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Minna Hökkä

PALLIATIVE CARE NURSING COMPETENCIES AND UNDERGRADUATE NURSING STUDENTS' VIEWS OF PALLIATIVE CARE EDUCATION

UNIVERSITY OF OULU GRADUATE SCHOOL;
UNIVERSITY OF OULU,
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Abstract

The main aim of this study was to describe the palliative care (PC) nursing competencies required from nurses on different PC levels and to examine nursing students' views of PC education. The study consisted of three phases: (I) an integrative systematic review (sub-study I), (II) a descriptive qualitative study (sub-study II) and (III) a cross-sectional survey (sub-studies III-IV).

Sub-study I included 21 studies (n=7470 participants) from five databases. Based on a review, using thematic analysis, PC competencies merged from the data, namely collaboration, communication, cultural, clinical, psychosocial, spiritual, ethico-legal and leadership competence. A research gap of PC competencies required in different levels of PC provision was identified. In qualitative sub-study II, multidisciplinary groups of professionals (n=222) defined the PC nursing competencies required in different levels of PC. The competencies required in the basic level consisted of many competencies such as symptom management, supporting and encounters competencies. The competencies required in the specialist level included competencies such as maintaining expertise, advanced symptom management as also research and development competencies. In quantitative sub-study III, final year nursing students (n=1331) responded to a questionnaire and assessed the coverage of PC content in their education and their self-assessed competence of the subject. The students assessed that education on mental symptoms, existential issues and multicultural aspects were covered incompletely. Over half of the students wanted more education on pharmacological and non-pharmacological pain management. Almost all students considered PC as a useful subject, but only about half of them assessed their competence within PC as sufficient. In qualitative sub-study IV, final year nursing students (n=766) responded to the open-ended question in the survey and described their views of palliative care education. Based on a contents analysis three unifying categories were identified, 1) development needs and views of PC education, 2) the preferred types of PC education, and 3) factors that promote or hinder PC learning.

In conclusion, nurses need a wide range of competencies to provide PC. Nursing students consider PC as a useful subject, but still addressed the need to further develop the education on the subject.

Keywords: competencies, education, nursing, palliative care, professional competence

Hökkä, Minna, Sairaanhoitajan palliatiivisen hoidon osaaminen ja sairaanhoitaja-opiskelijoiden näkemyksiä palliatiivisen hoidon koulutuksesta.
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Tiivistelmä

Tutkimuksen päätarkoituksena oli kuvata sairaanhoitajan osaamista palliatiivisen hoidon eri tasoilla ja selvittää sairaanhoitajaopiskelijoiden näkemyksiä palliatiivisen hoidon koulutuksesta. Tutkimus koostui kolmesta vaiheesta: (I) integroitu järjestelmällinen katsaus (osatutkimus I), (II) kuvaileva laadullinen tutkimus (osatutkimus II) ja (III) poikkileikkaustutkimus (osatutkimukset III-IV).

Osatutkimuksessa I oli 21 tutkimusta (n=7470) viidestä tietokannasta. Katsauksessa palliatiivisen hoidon osaamisalueiksi muodostuivat temaattisen analyysin mukaan; yhteistyö-, kommunikointi- ja kulttuuriosaaminen, kliininen, psykososiaalinen, spirituaalinen ja eettinen osaaminen sekä laki- ja johtamisosaaminen. Palliatiivisen hoidon eri tasoilla tarvittavasta osaamisesta löytyi niukasti tutkimustietoa. Laadullisessa osatutkimuksessa II ammattilaiset (n=222) määrittelivät palliatiivisen hoidon eri tasoilla tarvittavaa hoitotyön osaamista. Perustasolla osaaminen koostui osaamisalueista, kuten oireiden hoidon, tukemisen ja kohtaamisen osaaminen. Erityistason osaaminen koostui osaamisalueista, kuten asiantuntijuuden ylläpito, vaativan oirehoidon, tutkimuksen ja kehittämisen osaamisesta. Määrällisessä osatutkimuksessa III viimeisen vuoden sairaanhoitajaopiskelijat (n=1331) vastasivat kyselylomakkeeseen, jossa he arvioivat palliatiivisen hoidon sisältöjä koulutuksessa ja omaa osaamistaan aiheesta. Opiskelijat arvioivat, että psyykkisiä oireita, eksistentiaalisia kysymyksiä ja monikulttuurisia näkökulmia ei käsitelty riittävästi opetuksessa. Yli puolet opiskelijoista toivoi lisää koulutusta lääkkeellisestä ja lääkkeettömästä kivunhoidosta. Lähes kaikki pitivät aihetta hyödyllisenä, mutta vain noin puolet heistä arvioi palliatiivisen hoidon osaamisen riittäväksi. Laadullisessa osatutkimuksessa IV viimeisen vuoden sairaanhoitajaopiskelijat (n=766) vastasivat kyselylomakkeen avoimeen kysymykseen ja kuvasivat näkemyksiään palliatiivisen hoidon koulutuksesta. Sisällönanalyysin mukaan muodostui kolme yhdistävää luokkaa 1) palliatiivisen hoidon koulutuksen kehittämistarpeet ja näkemykset palliatiivisesta hoidosta, 2) toiveet palliatiivisen hoidon koulutuksen toteuttamistavoista ja 3) palliatiivisen hoidon oppimista edistävät tai estävät tekijät.

Johtopäätöksenä voidaan todeta, että sairaanhoitajat tarvitsevat moninaista osaamista palliatiivisen hoidon toteuttamiseen. Opiskelijat pitävät aihetta hyödyllisenä, mutta koulutuksen kehittämisen tarve on ilmeinen.

Asiasanat: hoitotyö, koulutus, osaaminen

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”On hyvä olla olemassa määränpää, jota kohti kuljemme, mutta loppujen lopuksi vain matkalla on merkitystä.” -Ursula K. Le Guin

Date 26.3.2022 Minna Hökkä

Abbreviations

CINAHL	International database
COREQ	The Consolidated Criteria for Reporting Qualitative Studies
CRD	Centre for Reviews and Dissemination
ECTS	European Credit Transfer and Accumulation System
EHEA	European Higher Education Area
EOL-ICU	The Scale of End-Of-Life Care in ICU
EOL-Q	The End-of-Life Care Questionnaire
Medic	Finnish database
MeSH	Medical Subject Headings
PCQN	The Palliative Care Quiz for Nursing
PICo, PICO	An evidence based model to build research question an search strategy
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta Analyses
PubMed	International database
Scopus	International database
STROBE	Strengthening the Reporting of OBservational studies in Epidemiology,
UAS	University of Applied Sciences

List of original publications

This thesis is based on the following publications, which are referred throughout the text by their Roman numerals:

I Hökkä, M., Martins Pereira, S., Pölkki, T., Kyngäs, H., Hernández-Marrero, P. (2020). Nursing competencies across different levels of palliative care provision: A systematic integrative review with thematic synthesis. Palliative Medicine 34(7), 851–870. doi: 10.1177/0269216320918798

II Hökkä M, Melender H-L, Lehto JT, Kaakinen P. (2021). Palliative Nursing Competencies Required for Different Levels of Palliative Care Provision: A Qualitative Analysis of Health Care Professionals' Perspectives. Journal of Palliative Medicine 24(10), 1516-1524. doi: 10.1089/jpm.2020.0632

III Hökkä, M., Pölkki T Lehto JT. (2022). Nursing students' views of the content of palliative care in undergraduate education and their self-assessed palliative care competence - A nationwide cross-sectional study. Journal of Palliative care (Online first) https://doi.org/10.1177/08258597221084445

IV Hökkä, M., Lehto JT, Kyngäs, H, Pölkki T. (2022). Finnish nursing students' perceptions of the development needs in palliative care education and factors influencing learning in undergraduate nursing studies – a qualitative study. BMC Palliative Care 21(40). https://doi.org/10.1186/s12904-022-00915-6

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1 Introduction

The care of dying persons has always been a part of humankind. The term hospice can be traced to the medieval period. At that time guesthouses (hospices) were launched along pilgrimage routes. In addition to accommodating people, any sick persons who were unable to continue their pilgrimage were cared for in these hospices. (Milligan & Potts, 2009; Vainio, 2015.) Palliative care as a part of the physician's work was emphasized already in 1708. Florence Nightingale discussed the proper care of dying persons as a part of nursing care in 1859. Nightingale highlighted the importance of the environment and emotional wellbeing of the patients. (Vanderpool, 2015.)

Cicely Saunders is seen as one of the main influencers in the development of the modern hospice movement and palliative care. She founded Saint Christopher's hospice in 1967, after which the hospice movement increased to different countries. (Milligan & Potts, 2009; Clark, 2018.) In Canada, The Royal Victoria Hospital Palliative Care Service was founded in 1973 and the term palliative care referring to a ward caring for dying persons was used for the first time (Milligan & Potts, 2009). Since the 1980's, palliative care has become more professionalized and is even recognized as a medical subspeciality in some countries (Vanderpool 2015).

The Council of Europe implemented the Supplementary Recommendation (2003) to encourage member states to adopt palliative care legislation and policies (Council of Europe, 2003). Access to palliative care is emphasized as a human right and the provision of palliative care should be integrated into the healthcare system (European Council, 2018; Connor, 2020). Worldwide, it is estimated that over 56.8 million persons require palliative care. Annually 31.1 million persons need care before the last year of life and 25.7 million near the end-of-life. There are indications that the need for palliative care is tremendous and increasing globally; this need is expected to double by 2060. This is due to phenomena such as rapidly ageing populations, the increase of noncommunicable diseases, and the emergence of new diseases like COVID-19. (Connor, 2020.)

In Finland, 55 488 persons died in 2020 (Tilastokeskus, 2020). Of these, approximately every third patient needs palliative care during the last year of life and just as many needs palliative care integrated at the earlier phase of the disease trajectory (Connor & Bermedo, 2015). The number of persons needing support is still increasing if we include the family members to this account.

Nurses are the largest professional group compared to other healthcare professionals (World Health Organization 2020). Their role in the care of patients

in palliative care is pivotal, since they represent the largest group of professionals involved in palliative care. Nurses are often the primary care provider working closest to the patient and family across a wide range of different settings. (Fitch, Fliendner, O'connor, 2015; International Society of Nurses in Cancer Care, 2015; World Health Organization, 2020.) Therefore, nurses are often the ones who know the patients' and their families' situations, needs and hopes. The nurses' role is essential in assessing the care needs and providing care for the patient based on the needs. In addition, nurses are key professionals when coordinating the care (Lynch et al., 2011; Fitch, Fliendner, O'connor, 2015; Witt Sherman & Free, 2015; Sekse, Hunskår, Elligsen, 2017.)

The development of palliative care provision has evolved rapidly in the last ten years in Finland. In 2017, a recommendation of palliative care provision was published by the Ministry of Social Affairs and Health. The recommendation proposed a national qualification and quality criteria for different levels of palliative care provision and for the development of the education of the professionals. (Saarto, 2017.) In addition, a decree was set in 2017 strengthening the university hospital districts responsibility to coordinate advanced palliative care provision regionally (Finlex, 2017a). Otherwise, there are no national general laws on healthcare with reference to palliative care or legislation specific to palliative care in Finland (Arias-Casais et al., 2019).

A report assessing the current state of palliative care provision was published by the Ministry of Social Affairs and Health in 2019. The main findings were that there was still inequality in the access of palliative care services within the country, especially in specialist services. In this report, the lack of palliative care competence and education among healthcare professionals in Finland was clearly highlighted (Saarto, Finne-Soveri & expert working groups, 2019a). To improve nursing and medical education in palliative care, a national project- EduPal (Developing Palliative Nursing and Medical Education through Multidisciplinary Cooperation and Working-life Collaboration) was launched at 2018. The project was funded by the Ministry of Education and Culture in Finland and was aimed at developing national recommendations for both undergraduate and specialist (postgraduate) education in palliative care. As a part of the project, research on the required competencies of nurses working within palliative care and on nursing students' views of palliative care education was performed. (Hökkä & Lehto, 2021.)

