricula by interweaving educational materials throughout the curriculum. The developed educational materials are flexible and based on educational principles that permits integration with the existing curriculum.

### Scientific impact

Throughout this dissertation, we combined both theory and practice. We developed and evaluated educational materials using a design-based research (DBR) approach, and conducted cycles of analyses, design and evaluation. The educational materials were based on theoretically motivated educational principles (i.e., authentic learning, reflection, peer feedback and integration). We evaluated the materials using these principles. This dissertation shows that these educational principles are suitable for successfully learning about palliative care. Students valued the authentic tasks and reported that reflecting on palliative care, their role as a professional and their values was beneficial. Furthermore, this dissertation has shown that medical students perceive learning about palliative care early on in the curricula as valuable and worthwhile, even though palliative care is considered an emotionally challenging and complex topic to discuss.

### Societal impact

Palliative care is gaining importance within the physician's range of duties. As palliative care is an integral part of regular healthcare, it is important that medical students acquire the necessary knowledge and skills before they enter the professional field. Palliative care should be considered normal care; well-prepared physicians are able to provide better care for palliative patients and their relatives. This dissertation provides insights into novel educational approaches to palliative care that better prepare medical students for the working world. The "Raamplan", the Dutch national blueprint for undergraduate medical curricula, states that a junior doctor should be able to provide palliative care, but it does not provide explicit guidelines as to how they should be educated to do so. The developed framework can be used as a guide. The proposed framework is robust enough to develop educational materials, whilst offering flexibility for universities and teachers in determining how and when to implement it in their own curriculum.

Furthermore, we developed and implemented educational materials to address current educational gaps. The research findings showed that explicit education is needed to teach students how to address the four dimensions of care, particularly spiritual care. The educational interventions provided in this dissertation can be used by medical departments within universities when implementing palliative care education in their curricula. This will lead to better education on palliative care education, and thus better educated doctors within the professional domain. By improving the skills of medical doctors, patient care can also be improved.

## Target group

The results of this dissertation are relevant for palliative care teachers, teachers in all fields of the undergraduate medical curricula, curriculum designers and undergraduate medical school program directors. The findings highlight relevant information as to the educational needs of medical students and the requirements of the professional field. We developed an educational framework concerning palliative care competencies, provided examples of educational interventions based on theoretical principles and discussed their implementation and subsequent evaluation. Our results are useful for health science education researchers interested in developing, implementing and evaluating educational interventions and curricula, whilst also demonstrating the benefit of applying the educational principles of authentic learning, peer feedback and reflection.

## Dissemination

We conducted various activities to disseminate our results to different target groups. The four studies in this dissertation are available as published articles in a variety of peer-reviewed journals. The results and the developed educational materials have been made available on Pasemeco ([www.pasemeco.nl](http://www.pasemeco.nl)) and Palliaweb ([www.palliaweb.nl](http://www.palliaweb.nl)), which provide public access to educational materials. The cooperative Palliative Care Netherlands (PZNL) ensures that all educational materials are up-to-date. Results have also been shared on social media platforms, such as Twitter and LinkedIn.

The results of the studies have been presented at national and international conferences for students, teachers, educationalists, curriculum coordinators, program directors and health science education researchers, including the National Association for Medical Education (NVMO), the Interuniversity Centre for Education Sciences (ICO), International Association of Medical Education (AMEE) and Rogano. Furthermore, the results have been presented at conferences for palliative care teachers and professionals, such as the Dutch-Flemish Science Days Palliative Care and the European Association for Palliative Care (EAPC) World Research Congress.



emaline samantha - nuno piromvendilog - iris maylein margot - vito group: gokhan lotte nilou tania brice mohammad - the members of the sig co-creating group - mijn leuze vriendenamen - familie: mia rafijn samme man papo brian svenne  
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 Phd team: maïcke  
 julia diana danielle  
 - pasemco: kiranca judith anemie jimmy evelien juliette huijze - sp: s&h: hans w. marické jenske guette els post papo  
 - secretariat: blian nicky andy hennie  
 juliet eden felicitas gwynje kate michelanne gwyn jay  
 Phd pers: sevgi derik samme stephanne samme carolin lenette susanne  
 Phd pers: sevgi derik samme stephanne samme carolin lenette susanne



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**There is nothing that you can do that can't be done  
All you need is love**

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Bedankt, thank you, merci



## Curriculum vitae

Jolien Pieters was born in Maastricht on the 28<sup>th</sup> of November, 1989. After receiving her bachelor's degree in laws from Zuyd University of applied sciences in 2011, she received her bachelor's degree in Psychology (2014) and her master's degree in Neuropsychology (2016) from Maastricht University. During her education, she participated in the Maastricht Research-Based Learning project, which fueled her interest in conducting research.

At the School of Health Professions Education (SHE), she was granted the opportunity to combine and pursue her research interest, with her other interest: educational sciences. During her PhD, she developed, implemented, and evaluated educational materials and interventions. Throughout her PhD, she worked as a PhD representative of SHE in the Faculty PhD Committee (FPC) and in the departmental management team (DB). She was (co-)organizer of the NVMO PhD student days. Furthermore, she was a member of the Special Interest Group of Co-creation and the PR committee of SHE. Additionally, she took part in the Lorentz Center Workshop Life Sciences with Industry, where she developed a serious game concerning the prevention of health issues.

After her PhD, Jolien worked as a teacher at the Faculty of Psychology and Neurosciences at Maastricht University. Currently, she is employed as an assistant professor at the Faculty of Psychology at the Open University.





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# LET'S TALK ABOUT IT

## Palliative care education in the undergraduate medical curricula

Maastricht | 01.04.2022

- 01** Onderwijs over palliatieve zorg hoort een plek te krijgen binnen de opleiding Geneeskunde; het verwerven van alleen theoretische kennis is onvoldoende  
*Dit proefschrift*
- 02** In een veilige omgeving, willen en kunnen studenten Geneeskunde leren over palliatieve zorg  
*Dit proefschrift*
- 03** Palliatieve zorg onderwijs behoort niet als een apart blok te worden aangeboden, maar verweven te worden in het hele curriculum Geneeskunde  
*Dit proefschrift*
- 04** In het onderwijs over PZ is meer aandacht nodig voor communicatie over de vier dimensies van zorg, met name zingeving  
*Dit proefschrift*
- 05** Door palliatieve zorg al vroeg in de curricula te implementeren, leren studenten dat palliatieve zorg een normaal onderdeel is van de reguliere zorg  
*Valorisatie*
- 06** Samenwerking in een multidisciplinair team van inhoudelijke experts, studenten, docenten en onderwijskundigen biedt de beste kans op succesvolle innovatie van onderwijs.
- 07** Authentieke leertaken worden door studenten en docenten als leerzaam ervaren en versterken de betrokkenheid van studenten.
- 08** Education is not an affair of 'telling' and being told, but an active and constructive process  
*John Dewey*
- 09** La médecine c'est guerir parfois, soulager souvent, consoler toujours  
*Ambroise Paré*
- 10** You won't find faith or hope down a telescope  
*The Script*

**JOLIEN PIETERS**

four dimensions of care

stakeholders

communication

competencies

integration

normal care

parameco

authentic learning

peer feedback

reflection