In the World Health Organization's public health strategy, education to healthcare professionals of palliative care is one of the key elements toward successfully integrating palliative care into the healthcare system (Stjernswärd et

al., 2007; Stjenswärd, 2007). Palliative care education for healthcare providers has also been reported as a facilitating element when developing the integration of palliative care into the healthcare system (Centeno et al., 2017). The work to integrate palliative care into the healthcare system is ongoing also in Finland, which calls for professionals with palliative care competence.

Thus, the lack of systematic undergraduate and post-graduate palliative care education for nurses is highlighted both in Finland (Saarto, Finne-Soveri & expert working groups, 2019a) and globally (Arias-Casais et al., 2019), even though it is a mandatory element for the integration of palliative care into the social- and healthcare system (Centeno et al., 2017). The need to develop palliative care nursing education is imminent. There are limited studies of palliative care nursing competencies aligned to the different levels of palliative care provision, as well as of students' view of the development needs within nursing education and of their views of the content of palliative care education.

The aims of this doctoral dissertation study were i) to synthesize the empirical evidence of palliative nursing competencies and to describe whether these competencies differ across the different levels of palliative care provision, ii) to describe the professionals' views of palliative care nursing competencies needed in the different levels of palliative care provision, iii) to assess students' views of palliative care contents in nursing education and to assess their self-assessed levels of palliative care competence, and iiii) to describe the undergraduate nursing students' views of palliative care education in the nursing program. The new knowledge gained in this study can be used to develop and evaluate nursing education.

2 Palliative care education and competencies

The theoretical framework in this study consists of key concepts; palliative care, palliative care provision, undergraduate nursing education, and palliative care nursing competence. In this section, the concepts will be reflected based on earlier research, literature, guidelines, and policy. When searching the literature, no year limits were set. Several searches for the theoretical framework were launched in CINAHL, PubMed, Academic Search Premier, Scopus and Medic databases and in the electronic databases of the Ministry of Social Affairs and Health. The following core terms were used: 'palliative care or hospice care or end-of-life care or terminal care'; 'competenc* or professional competence or skills' and 'nurs*' or palliative care level; and specialist level or palliative care approach or generalist level; and education; and nursing student. The key MeSH terms were used, if possible, in the databases. The terms were adapted for each database and different combinations of the core terms were used for each search. Manual searches were made into palliative care journals and books.

2.1 Palliative care

The World Health Organization (2020) defines palliative care as an approach which aims to improve the quality of life and relieve the suffering of the patients' and families' who face problems associated with life-threatening illness. The definition of palliative care has evolved over the time, as the research and settings of palliative care have developed. Traditionally, palliative care has been seen as the care of persons when death is pending. The present evolvement of the concept includes the fact that palliative care has numerous benefits for patients with chronic and progressive diseases, when integrated at a much earlier stage in the care. (Council of Europe, 2003; Vanderpool, 2015.)

Palliative care has a holistic nature, the aims are on early identification, prevention and relief of suffering and enhancing the quality of life. The focus in the care is on physical, psychosocial and spiritual dimensions. Palliative care does not intend to hasten or postpone the patient's death. The aim in the care is to help the patients to live as actively as possible until death occurs. It is not timely limited to death, since it is applicable early in the course of life-threatening illness, along with therapies that are intended to prolong life. It provides a support system to help the family to cope during the patient's illness and to help them in their bereavement after the patient's death. (Connor, 2020; World Health Organization, 2020.)

Palliative care is an active and interdisciplinary approach that focuses on the patient, their family, and the surrounding community. End-of-life is comprehensive care for dying patients near an impending death at the last few weeks, days or hours of life. (Radbrugh & Payne, 2009.) Palliative care should be delivered based on the need, not the diagnosis or prognosis. It should also be provided not only in palliative care specialist settings, but at all levels of palliative care provision and in different healthcare settings since the care should be provided wherever a person is located. (Connor, 2020.)

Quality of life and suffering are main concepts in the definition of palliative care. Quality of life is multidimensional, subjective and difficult to measure (Jocham et al., 2006), although several tools for the measurement of quality of life in palliative care exist (Davis & Hui, 2017). Quality of life includes the individual's subjective perception of their position in life, in the context of culture and value systems, including physical, social, mental and spiritual dimensions. Quality of life is the persons' perceptions of their individual situation in relation to the persons' goals, expectations, standards and concerns. (World Health Organization, 2021.) Suffering is seen as a sum of physical, psychological, spiritual and social suffering (Clark, 1999). Total pain is a multidimensional situation in the patient's life, where suffering can be seen as a conflict between expectations and possibilities (Goebel et al., 2009).

The core values in palliative care are autonomy, seeing the persons as a unique individual, dignity and right to respectful palliative care, which considers cultural and religious values as well as the legislation of the country (Radbrugh et al., 2009). According to a definition published by the Ministry of Social Affairs and Health, the ethical values in end-of-life care include good care, respect of human dignity, self-determination, and justice (Ministry of Social Affairs and Health, 2010). A key role for the nurse in end-of life care is to provide holistic nursing and to relieve the suffering of the patient and their family. The approach includes appreciative encounters and actions promoting interaction. Facing the reality of death requires courage and inclusion in a unique and complex process. (Anttonen, 2016.)

In this study palliative care refers to an active interdisciplinary, multidimensional holistic approach, aiming to maintain the quality of life (Jocham et al., 2006; World Health Organization, 2021) and to prevent and relieve the suffering (Clark, 1999; Goebel et al., 2009; Anttonen, 2016) of the patient and their families as defined earlier (Radbrugh et al., 2009; Word Health Organization, 2020).

2.2 Palliative care provision

Palliative care is provided across a wide range of social- and healthcare settings. Based on literature, two or three levels of palliative care provision services are described: 1. palliative care approach, is defined as the integration of palliative care interventions and provision in settings that do not provide specialist palliative care, such as primary care, nursing homes or hospital wards. 2. Generalist palliative care, is provided in setting where professionals with good basic skills of palliative care, such as oncologists or geriatric specialists with palliative care education, provide the care. On the generalist level, the main focus of professional practice is not on palliative care. 3. Specialist palliative care, refers to a level where the main activity in the professional practice is the provision of palliative care, such as specialist palliative care units and hospices. (Radbruch & Payne, 2009; Radbruch & Payne, 2010.) The Council of Europe highlighted in 2018 that palliative care is still not appropriately provided in Europe (European Council, 2018).

In Finland, palliative care provision is organized as a three-tier model, where palliative care services are integrated to the social-and healthcare system. The patient's needs are the basis for the care. The premise is that every person has an equal right to achieve palliative care based on their needs and wishes at home or in a social- or health care unit. (Saarto, Finne-Soveri & expert working groups, 2019b.)

The basic level of palliative care provision refers to all the different social- and healthcare settings, such as nursing homes and hospital wards, where palliative care patients are cared for. This level provides basic palliative care by non-specialist healthcare professionals. The undergraduate nursing education should ensure the competencies to provide quality palliative care at this level to all graduating nurses. The basic level includes A- level units, where palliative care is developed as a part of the professional care, and some of the professionals also have further education of palliative care. In the specialist levels (B- and C-levels), palliative care is the main focus of the care. At this level, nearly all professionals should have a specialization in palliative care. (Saarto, Finne-Soveri & expert working groups, 2019b.) Nurses have an essential role across all levels of palliative care provision (Krisman-Scott & McCorkle, 2002; De Vlieger et al., 2004).

In this study, the basic level of palliative care provision refers to the basic level, which includes all the different social- and healthcare settings where basic palliative care is provided by non-specialist healthcare professionals and the specialist level refers to units where the main focus is on palliative care, which is provided by professionals specialized in palliative care.

2.3 Palliative care nursing education

When palliative care is provided at different levels, also various forms of education must exist for nurses in order to reflect the competencies required in the distinct level of palliative care (De Vlieger et al., 2004; Connor & Sepulveda Bermedo, 2014). Nurses should have the appropriate education and competence to provide high-quality palliative care (Gamondi, Larkin, Payne, 2013a; Gamondi, Larkin, Payne, 2013b). In addition, nursing competence has been seen as crucial to assure high-quality and safe nursing care (Cowin et al., 2008; Smith, 2012).

The Bologna process has facilitated many changes in nursing education in the last decades (Zabalegui et al., 2006; Collins & Hever, 2014). The goal with the process was to bring more coherence to higher education systems and to set up a common European Higher Education Area (EHEA). The aim in EHEA is to introduce the three-cycle education system, namely bachelor's, master's and doctoral studies. In addition, the aims are to enhance the recognition of qualifications completed abroad in other higher education institutes and to strengthen the quality of education by implementing a system of quality assurance (European Commission, 2021.) The nursing education in Finland is based on the structures set up in the Bologna process and EHEA.

2.3.1 Undergraduate nursing education

Directive 2005/36/EC and European Union Directive 2013/55/EC (the Recognition of Professional Qualifications) set the minimum requirement for undergraduate nursing education, such as the length and minimum content in theoretical education and clinical practice. In the EHEA area, undergraduate nursing education is mostly offered as higher education at universities. The average length of the education in EHEA countries is three years (Lahtinen et al., 2014).

The undergraduate nursing education in Finland is provided in the Universities of Applied Sciences (UAS) at the bachelor's level. The law (Finlex, 1994) of nursing education sets out that all qualified registered nurses must have a bachelor's degree education. In addition, to work as a registered nurse, the graduated nurses have to apply for licensing for the right to practice as a registered nurse in Finland from the National Supervisory Authority for Welfare and Health. (Finlex, 1994.)

The bachelor's level in Finland has been referenced at level 6 (out of 8 levels) in the European Qualifications Framework (European Commission, 2008) as well as in the National Qualifications Framework (Finlex, 2017b; Finnish National

Agency for Education, 2021). There are 20 UASs currently providing nursing education in Finland (21 UASs during the data collection of the studies of this thesis). The nursing education lasts for approximately three and a half years. The education includes 210 European Credit Transfer and Accumulation System (ECTS) credits. The content and extent of the undergraduate nursing education fulfil the criteria set in European Union Directive 2005/36/EC and 2013/55/EC.

The attempts to include palliative care in nursing curricula have been increasing during the last 10 years (Cavaye & Watts, 2014). Still, there is a need to develop the extent to which palliative care is integrated into undergraduate nursing education (Cavaye & Watts, 2014; Saarto & Finne-Sovari, 2019b; Arias-Casai et al., 2019; Martins Pereira et al., 2021). A large variety of undergraduate palliative care education is seen between and within European countries. Over half of European countries (56%) reported that palliative care was not a mandatory subject in undergraduate nursing education. (Martins Pereira et al., 2021.)

Research assessing the extent of palliative care education in undergraduate nursing programs has been made in different countries. Questionnaires to the deans or directors of nursing schools have been launched in the USA (Dickinson, 2007) and in the United Kingdom (UK) (Dickinson, Clark & Sque, 2008). In the USA, 99% of nursing schools reported offering some education on end-of-life care. The end-of-life issues were presented in the nursing curricula, though on a limited basis and not in an in-depth way. (Dickinson, 2007.) In UK, all the schools reported that they have some provision on palliative and end-of-life care education, and over 95% of students have participated in the education (Dickinson, Clark & Sque, 2008). In Egypt, an online survey to educators showed that palliative care issues are included in the nursing curriculum to some measure, although the content varied in the different nursing schools (Eltaybani, Igarashi & Yamamoto-Mitani, 2021).

A cross-sectional national survey of undergraduate nursing education to educators in New Zealand, showed that all schools integrate palliative and end-of-life care in their teaching, but since the subject is not a mandatory requirement, there are inconsistencies in the education between educational institutions (Heath et al., 2021). Development needs were also reported by deans in Australia (Johnson, 2009) and in a national survey sent to nursing schools/faculties across Canada (Wilson, Goodwin & Hewitt, 2011). In Finland, 4/21 universities of applied sciences are providing palliative care education as a mandatory palliative course (n=2) or as a course in combination with other courses (n=2), based on the latest European Atlas of Palliative Care (Arias-Casais et al., 2019).

The need to develop palliative care education at the undergraduate level for nurses has been highlighted in the national reports (Saarto, 2017; Saarto, Finne-Soveri & expert working groups, 2019a; Saarto, Finne-Soveri & expert working groups, 2019b). When developing the curricula, students should be included as key stakeholders (Jagera et al., 2020). The focus on the research of palliative care education has been mainly on deans, or education assessments of palliative care in nursing education as addressed earlier. In this study, the undergraduate nursing education refers to education provided in the Finnish UASs and the nursing student refers to nursing students who are studying in a Finnish or Swedish nursing program at some of these UASs. Palliative care nursing education refers to education of the subject in the undergraduate nursing program.

2.3.2 Post-graduate nursing education

The Bologna declaration has also affected postgraduate nursing education, which is provided at the master's and doctoral degree levels in many countries. The Bologna process has also promoted the advanced practice nurse (APN) role on the master's degree level. (Collins & Hewer, 2014.)

In Finland, post-graduate education for bachelor's degree nurses is provided in the UASs and Universities (Konkola et al., 2021). The master's degree education provided by UASs are 90 ECTS and the students must have at least two years of working experience of the nursing field before the education (Finlex 932/2014; Finlex 18.12.2014/1129). In universities, the bachelor's degree is 180 ECTS and the master's degree is 120 ECTS. The doctoral programs are provided only by the universities. Both the UASs and universities can provide national specialization education as post-graduate studies. These studies do not give a degree, but the aim is rather to deepen the competence of the student in some specific subject. (Konkola et al., 2021.)

According to a report published by European Association for Palliative Care, the education of palliative care should be provided for nurses at different levels, namely: basic education (A), advanced education (B) and specialized education (C) (de Vlieger et al., 2004). Based on the work of the EduPal-project, an agreement between the UASs was made to develop a national post graduate palliative care specialization education (30 ECTS) in 2019. The specialization was launched in 2020. Also, a national master's degree APN program for palliative care was developed in the UASs and piloted in the project. (Sunikka et al., 2021.)

2.4 Context of palliative care nursing competencies

The concepts of competence and competency are sometimes used as synonyms (Axley, 2008) or with a different emphasis; competence to refer more on job-related, action, behavior or outcome of performance and competency addressing the underlying characteristics and qualities that enhance effective performance in a job (McMullan et al., 2003). However, converse definitions are also suggested, such as competence as a capacity, knowledge, the potential to perform skills and competency as the actual performance in a particular situation (Nolen, 1998; McConnel, 2001). The concepts of competence or competency are often used and discussed, although no extensive consensus of these terms can be addressed (Cowan, 2005; LeDeist & Winterton, 2005; Smith, 2012; Liu & Aungsuroch, 2018).

When conceptualizing competence, three different main approaches rise from the literature. Firstly, the behavioristic approach where the focus is on tasks and skills. To achieve competence, the person must achieve a sufficient level of performance to successfully carry out a defined task. The assessment relies often on observation of performance. (Stoof et al., 2002; Cowan et al., 2005; Le Deist & Winterton, 2005; Garside & Nhemachena, 2013; Liu & Aungsuroch, 2018.) The second approach is generic, where the focus is more on transferable attributes. Competence is seen as a wide range of skills that change related to different contexts. (Gonczi, 1994; Watson et al., 2002; Cowan et al., 2005; Garside & Nhemachena, 2013.) Thirdly, competence is approached from a holistic perspective, where competence is seen as more than a sum of the individual competencies, whereby it brings together the knowledge, skills, attitudes and values needed to effectively perform certain healthcare activities (Gonczi, 1994; Watson et al., 2002; Cowan et al., 2005; Le Deist & Winterton, 2005; Garside & Nhemachena, 2013; Liu & Aungsuroch, 2018).

2.4.1 Nursing competence

There are several concept analysis and literature reviews defining nursing competencies (Axley, 2008; Scot Tilley, 2008; Valloze, 2009; Smith, 2012; Garside & Nhemachena, 2013; Liu & Aungsuroch, 2018). Nursing competence is seen as an essential issue to provide safe nursing (Axley, 2008). Nursing competence also refers to the nurse's role, provided activities and professional standards (Axley, 2008; Valloze, 2009). A holistic approach is used in many descriptions when competence refers to knowledge and skills integrated with other aspects, such as

critical thinking, proficiency, motivation and professionalism (Smith, 2012). In addition, in previous research, the trend toward the holistic approach in the definition of nursing competence has been highlighted (Liu & Aungsuroch, 2018). Nursing competencies in this light have been defined as "functional adequacy and the capacity to integrate knowledge, skills, attitudes and values" (Meretoja et al., 2004, p. 330) and as a holistic approach which refers to an expected level of knowledge, nursing skills and values which can be transferred between nursing contexts (Kajander-Unkuri 2015, p. 17).

Competencies have become increasingly important in nursing education since the education has undergone major changes in the last ten years. The Bologna process and cooperation on the European level have strengthened competence-based learning in nursing education (Öhlen et al., 2011; Collins, 2014; European Higher Education Area (EHEA), 2018). In Finland, the UASs have autonomy in curriculum development. Still, the definitions of the European Union Directive 2013/55/EU and a consensus-based report defining the common competencies and content to undergraduate nursing education direct the development of the curriculum (Silen-Lipponen & Korhonen, 2020).

2.4.2 Palliative care nursing competence

Nurses working in different contexts still report suboptimal knowledge about palliative care (Smets et al., 2018; Achora, 2019). Nevertheless, they report favorable attitudes toward palliative care (Achora, 2019). Undergraduate nursing students have feelings of unpreparedness to provide palliative care and to encounter death as well (Ek et al., 2014; Malone et al., 2016; Croxon et al., 2018). In addition, nursing students' lack of palliative care competence has been reported (Dobrowolska et al., 2019; Chover-Sienna & Martinez-Sabater, 2020). However, education of palliative care has shown to increase the competence of the subject (Smets et al., 2018; Achora, 2019).

The focus on previous studies on palliative care competence has been more on the effects of education interventions on undergraduate students' attitudes toward dying patients or to their palliative care competence levels (Dimoula et al., 2019; Chover-Sierra & Martinez-Sabater, 2020; Ferri et al., 2021; Hökkä et al., 2021a). Qualitative studies have focused on students' experiences of education interventions (Hold et al., 2015; Hjelmfors et al., 2016) or students' experiences when encountering death (Juvet, 2021; Örsterlind et al., 2016).

Palliative care competence levels of nurses working in different contexts have been assessed with The Palliative Care Quiz for Nursing (PCQN) instrument (20 items) developed by Ross et al. (1996). The measurement tool was developed to measure nurses' knowledge of palliative care and to stimulate discussion about the provision of palliative care. (Ross et al., 1996.) The PCQN has been widely used in different countries to measure nurses' knowledge of palliative care. For example, in Saudi-Arabia the nurses' (n=731 in different contexts) knowledge of palliative care was assessed as low (Abudari et al., 2014). As well as nurses' palliative care knowledge was assessed as low in a Korean university hospital (Choi et al., 2012). In the USA, nurses' knowledge of palliative care (in oncology, intensive care and heart failure settings) was assessed as moderate (Autor et al., 2013). As also in Spain, the nurses' knowledge of palliative care (in inpatient wards, emergency unit or critical care settings) was assessed as moderate (Chover-Sierra et al., 2017).

Several other measurement tools to assess nurses' palliative care competence and attitudes also exist, such as the Frommelt Attitude toward Care of the Dying questionnaire (Frommelt, 1991), the Questionnaire on the Knowledge, Attitudes, and Behavioral Intentions of Medical personnel in Providing Artificial Nutrition and Hydration (Ke et al., 2008), the Scale of End-Of-Life Care in ICU (EOL-ICU) (Montagnini, Smith, Balistrieri, 2012) and the End-of-Life Care Questionnaire (EOL-Q) (Montagnini et al., 2021). Although palliative care measurement tools are commonly available and shown as potentially reliable, there is still a need to validate the tools when using them in other cultures (Soikkeli et al., 2019). There is a lack of tools available which could be used to evaluate palliative care education and content in nursing education and nursing students' self-assessed competence of the subject.

Internationally palliative care competence frameworks have been launched. The American Association of Colleges of Nursing has launched the 'CARES: new competencies and recommendations for educating undergraduate nursing students' to improve palliative care undergraduate education (Ferrell, 2016). Based on the framework, an online course is available for universities (Berry et al., 2016). In Europe, a report to develop palliative nursing in under- and postgraduate education was published in 2004 (De Vlieger et al., 2004). In addition, a palliative care competence framework for nurses has been published in Ireland (Ryan et al., 2014). Palliative care is included in the national common competence requirements and contents for undergraduate nursing education in Finland (Silen-Lipponen & Korhonen, 2020).

To ensure quality palliative care, a basic competence of the subject is needed (Hales, Zimmermann, Rodin, 2010) together with advanced palliative care

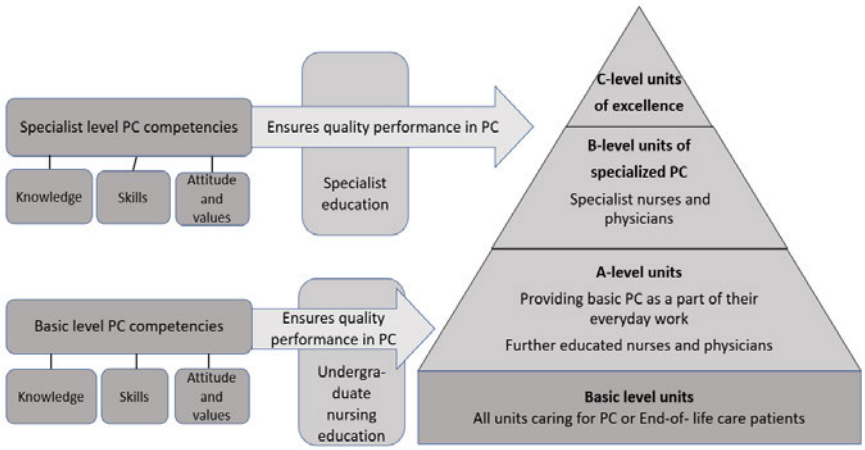
competencies (Miyashita et al., 2007; Miyashita et al., 2008; Stajduhar, Funk, Roberts, 2011). When defining palliative care competencies in nursing, Becker states that competencies in palliative care should focus on knowledge, key skills, personal qualities, attributes, and behaviors needed to perform and provide palliative care successfully. (Becker, 2000; Becker, 2007; Becker, 2009). In a concept analysis of the term palliative care nursing, palliative care nursing competence and self-competence were seen as the antecedents for quality palliative nursing. Palliative care competence includes knowledge, skills, values and attitudes (heightened through self-awareness), that a nurse should possess to successfully perform quality palliative care. (Kirkpatrik, 2017.)

Although there is a need to develop palliative care competence, education and curricula in undergraduate and post-graduate nursing studies, relatively little focus has been placed on defining palliative care nursing competencies in different levels of palliative care provision and education. In this study, palliative care nursing competence refers to a holistic approach of competence including knowledge, nursing skills, values and attitudes (heightened through self-awareness), which can be transferred between nursing contexts.

2.5 Summary of the theoretical framework

The need to define nursing competencies aligned to the different levels of palliative care provision is imminent to develop competence-based education for every level. These competencies should form the framework when developing palliative undergraduate and post-graduate education of palliative care for nurses (Figure 1).

When defining palliative care nursing competence, an overview of previous research of the subject is needed to gain insight. In addition, there is a need to launch empirical studies to gain professionals' perspectives of the required palliative care competencies. There is also a need for empirical study to discover the views of undergraduate nursing students on the development needs of palliative care education. In this study, the basic level of palliative care nursing competencies refers to competence the nurses have to possess to provide quality palliative care at the basic level. Specialist level palliative care nursing competencies refer to competencies the nurses should possess to provide quality specialist palliative care. Undergraduate nursing education should enable the achievement of basic level palliative care nursing competencies and post-graduate education should be available to ensure specialist level palliative care nursing competencies.



PC=Palliative care

Fig. 1. Nursing competencies and education needed in the different levels of palliative care provision.

3 Aims and research questions of the study

The main aim of this study was to describe the palliative care nursing competencies required from nurses in different palliative care levels and to examine nursing students' views of palliative care education.

The study consisted of three phases. The aim of the first phase was to synthesize the empirical evidence of palliative nursing competencies and to describe whether these competencies differ across the different levels of palliative care provision (sub-study I). The aim of the second phase was to describe the professional's views of palliative care nursing competencies needed in the different levels of palliative care provision (sub-study II). In the third phase, the aims were to examine the nursing students' views of palliative care contents in nursing education and to assess their self-assessed levels of palliative care competence (sub-study III). In addition, the aim of this phase was to describe the undergraduate nursing students' views of palliative care education in the undergraduate nursing program (sub-study IV). The study will produce new knowledge of a) palliative care nursing competencies to promote the quality of care for patients and families and b) palliative care education to promote quality nursing education.

1. Phase I: Palliative care competencies based on earlier studies
   The research questions for sub-study I (publication I):
   - What are the required palliative nursing competencies to provide palliative care?
   - How do the required competencies differ in different levels of palliative care provision?
2. Phase II: Professionals' views of palliative care competencies
   The research question for sub-study II (publication II):
   - What are the required palliative nursing competencies in basic and specialist levels, from the perspectives of multiprofessional groups?
3. Phase III: Students' views of palliative care education and competencies
   The research question for sub-study III (publication III):
   - What are the students' views of the coverage of the palliative care contents in nursing education?
   - What are the students self-assessed competencies of palliative care?
   - Is previous education or work experience associated to the students' views of the education or their competencies in palliative care?

   The research question for sub-study IV (publication IV):

- What are the development needs of palliative care education from the perspectives of nursing students?
- What are the students' views of the preferred palliative care education?
- What are the factors facilitating or hindering the learning of palliative care, from the perspectives of nursing students?

4 Materials and methods

The study consisted of three phases, including four sub-studies and publications (I-IV). In the first phase (sub-study I), the empirical evidence of palliative nursing competencies was synthesized with a systematic integrative review. In the second phase (sub-study II), the professionals' views of palliative care nursing competencies were studied with a descriptive qualitative design. In the third phase, a cross-sectional survey was approached. Students' views of palliative care contents in nursing education and their self-assessed competencies of the subject were assessed with a quantitative study design (sub-study III), while students' views of palliative care education based on their answers to the open-ended question were further studied by using a descriptive qualitative design (sub-study IV). The detailed proceeding of the sub-studies is shown in Table 1.

4.1 Phase I: A systematic integrative review of palliative care nursing competencies (Sub-study I)

In the first phase, sub-study I was performed as a systematic integrative review. This systematic review type allows the inclusion of diverse methodologies in the same review. (Whittemore & Knafl, 2005). The review protocol was registered in Prospero: CRD42018114869. The systematic integrative review followed the procedures for conducting reviews of health interventions outlined in the Centre for Reviews and Dissemination (CRD). (Centre for Reviews and Dissemination, 2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) (Figure 2) was used as a guideline when launching and reporting the review (Moher, Liberati, Tetzlaff, & Altman, 2009).

Table 1. The detailed proceeding of phases I–III and sub-studies 1–4.

Phase	Phase I: Palliative care competencies based on earlier studies	Phase II: Professionals' views of palliative care competencies	Phase III: Students' views of palliative care education and competencies	
Description	Sub-study 1	Sub-study 2	Sub-study 3	Sub-study 4
Aims	To synthesize the empirical evidence of palliative nursing competencies and to describe whether these competencies differ across the different levels of palliative care provision	To describe the professionals' views of palliative care nursing competencies needed in the different levels of palliative care provision	To examine the nursing students' views of palliative care contents in nursing education and to assess their self-assessed levels of palliative care competence	To describe the undergraduate nursing students' views of palliative care education in the undergraduate nursing program
Study design	Systematic integrative review	Descriptive qualitative study	A cross-sectional survey	
			Quantitative study	Descriptive qualitative study
Participants/ data	Original articles included (n=21)	Nurses and associate nurses (n=170) Physicians (n=28) Other professions (n=24)	Nursing students (n=1331)	Nursing students (n=766)
Method	Thematic analysis	Inductive and deductive content analysis	Descriptive statistics, chi square test, explorative factor analysis	Inductive content analysis
Publication	I	II	III	IV

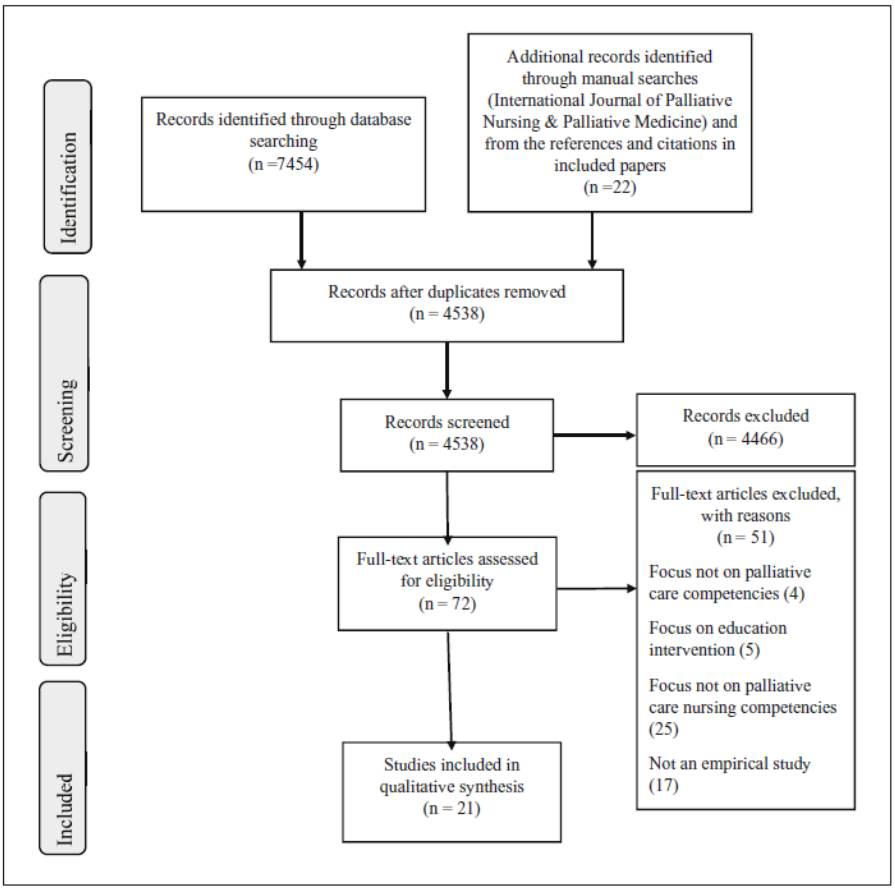


Fig. 2. Prisma flow chart. Reprinted with permission from SAGE Publishing.

4.1.1 Search strategy

The phenomenon of interest was palliative care nursing competencies required in different levels of palliative care provision and in various healthcare contexts providing palliative care. (Aromataris & Pearson, 2014). The search strategy was created with the help of an information specialist who had experience in creating search strategies in the field of nursing research. The created search strategy was carefully revised and accepted by the whole research team. The systematic search was performed in August 2018 and updated in January 2020. Systematic searches

were launched in CINAHL, PubMed, Academic Search Premier, Scopus and Medic databases. The search terms and inclusion criteria were based on the PICo format (Table 2).

Table 2. Search terms and inclusion criteria based on PICo.

PICo	Inclusion	Exclusion	Search terms
Population	Focus on bachelor's degree in nursing or registered nurses' palliative care competencies	Focus on other healthcare professionals' competencies or organization competency development	'nurs*'
Phenomena of Interest	Focus on palliative or end-of-life care competencies (knowledge, skills, abilities, attitudes, behaviors)	Focus on education interventions effects on competencies or education interventions or curricula development	'competenc* or professional competence or skills'
Context	Empirical studies in different healthcare contexts and levels of palliative care provision	Focus not on palliative or end-of-life care competencies	'palliative care or hospice care or end-of-life care or terminal care'

* Key MeSH terms were used whenever possible in all databases. The terms were adapted as necessary for each database.

4.1.2 The data and quality appraisal

A total amount of 7454 studies were found. After the exclusion of duplicates 4538 articles were screened based on titles and abstracts. The screening was performed independently by two members of the research team (M.H., T.P). After this phase, the full-text articles (n = 72) were screened for eligibility, as well. The quality appraisal was performed independently by two researchers (MH, P.H.M) to the included articles (n=21). The Hawker et al. scale, which is developed to assess heterogenous studies, was used for the quality appraisal (Hawker, Payne, Kerr, Hardey & Powell, 2002). This scale has been widely used in systematic reviews performed in the field of palliative care (Claessens, Menten, Schotsmans & Broeckaert, 2008; Firn, Preston & Walshe, 2016). A total of 21 research articles were included in the review from different countries (Table 3). The articles were published between 2001 and 2018.

Table 3. The countries where the research was launched.

Country	Amount	Authors
United States	n=8	Wright 2001; Crump, Scaffer & Schulte 2010; Reinke et al. 2010; Valente S & Saunders 2010; White & Coyne 2011; White, Coyne & White 2012; White, McCLelland, VanderWielen & Coyne 2013; White, Roczen, Coyne & Wiencek 2014
United Kingdom	n=3	Johnston & Smith 2006; Kennedy et al. 2015; Somerville 2007
Sweden	n=2	Bergdahl, Wikstrom & Andershed 2007; Lindberg et al. 2012
Multiple countries	n=2	Coffey et al. 2016; Smets et al. 2018
Belgium	n=1	Van der Elst et al. 2013
Canada	n=1	Arnaert & Wainwright 2009
China	n=1	Mok & Pui 2004
Brazil	n=1	Sousa & Alves 2015
Netherlands	n=1	Rietjens, Hauser, van der Heide & Emanuel 2007
Colombia	n=1	Zuleta-Benjumea, Munoz, Velez, Krikorian 2018

4.1.3 Data extraction and analysis

The data was extracted independently by two reviewers (M.H, P.H.M) using a pilot-tested template (Table 2, publication I) developed for the integrated systematic review (Jones & Evans 2000; Centre for Reviews and Dissemination, 2009). An adapted PICO framework was used to build the data extraction template, as follows: P = participants/population (nurses, patients, stakeholders who are studied regarding nursing competencies); I = intervention or phenomena of interest (palliative care nursing competencies); C = context (different levels of palliative care provision and palliative care provided in various healthcare contexts) and O = outcome (competencies). It included information about the author, country, research, method(s), main characteristics of the study sample/participants (e.g., age, gender, education), context/level of palliative care and the key findings. There were in total 7470 participants in the included articles. The participants were nurses, nursing students, patients, and stakeholders (Table 4).

Table 4. The participants in the systematic review.

Participants	Amount
Nurses	n= 6811
Patients	n= 588
Nursing students	n=21
Stakeholders	n=50
Total	n=7470

Because of the heterogeneity of the aims, methods and outcomes, a qualitative approach was chosen to summarize the included data (Jones, 2000; Centre for Reviews and Dissemination, 2009; Whiting, 2009). A three-stage thematic analysis was conducted to interpret the results (Thomas & Harden, 2008). The process proceeded from 'line-by-line' coding of the results of the included articles (n = 198), to further organize codes into 'descriptive themes' (n = 20). The descriptive themes were used to create the 'analytical themes (n=6) (More detailed description in 'Publication I').

4.2 Phase II: A descriptive qualitative study of professionals' views of palliative care competencies (Sub-study II)

In the second phase, a descriptive qualitative study design was performed in sub-study II to achieve a comprehensive overview of multi-professional workgroups views of the required palliative care nursing competencies in the different levels of palliative care. To find the most representative participants, the sample consisted of a purposive sample of multidisciplinary professionals working with palliative care in different settings and levels of palliative care (Polit & Beck, 2017). The professionals were invited to participate in workshops organized in different parts of Finland. The workshops were organized either at the UASs or the workplace of the workshop participants, by teachers from the UASs participating in the EduPal project.

4.2.1 Participants and data collection

In total, 222 professionals participated in the workgroups. Of the professionals n= 132 were registered nurses, 69 of them working on a specialist level and 63 on a basic level. The other participants were licensed practical nurses (n=35), physicians (n=28), nursing managers (n=9), experts from third sector organizations (n=7),

spiritual care professionals (n=4), social workers (n=3), physiotherapists (n=3) and an elderly care professional (n=1).

The information of eligible participants was achieved from managers from the organizations. In total 36 workgroups were launched in 21 workshops. One workshop could include more than one workgroup.

The data was collected by a questionnaire developed by a multidisciplinary expert group to reach the aim of the study. The questionnaire consisted of 10 open-ended questions, covering questions about which competencies are relevant to the different levels of palliative care to different professionals, along with other aspects of palliative care development. The questionnaire was pretested on one workgroup before the data collection. No changes were required based on the pre-test and therefore the pre-test data was included in the final research data. The participants in the workgroup discussed their views of the required palliative care competencies and one of the members of the workgroup documented their answers on paper or, in a few workgroups, documented their answers by computer to a word document. The data consisted of 36 filled questionnaires from the multi-professional workgroups and 22 field diaries from the facilitators.

The teachers of the UASs and universities acted as moderators in the workgroups. The moderators were available for the professionals to clarify any questions, otherwise they did not participate to the discussions. The moderators observed the discussions and made field notes. The duration of the workshops was two to four hours.

4.2.2 Data analysis

At the beginning, all the data collected was transcribed verbatim. The manifest content was chosen to be analyzed, and the unit of analysis was set as either a word, phrase, sentence, or many sentences, which constitutes a unit of meaning. (Kyngäs, 2019.) In the data analysis, an inductive and deductive approach alternated during the process.

The basic level data was analyzed using inductive content analysis, where categories were emerging from the data. In the reduction phase, meaningful expressions related to the study questions were coded and then grouped based on similarities in content. The abstraction phase followed, where the subcategories and main categories were organized and named. An example of the analysis can be found in Figure 3. (Kyngäs, 2019.) The number of codes was counted, and the basic level data consisted of 651 codes.

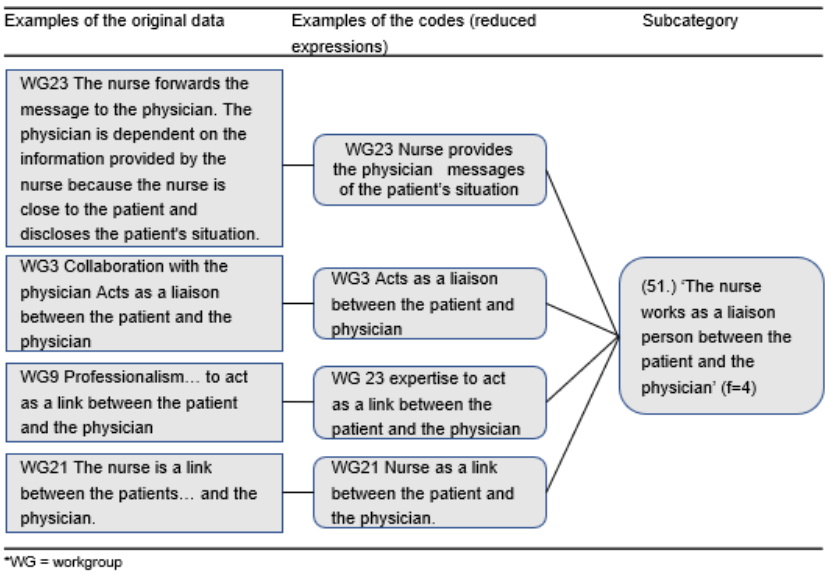


Fig. 3. An example of the coding procedure how the subcategory 'The nurse works as a liaison person between the patient and the physician' (f=4) was produced inductively.

The specialist level analysis consisted of two parts. In the first part a deductive approach was chosen to the analysis of the specialist level, since many workgroups expressed that the specialists needed all the same competencies as nurses on the basic level and moreover specialist competencies. Therefore, the basic level categories were used as a structured matrix when analyzing the specialist level data (Graneheim, Lindgren, Lundman, 2017; Kyngäs & Kaakinen, 2019). After analyzing the specialist data, it appeared that there were still codes including new information that was unique to the specialist level data and did not fit into the basic level matrix. These codes were grouped using an inductive content analysis approach in the second part of the specialist level analysis. In total, the specialist level data consisted of 465 codes. A more detailed description of the phases of the analysis can be found in Table 5.

Table 5. Description of the phases used in the analysis process.

Data	Approach
Basic level data	Inductive content analysis, the categories emerged from the data and no theoretical framework was used
Specialist level data (first part of the analysis)	A deductive approach, the categorization of the basic level competencies formed the framework of the analysis
Specialist level data (second part of the analysis)	Inductive content analysis, the data that did not fit into the framework based on basic level analysis was included. No theoretical framework was used, and the categories emerged from the data.

4.3 Phase III: A cross-sectional survey of students' views of palliative care education and competencies (sub-studies III and IV)

In phase III, a national cross-sectional survey to final year undergraduate nursing students was launched. The cross-sectional survey research was chosen since the design allows to obtain information of prevalence and interrelations of phenomena in the chosen population. The survey included closed-ended items and an open-ended question to allow a richer and broader perspective of the phenomenon of interest (Polit & Beck 2017). All UASs providing undergraduate nursing education (n=21) at the time of the data collection participated in the study. The inclusion criteria for the participants were that the students were in their last year of their studies, and they were studying in a Finnish or Swedish undergraduate bachelor's degree nursing program in a Finnish UAS.

4.3.1 Participants and data collection

The final-year undergraduate nursing students were chosen as participants in the national cross-sectional study using a convenience sampling. The data collection was aimed to all final year nursing students in Finland. The aim was to include all the students which could be reached at the time of data collection (total amount of all the study subjects available). The final year nursing students were chosen since they were expected to have experience of the phenomenon of interest, namely the palliative care contents and the development needs of palliative care teaching in nursing education (Polit & Beck 2017). The administration of the UASs named a contact person, which in 19 of the UASs distributed the paper questionnaires to final-year nursing students during a teaching session and in two of the UASs, sent

the questionnaire as a Webropol-online questionnaire to the students. The data collection was made from autumn 2018 to spring 2019.

The questionnaire was delivered to 1412 students, of which 1331 (94%) provided an eligible response (Sub-study III). Of the 1331 students, 766 (57.6%) provided data to the open-ended question (Sub-study IV). The contact persons estimated that there were a total of 1868 final-year nursing students in the student groups at the time of data collection. Therefore, the respondents in sub-study III represented 72% of all the final year student groups enrolled in the UASs at the time of data collection. Most of the participants were females and a more detailed description of the participants is shown in Table 6.

Table 6. Descriptions of the participants in sub-study III and sub-study IV.

Characteristics	Sub-study III	Sub-study IV
Number of participants	1331	766
Age in years, median (range)	25 (20-58)	25 (20 - 58)
Gender, n (%)		
Female	1128 (84.7)	678 (88.5)
Male	191 (14.4)	80 (10.4)
Did not define or answer	12 (0.6)	8 (1.1)
Previous health or social care education, n (%)		
None	773 (58.1)	432 (56.4)
Practical nurse	515 (38.7)	307(40.1)
Other education	40 (3.0)	27(3.5)
Unanswered	3 (0.2)	0 (0)
Previous work experience in social or healthcare, n (%)		
No	507 (38.1)	273 (35.5)
Yes	820 (61.6)	491(64.3)
Unanswered	4 (0.3)	2(0.2)

4.3.2 Questionnaire

The questionnaire consisted of seven background questions, namely: UAS, age, degree program, academic year of studies, gender, and previous social- and healthcare education or work experience. Based on the research questions the questionnaire included questions of; 1. the students' views of the coverage of the different palliative care contents in nursing education (14 items) and 2. students'

self-assessed competencies in different aspects of palliative care (14 items). The questionnaire also included individual questions of the students' views on 1) the content of palliative care education as a whole; 2) the usefulness of palliative care education; 3) the need for palliative care competence in their future work and 4) their self-assessed palliative care competence as a whole. The questions were asked using a four-point Likert scale and "I do not know" was also a response option.

What palliative care content the students would have preferred to learn about more during their studies (14 items) was also asked and the students had the possibility to choose one or more of the items. In addition, questions on whether they had met or cared for a patient in palliative or end-of-life care during their studies were asked. These questions were asked using yes/no alternatives. The questionnaire included one voluntary open question, namely: 'Please freely share your thoughts on how the education of palliative nursing should be developed'.

The questionnaire was developed based on earlier literature (De Vlieger et al., 2004; Gamondi, Larkin, Payne, 2013a; Gamondi, Larkin, Payne, 2013b; Ryan et al., 2014) and the items were generated by a multidisciplinary expert group. The content validity of the questionnaire was tested by conducting an expert evaluation. The Content Validity Index (CVI) was used to test the content validity based on the expert evaluations. The Item- level CVI (I-CVI) was 0.875 for two items and 1 for the rest of the items. The CVI average (S-CVI/Ave) for the entire questionnaire was 0.99. These numbers refer to excellent content validity, since in excellent content validity the I-CVIs are recommended to be 0.78 or higher and the S-CVI/Ave to be 0.90 or higher. (Polit, Beck & Owen, 2007.) An explorative factor analysis was launched to the data to evaluate the construct validity of the questionnaire concerning the questions: 1. of students' views of the palliative care contents (14 items) and 2. of their self-assessed palliative care competencies (14 items). As a result, two factor solutions were generated for each of the research questions. Item analysis and Cronbach alpha was used to evaluate the internal consistency. The alpha values ranged from 0.80 to 0.89, which indicates good internal consistency. In research question 1., the variable loadings about palliative care contents ranged from 0.426 to 0.725 and in the research question 2. self-assessed palliative care competencies ranged from 0.489 to 0.704. The cumulative variance of the factors' solution in the first research question regarding palliative care contents was 57% and in the second question regarding the self-assessed palliative care competence it was 51%, which strengthen the assumption that the internal structure of the questions is acceptable. (DeVon et al., 2007.) The comprehensibility, clarity and length of the questionnaire was assessed through a

pre-test to one group of final-year nursing students (n=15) (Polit, Beck & Owen, 2007). No further needs to make amendments merged from the pre-test. A more detailed description of the development of the questionnaire can be read from publication III. The questionnaire can be found in Appendix I.

4.3.3 Data analysis

Quantitative analyses in sub-study III (Publication III) were made with descriptive statistics, such as percentages, medians and ranges, and with the chi-squared test for the comparison of categorial variables between the students with and without earlier education or with and without working experience in social- or healthcare. Statistical significance was set as $p < 0.05$. Explorative factor analysis was used to study the factor structure from each research question; 1. students' views on the coverage of palliative care contents in their education (14 items) and 2. students self-assessed palliative care competencies (14 items). Both questions were analyzed with orthogonal rotation (Varimax). Kaiser-Meyer-Olkin's measure of sampling adequacy and Bartlett's test for sphericity were used to ensure the possibility of performing factor analysis. Cronbach's alpha served as a measure of the internal consistency of the factors. SPSS Statistics, version 26.0 was used to perform the analysis (IBM Corp, Armonk, NY, USA).

When analyzing the data collected by the open question in sub-study IV (Publication IV) a qualitative approach was launched. A descriptive qualitative study design was performed to achieve a comprehensive overview of the phenomenon of interest. An inductive content analysis was used when analyzing the data (Kyngäs, 2019.) The focus in the analysis was only on manifest contents.

In the first phase of the content analysis, the data were transcribed verbatim, and the researchers carefully read through the data several times. During this phase, the researchers noticed that the students' responses reflected the development needs of palliative care education; moreover, they also provided their preferences for how the education should be delivered, along with factors that promoted or hindered their learning. Therefore, the aims of the study were expanded to cover students' preferences for how palliative care education should be provided and which factors promote or hinder their learning. This way of proceeding is in line with the nature of qualitative research, where the aim and research question can change during the analysis process when the data direct the process (Kyngäs, 2019). The data was reduced to codes and numbered to link the codes to the original data. The reduced codes were grouped by similarities in content and then abstracted by forming

subcategories, categories, main categories and unifying categories to that level that could be applied to all data. (Kyngäs, 2019; Elo, Kyngäs,2008.) The total number of reduced codes in the data was 2304. (A more detailed description is given in ‘Publication IV’).

5 Results

5.1 Palliative care nursing competencies (Sub-study I)

The thematic analysis produced six key themes: (1) competency to collaborate with the patient, family and team; (2) competency in communication and cultural issues; (3) clinical competency; (4) psychosocial and spiritual competency; (5) ethico-legal competency and (6) competency related to a nurse's professional role and leadership. Each theme included a set of sub-themes (Appendix 2).

In the theme '*competency to collaborate with the patient, family and team'*, it was highlighted that the nurses should have competence in social interaction. This means that the nurses have competence to interact with the patient and family (Arnaert & Wainwright, 2009). In addition, they should have abilities to assess and understand family dynamics (Wright, 2001) and have interpersonal skills when interacting with the patient and families (Johnston & Smith, 2006). When collaborating with the patients and family, the nurses should have a supporting (Van der Elst et al., 2013), caring, open, reflective, professional and non-judgmental attitude (Mok & Pui, 2004; Bergdahl, Wikstrom & Andershed, 2007; Reinke et al., 2010; Van der Elst et al., 2013). They should promote the collaboration in the healthcare team (Reinke et al., 2010; Van der Elst et al., 2013) and have competence in patient counselling (Lindberg et al., 2012; Kennedy et al., 2015).

'Competency in communication and cultural issues' was seen as essential for nurses. When communicating with the patients and families it is important to encounter the person as whole and unique person (Johnston & Smith, 2006; Bergdahl, Wikstrom & Andershed, 2007; Reinke et al., 2010; Van der Elst et al., 2013). Nurses should possess the skills to facilitate dialogue, communicate and listen to the patients and family actively (Wright, 2001; Johnston & Smith, 2006; Reinke et al., 2010; Kennedy et al., 2015). They should also have competencies to communicate difficult issues with patients and families (Wright, 2001; White & Coyne, 2011; White, Coyne & White, 2012), and to have a skill set to communicate with persons from different cultures (Somerville, 2007).

'*Clinical competency'* was highlighted to be an integral part of the nurses' competencies. Nurses should possess an understanding of the meaning and philosophy of palliative care, as also of the end-stage disease process and the signs of impending death (Wright, 2001; Reinke et al., 2010; White & Coyne, 2011; White, Roczen, Coyne & Wiencek, 2014). They should have competence in pain

and symptom management (Johnston & Smith, 2006; Reinke et al., 2010; White & Coyne, 2011; White, Coyne & White, 2012; Coffey et al., 2016) and of palliative sedation as well (Zuleta-Benjumea, Munoz, Velez, Krikorian, 2018). Nurses should also have competencies in person-centered and holistic care planning (Kennedy et al., 2015; Sousa & Alves, 2015).

In the theme *'Psychosocial and spiritual competency'* nurses' competence to support the patient and family during the illness as well as after the patient's death, were highlighted (Bergdahl, Wikstrom & Andershed, 2007; Lindberg et al., 2012; Sousa & Alves, 2015). Nurses should possess competence to manage social and spiritual needs, provide interventions and support related to these aspects (Lindberg et al., 2012; Coffey et al., 2016).

'*Ethico-legal competency'* were also needed to provide quality palliative care. Nurses need knowledge of legal issues (Wright, 2001; Sousa & Alves, 2015; Coffey et al., 2016) and competence to provide advocacy to people by giving realistic information and support to patients and families in decision making (Wright, 2001; Coffey et al., 2016). Nurses should have competence to interact on behalf of the patient when needed (Mok & Pui, 2004). Ethical competence is important since it relates to nurse's decision making (Kennedy et al., 2015).

Also, '*competency related to a nurse's professional role and leadership'* was identified to be important to specialist nurses; these competencies reflect on the ability to keep up to date and have in-depth knowledge of the evidence (Arnaert & Wainwright, 2009; Kennedy et al., 2015). In addition, they should have competence to guide colleagues (Arnaert & Wainwright, 2009; Kennedy et al., 2015) and they should have extended competence in clinical skills based on the role as specialists (Johnston & Smith, 2006). Competencies included in this theme were only expressed in specialist contexts. Otherwise, competencies included in the other five themes appeared in all different contexts. None of the included studies focused on defining competencies related to a specific level of palliative care provision.

5.2 Professionals' views on palliative care competencies (Sub-study II)

As a result of the content analysis of the multi-professional workgroups answers 17 main categories emerged, which included 75 subcategories merged from the basic level data. In the specialist level data, based on the deductive analysis, 12 new subcategories unique for the specialist level merged into the basic level matrix. When inductively analyzing the codes unique to the specialist level, which did not

fit to the basic level matrix, 10 main categories, including a total of 37 subcategories, were identified. Three main categories including the most reduced expressions, and subcategories related to these, are presented in more detail in the results hereinafter. All basic- and specialist level main categories and subcategories can be found in Appendix 2.

5.2.1 Basic level competencies required from registered nurses

Competence in managing the most common symptoms **(f=75**) was the main category including most reduced expressions. The main category included six subcategories namely; '*assessing the patient's symptoms and defining the need for treatment'* (f = 30), *'mastering of pharmacological and nonpharmacological methods of symptom management'* (f = 17), *'implementation of symptom relieving care'* (f = 10), *'assessing physical symptoms and defining the need for treatment'* (f = 7), *'basics of symptom management'* (f = 7), and '*assessing psychosocial symptoms and defining the need for treatment'* (f = 4).

'Assessing the patient's symptoms and defining the need for treatment' (f=30) included most reduced codes. The professionals expressed that the nurses must have competence in using measurement tools when assessing the symptoms. They highlighted that symptom assessment includes the holistic nature of palliative care. Nurses should consider all dimensions when assessing symptoms since, for example, changes in mood, social changes or existential distress, can negatively affect physical symptoms. '*Mastering of pharmacological and nonpharmacological methods of symptom management'* (f = 17) was seen as a competence area where nurses must master a wide range of different routes of medication administration, different symptom medications and also different non-pharmacological methods to relieve symptoms. They should also have competence to the '*implementation of symptom relieving care'* (f=10). Examples of the original data are given below:

> "*Comprehensive monitoring of the client's symptoms (pain, shortness of breath, mood, nutrition, physical functioning, etc.). Using ESAS in the evaluation*" (WG 31)
>
> *"… also non-pharmacological care in addition to symptom management with pharmacology methods*" (WG24)

"Have knowledge… to symptom management… implementation" (WG4)

Competence in supporting the patient and her/his closest ones **(f = 74)** was expressed as one competence area by the professionals. This main category included eight subcategories namely; *'identification of the need for, and implementation of, psychosocial support'* (f = 20), *'supporting the closest ones in palliative care'* (f = 14), *'maintenance of hope'* (f = 10), *'provision of psychological support'* (f = 10), *'coordination of spiritual support'* (f = 7), *'involving the closest ones in care'* (f = 6), *'supporting the patient in palliative care'* (f = 4) and *'utilization of multiprofessional support'* (f = 3).

'Identification of the need for, and implementation of, psychosocial support' (f = 20) meant that the nurses should have competence to identify the need for psychosocial support and they should also have competence to implement psychosocial support for the patient and closest ones. '*Supporting the closest ones in palliative care'* (f = 14) was seen as an essential competence area for the nurses. The nurses must have competence to identify the needs of the closest one and to support them. In addition, '*maintenance of hope'* (f = 10) was one competence area for nurses. The professionals expressed that the nurses should maintain hope in palliative or end-of-life care to the patient and the closest ones. They should be sensitive for the patients and closest ones wishes and enhance the feeling of hope. As some workgroups expressed:

"…psychosocial … support for the patient and their family…" (WG32)

"It is important to support the family in the end-of-life situation." (WG21)

"The nurse should be able to create a sense of positive and safe rest of life for the patient (maintain hope even if they are sick and dying)." (WG21)

Competence in basics of holistic palliative care **(f = 68)** was a main category including seven subcategories namely; *'understanding concepts and guidelines of palliative care'* (f = 15), *'basic nursing care as a part of palliative nursing'* (f = 13), *'palliative care of different patient groups'* (f = 12), *'assessment of the need for palliative care'* (f = 11), *'holistic palliative nursing'* (f = 9), *'addressing oral, skin, position and mobility issues in palliative care'* (f = 6) and *'nutrition as a part of palliative nursing'* (f = 2).

'Understanding concepts and guidelines of palliative care' (f = 15) was the subcategory including most reduced expressions. Based on the workgroups' view, the nurse should have a clear understanding of the main concepts and goals of palliative and end-of life care. They must also know the clinical guidelines which

direct the care. '*Basic nursing care as a part of palliative nursing'* (f = 13), was mentioned several times. This referred to the nurses' competence to ensure basic care to the patient. '*Palliative care of different patient groups'* (f = 12) referred to the nurses' competence to care for patients in need of palliative care in different diseases and age-groups. The following citations are examples of the original data:

"…understands the definitions of palliative and end-of-life concepts" (WG22)

"Can provide basic care and understand the meaning of it in the (palliative) care" (WG5)

"Basic knowledge of progressive diseases which leads to palliative care" (WG23)

5.2.2 Specialist level competencies required from registered nurses

'Competence in maintaining expertise and taking care of own wellbeing at work' (f = 34) was the main category including most reduced codes. It consisted of six subcategories namely; *'autonomous decision-making and expertise'* (f = 10), *'recognition of one's own limits and acceptance of support'* (f = 7), *'postgraduate education'* (f = 6), *'active self-development'* (f = 5), *'strong clinical know-how'* (f = 4) and *'critical thinking and reflection'* (f = 2).

'Autonomous decision-making and expertise' (f=10) reflected on the professionals' views, that nurses on the specialist level should have competence to independent decision making. They should have a confident attitude and ability to make care decision based on evidence. The professionals highlighted in the subcategory: '*Recognition of one's own limits and acceptance of support*' (f = 7), the importance to the ability to reflect on own recourses and competence boundaries. The nurses should be open to gain support from other peers or other professionals. *'Postgraduate education'* (f = *6)* was one of these subcategories. The professionals expressed that to gain sufficient competence to provide specialist care, the nurses should have the possibility to have postgraduate education or a specialization in palliative care. Some citations from the original data:

"Calm attitude and ability to make own care decisions independently" (WG2)

"...skills for reflection, identifying and dealing with your own resources, etc..." (WG26)

"Postgraduate education and experience, specialization…" (WG9)

'Advanced symptom management in nursing care of patients in palliative care' (f = 26) was a main category which included six subcategories namely; '*extensive know-how in symptom management*' (f = 4), '*assessment and management of advanced symptoms*' (f = 4), '*palliative sedation and the issues related to it*' (f = 6), '*special techniques for the management of symptoms*' (f = 6), '*autonomous management of symptoms*' (f = 1), and '*acute situations in palliative care*' (f = 5).

'*Extensive know-how in symptom management'* (f = 4) was a subcategory where the professionals expressed that a nurse working in specialized settings should have extensive know-how of symptom management, taking into account different diseases and the different dimensions of the care. '*Assessment and management of advanced symptoms'* (f = 4) was a subcategory where the professionals expressed the nurses' need for competence to identify, assess and implement demanding symptom care to patients in palliative or end-of life-care. The professionals stated also that the nurses should possess competence to manage *'palliative sedation and the issues related to it'* (f = 6) in one subcategory. The following citations are examples of the original data:

> *"Extensive competence in pain management + and other symptoms"* (WG17)
>
> *"…identification, implementation of demanding symptom management…"* (WG19)
>
> *"Sedation implementation and monitoring according to the doctor's instructions."* (WG9)

The main category ***'Teaching, development and research competence in palliative care'* (f = 20)** included three subcategories namely; *'Educating about palliative care'* (f = 12), *'Development of palliative care'* (f = 6) and *'Researching phenomena linked to palliative care'* (f = 2). In the subcategory *'Educating about palliative care'* (f = 12) the professionals expressed that the nurse who works at the specialist level must have competence in educating palliative care for stakeholders, other units and other nurses working at the basic level. The professionals also expressed that one part of specialist level competence is *'Development of palliative care'* (f = 6). The specialist nurses were expected to participate in development projects, to identify development needs and to facilitate development in the field. *'Researching phenomena linked to palliative care'* (f = 2) was a subcategory where the professionals participating in the workgroups expected that one part of the

specialist level competence for nurses was the ability to participate and perform research related to palliative care. As some workgroups expressed:

"…abilities to educate nurses from other units," (WG19)

"Ability to identify development needs for work." (WG4)

"readiness for research work … in palliative and end-of-life care settings." (WG26)

5.3 Nursing students' views of palliative care education and competencies (Sub-study III-IV)

As a result of the cross-sectional survey, students' views of the coverage of palliative care contents and self-assessed competencies were gained in sub-study III. In sub-study IV, the students described their views of the development needs and factors hindering and promoting the learning of palliative care. The students expressed their views of the preferred placement of education, teaching methods and teaching contents.

5.3.1 Students' views of how palliative care contents were covered in their studies

The students' views on how their nursing education covered the different content of palliative care are shown in Table 7 (Sub-study III). They assessed that the education had covered most comprehensively the basics of palliative care as 72.4% of the participants assessed that it had been covered quite good or very good. Multicultural issues in palliative care had been covered poorly as 73.3% of the participants assessed that the content had been covered quite or very incompletely during the nursing studies.

Students were asked about which aspects of palliative care they wished to be taught more in nursing education. Of the students, 55.5% wished for more education on pharmacological pain management and 55.1% on non-pharmacological pain management. The need for more education of mental symptoms in palliative care was addressed by 52.8 % of the participants.

Table 7. Nursing students' (n=1331) views of the coverage of the palliative care contents in their studies. The percentages below represent the proportion of students who chose each answer. Modified from publication III.

Factors Items	Very good	Quite good	Quite incompletely	Very incompletely	I don't know
Contents in psychosocial and existential aspects of PC					
Psychosocial support	6.3%	35.9%	42.1%	13.9%	1.7%
Mental symptoms in PC	5.3%	32.3%	45.3%	15.9%	1.2%
Supporting a PC patient's closest ones	13.9%	44.0%	29.8%	11.4%	1.0%
Communication in PC	11.2%	46.6%	31.2%	9.9%	1.2%
Existential issues	4.5%	25.2%	41.8%	24.1%	4.4%
Ethical questions in PC	14.1%	47.7%	28.9%	8.0%	1.1%
Multidisciplinary teamwork in PC	10.4%	38.5%	35.8%	12.9%	2.3%
Multiculturality in PC	2.8%	19.3%	41.6%	31.7%	4.6%
Contents in symptom management and concepts of PC					
Pharmacological pain management in PC	11.1%	44.3%	34.4%	9.5%	0.8%
Non-pharmacological pain management in PC	7.1%	37.0%	40.8%	13.8%	1.3%
Other physical symptoms than pain	8.9%	52.3%	31.0%	6.8%	0.9%
Basics of PC	13.8%	58.6%	22.2 %	4.9 %	0.5 %
Setting goals or limits of care	7.8%	44.1%	38.8%	7.4%	1.8%
End-of-life care and the dying patient	14.0%	50.6%	28.4%	6.7%	0.2%

PC, Palliative care. Unanswered questions (0-5 responders/question) are excluded from the data.

5.3.2 Students' self-assessed palliative care competencies

The respondents' self-assessed competence in different aspects of palliative care (Sub-study III) are presented in detail in Table 8. Of the students, 80.4% assessed their competence as very or quite good regarding the basics of palliative care. The proportion of students assessing their competence as very or quite good in pharmacological pain management was 62.9% and in non-pharmacological pain management 47.2%. However, 76.2% of the students reported quite or very insufficient competence in multicultural issues related to palliative care.

Table 8. Nursing students' (n = 1331) self-assessed competence in different aspects of palliative care. The percentages represent the proportion of students who chose each answer (%). Modified from publication III.

Factors Items	Very good	Quite good	Quite insufficient	Very insufficient	I can't say
Competence in psychosocial and existential aspects of PC					
Psychosocial support	5.3%	40,0%	45.3%	7.7%	1.7%
Mental symptoms in PC	4.8%	40.6%	46.2%	7.4%	0.9%
Supporting a PC patient's closest ones	11.0%	49.9%	33.2%	4.7%	1.3%
Communication in PC	13.9%	59.2%	22.1%	3.4%	1.4%
Existential issues	5.7%	32.1%	47.3%	12.4%	2.5%
Ethical questions in PC	11.6%	58.9%	24.7%	3%	1.8%
Multidisciplinary teamwork in PC	8.5%	49.8%	34.1%	5.8%	1.8%
Multiculturality in PC	1.4%	18.5%	53.7%	22.5%	3.8%
Competence in symptom management and concepts of PC					
Pharmacological pain management in PC	8.4%	54.5%	33.5%	3.1%	0.8%
Non-pharmacological pain management in PC	5.1%	42.1%	45.7%	6.5%	0.6%
Other physical symptoms than pain	9.3%	55.8%	31.1%	3.3%	0.5%
Basics in PC	10.4 %	70 %	18 %	1.2 %	0.4 %
Setting goals or limits of care	6.6%	50.6%	37.6%	4.6%	0.6%
End-of-life care and dying patient	9.5%	60.8%	26.8%	2.1%	0.7%

PC, palliative care. Unanswered questions (8-16 responders/question) are excluded from the data.

5.3.3 Students with or without work experience and previous education

Of the nursing students (Sub-study III), 51.9% assessed the palliative care education in nursing studies to be quite or very good as a whole, while 94.4% assessed that the palliative and end-of-life care education is quite or very useful. Almost two thirds (63.7%) of the students assessed that they would need palliative care competencies rather or very much in their future work. No significant

differences appeared between the students with or without previous work experience or education in social- or health care, when they assessed the overall content of their palliative care education as quite or very good (50.8 % and 53.9 % of students with and without previous work experience; 53.5% and 50.8% of students with and without previous education) or their views of the usefulness of the subject (94.7% and 93.9% of students with and without previous work experience; 94.6% and 94.3% of students with and without previous education).

Of the nursing students, 60.7% assessed their overall competency in palliative care as quite or very good. The students with previous work experience or education in social- or health care were more likely to assess their palliative care competence as quite or very good compared to others (67.0% and 50.7% of the students with and without previous work experience, $p< 0.001$; 70.1% and 54% of the students with and without previous education, $p<0.001$). In addition, the students with previous work experience or education were more likely to answer that they will need palliative care competencies quite or very much in their future work (69.8% and 53.7% of students with and without previous work experience, $p< 0.001$; 72.2% and 57.6% of the students with and without previous education, $p< 0.001$).

5.3.4 Development needs and views of palliative care education

In sub-study IV, three unifying categories were identified, namely 1) development needs and views of palliative care education (f=524), 2) the preferred palliative care education (f=1379), and 3) the facilitators and barriers to learning palliative care (f=401) (Figure 4). Each unifying category consisted of main categories, categories, and subcategories. The main categories of each unifying category are presented hereinafter. Of each main category, three categories, including most reduced expressions, and subcategories related to them, are presented in the results. All the categories are seen in the publication IV tables 4-6.

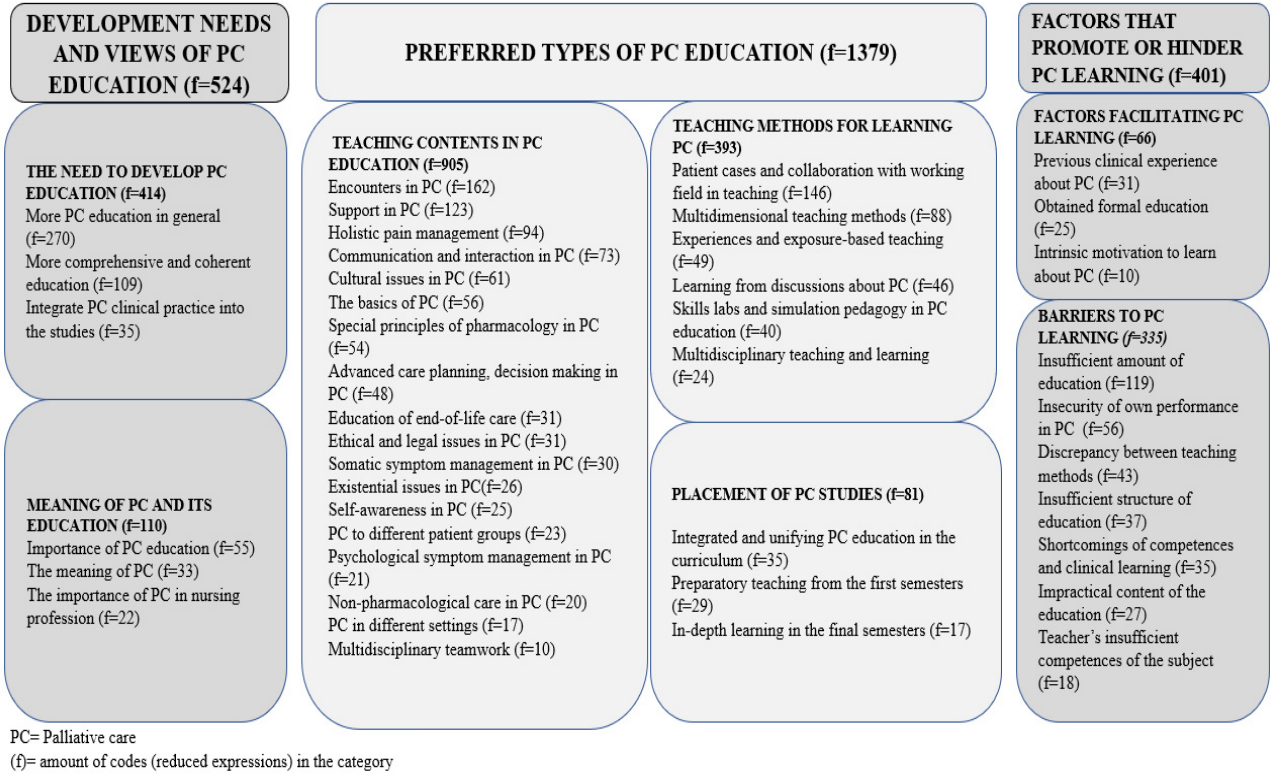


Fig. 4. Students' views of palliative care education and its development needs. Reprinted with permission from Springer Nature.

The unifying category **'Development needs and views of palliative care education'** (f=524), consisted of two main categories ***'The need to develop palliative care education'*** (f=414) and ***'Meaning of palliative care and its education'*** (f=110).

The main category '***The need to develop palliative care education'*** (f=414) included three categories. The category 'more palliative care education in general' (f=270) consisted of most reduced expressions and included six subcategories, namely '*more palliative care education'* (f=175), '*more resources to palliative care education*' (f=36), '*palliative care education should be more extensive*' (f=28), '*obligatory course available to all students*' (f=16), '*clear need to develop the education*' (f=11) and '*palliative care education should be provided to all students*' (f=4).

The subcategory '*More palliative care education' (f=175)* referred to the students wishes to gain more education of palliative care during their nursing studies. Students expressed that the palliative care education could be developed simply by providing more education of the topic. Students expressed that '*more resources to palliative care education' (f=36)* should be allocated for the teachers to teach palliative care and more time resource should be allocated to the education of the subject. Students expressed that the palliative care education should be provided as an '*obligatory course available to all students*' (f=16). As some students expressed:

> *"Definitely more education about this topic into the nursing degree!"* (414)
>
> *"More time resources should be given to palliative care teaching."* (1136)
>
> *"A separate obligatory own course to all (*students*) about palliative nursing."* (312)

'More comprehensive and coherent education' (f=109) was a category consisting of five subcategories, namely *'palliative care education as an own course'* (f=67), *'palliative care should include deep learning'* (f=15), '*comprehensive education of all aspects of palliative care*' (f=15), '*more possibilities to complete elective studies'* (f=7) and '*diverse teaching of palliative care'* (f=5).

'Palliative care education as an own course' (f=67) was the subcategory including most reduced expressions. Students expressed the need to provide palliative care education as an own independent entity in the nursing education. Students suggested a palliative care course of 2-5 credits. In terms of the content, the course should focus on the specific features of palliative care and on the

contents needed when working as a nurse. In the subcategory '*palliative care should include deep learning'* (f=15), the students highlighted the need to deepen the overall education related to palliative care. They also expressed the wish for more deep learning of end-of-life issues. In addition, they expressed the need for more extensive education in the subcategory '*Comprehensive education of all aspects of palliative care'* (f=15). Some citations from the original data:

> *"A full course on this topic would be appropriate in basic studies (5 ECTS unit.)"* (837)

> *"The theory education should be developed that the issue would be addressed in more depth."* (467)

> *"There should be more comprehensive education of all aspects."* (527)

'Integrate palliative care clinical practice into the studies' (f=35) was a category including three subcategories, namely '*Palliative care integrated into clinical practice'* (f=20), '*Clinical practice in palliative care settings'* (f=8) and '*Possibility to care for palliative care patients'* (f=7). In the subcategory '*Palliative care integrated into clinical practice'* (f=20), the nursing students expressed their view that palliative care should be integrated as objectives in different clinical practice settings. In addition, the teachers and supervisors during different clinical practices could make the topic of palliative care more explicit.

'*Clinical practice in palliative care settings'* (f=8) was a subcategory, where the students expressed their wish to have the possibility to include clinical practice in palliative care settings into their nursing education. In addition, they addressed that the possibility to clinical practice in palliative care settings should be an obligatory part of the education. '*Possibility to care for palliative care patients'* (f=7) was a subcategory, where the students expressed that it would be important to ensure that all graduating nurses would have the possibility to have the experience to care for a patient in palliative or end-of-life care during the clinical practices included in their nursing studies. The following citations are examples of the original data:

> *"*(palliative care) *could be linked to, for example, into a clinical practice for older people or something similar, so that everyone has at least some practical experience of it."* (w51)

> *"Clinical practice could include one period in a work unit focusing on palliative care."* (1097)

"During your studies, you should somehow "guarantee" that as a student you will encounter or be able to care for an end-of-life patient." 605

The main category ***'Meaning of palliative care and its education'*** (f=110) included three categories. 'Importance of palliative care education' (f=55) included the most reduced expressions and consisted of four subcategories, namely '*palliative care is an important topic*' (f=40), '*palliative care education should be an essential part of nursing education'* (f=5), *palliative care should be one of the most important topics in education* (f=5) and '*palliative care is a broad topic* (f=5*).*

In the subcategory *'Palliative care is an important topic'* (f=40) the students emphasized the importance of palliative care as a subject in nursing education. In addition, they expressed the importance of palliative care as a subject to the nursing profession. '*Palliative care education should be an essential part of nursing education'* (f=5), was a subcategory where the students expressed their view that palliative care should be an essential part of the nursing program. In addition, they expressed that as the subject is essential, it is highly relevant to integrate it as a part of the education and ensure adequate information of the subject. They also addressed that *'Palliative care is a broad topic'* (f=5) and the students have a lot to learn about the subject. As some students expressed:

"In my opinion palliative care is a very important topic for nurses." (739)

"Palliative nursing is an essential part of education, and it is important to gain knowledge about it." (874)

"A broad … topic is addressed." (687)

The category 'The meaning of palliative care' (f=33) consisted of six subcategories, namely *'palliative care will be required regardless of the workplace'* (f=12), *'palliative care affects different patient groups'* (f=6), '*just one chance to succeed'* (f=5), '*palliative care is a multidimensional issue'* (f=4), '*palliative care deserves attention* (f=3) and '*palliative care is a valuable type of care*' (f=3).

In the subcategory '*Palliative care will be required regardless of the workplace'* (f=12) the students expressed that palliative care competencies are needed in a wide range of different settings. They expressed that palliative care and end-of-life patients are not just cared in specialized palliative care settings, instead patients with incurable diseases can be faced in a large variety of different contexts, such as hospital wards and nursing homes. In addition, '*palliative care affects different patient groups'* (f=6) was a subcategory where students expressed the importance

of competence in palliative care when caring for patients in different age groups and different diagnoses. In the subcategory *'Just one chance to succeed'* (f=5), the students highlighted the uniqueness of palliative care as death occurs just once without the possibility to repeat the caring situation. Examples of the original data are given below:

> *"However, a dying patient can be met almost in every workplace."* (610)

> *"It should be emphasized that palliative care is provided for people of all ages."* (706)

> *"Caring for a dying patient is a situation where you don't want to fail*." (250)

The category 'The importance of palliative care in the nursing profession' (f=22) consisted of three subcategories namely; *'palliative care is a pivotal part of nursing*' (f=11), '*every nurse should have basic competences in palliative care'* (f=9) and '*palliative care competences build professional growth'* (f=2).

'Palliative care is a pivotal part of nursing' (f=11) was a subcategory where the students highlighted that palliative care is a part of nurses' professional competence requirements. In addition, they expressed that palliative care as a subject is constantly present in nursing. '*Every nurse should have basic competences in palliative care'* (f=9) was a subcategory where the students expressed that every nurse should have basic competencies of palliative care and patients have the right for palliative care provided by a competent nurse as well. In the subcategory *Palliative care competences build professional growth* (f=2), the students expressed that learning in palliative care facilitates the overall professional growth of the student. The competencies achieved when learning palliative care can also be applied when caring for other patient groups. As some students expressed:

> *"Palliative and end-of-life care is part of the professional requirements of nurses"* (w40)

> *"Everyone has the right to a competent nurse, including in palliative care."* (168)

> *"... palliative care can and must be applied to many other aspects of nursing."* (217)

5.3.5 Preferred types of palliative care education

The unifying category '**Preferred types of palliative care education'** (f=1379) included three main categories '***Teaching contents in palliative care education'*** (f=905), '***Teaching methods for learning palliative care'*** (f=393) and '***Placement of palliative care studies'*** (f=81). The main category '***Teaching contents in palliative care education'*** (f=905) included 18 categories. The three categories which consisted of most reduced expressions, were 'Encounters in palliative care' (f=162), 'Support in palliative care' (f=123) and 'Holistic pain management' (f=94)

The category 'Encounters in palliative care' (f=162) included five subcategories, namely '*guidance to encounter the closest ones'* (f=72), '*guidance to encounter the patients*' (f=59), '*theory and practice of palliative care encounters'* (f=16), '*importance of leisurely and empathic presence*' (f=10) and '*importance of genuine encounters'* (f=5).

In the subcategory *'Guidance to encounter the closest ones* (f=72), students highlighted the need for more guidance and practice on how to encounter the closest ones of the patients in palliative care already during the education. Students highlighted the importance of gaining sufficient education on the '*theory and practice of palliative care encounters'* (f=16) and of the nature of encounter in the subcategory '*importance of leisurely and empathic presence*' (f=10). As some students expressed:

> *"More education of how you should encounter the family of the patient."* (137)
>
> *"It would be good to get more theory and advice concerning humane encounters."* (101)
>
> *"…should be discussed more about the fact that… the patient should be offered the carer's time (the rush should not reflect the carer's work)"* (599)

The category 'Support in palliative care' (f=123) consisted of seven subcategories, namely '*knowledge of supporting the closest ones*' (f=42), '*more about psychosocial support*' (f=34), '*knowledge of support for patients'* (f=23), '*maintaining hope'* (f=7), '*knowledge of the instrumental support for the patient and family'* (f=7), '*knowledge of patient counselling'* (f=7) and '*more about supporting the closest ones to participate in care*' (f=3).

The subcategory '*Knowledge of supporting the closest ones'* (f=42) included the most reduced expressions. The students highlighted the need for more knowledge and concrete tools to support the closest ones of the palliative care patients. In

addition, support for the patient was emphasized as well in the subcategory *'knowledge of support for patients' (f=23). 'More about psychosocial support'* (f=34) was a subcategory where the students preferred to gain more education about psychosocial issues, such as how to support patients' or closest ones' feelings or coping in psychological crises in palliative care. Some citations from the original data:

> *"I wish that more could be taught about how to support the patient's family."* (1254)
>
> *"…more tools how to support the patient in palliative care…"* (289)
>
> *"I would like to see more focus on psychosocial support."* (722)

The category 'Holistic pain management' (f=94) included seven subcategories, namely '*more education of pain management'* (f=35), '*education of non-pharmacological pain treatment*' (f=19), '*thorough knowledge of pharmacological pain management'* (f=13), '*knowledge of using patient-controlled analgesia device'* (f=9), '*guidelines to pain management'* (f=8), '*knowledge of pain assessment in palliative care*' (f=6) and '*knowledge of the holistic nature of pain'* (f=4).

In the subcategory, '*More education of pain management' (f=35)* students preferred more content on pain management during the nursing education. Pain management was seen as an important subject which they need knowledge of to be able to manage the care of the patients. Students also highlighted in the subcategory '*education of non-pharmacological pain treatment*' (f=19) the need for more education about non-pharmacological pain management since all nurses should have competence to provide non-pharmacological pain management. The students preferred to achieve a '*Thorough knowledge of pharmacological pain management'* (f=13) during the nursing education to ensure quality pain management for the patients. Examples of the original data are given below:

> *"More knowledge of the pain management in the care of end-of-life patients."* (1132)
>
> *"More emphasis on non-pharmacological pain management methods in nursing education."* (w66)
>
> *"Pharmacological pain management more comprehensively because no one wants to wait to die in pain."* (404)

The main category ***'Teaching methods for learning palliative care'*** (f=393), included six categories. The three categories including most reduced expressions were: 'Patient cases and collaboration with working field in teaching' (f=146), 'Multidimensional teaching methods' (f=88) and 'Experiences and exposure-based teaching' (f=49).

The category 'Patient cases and collaboration with working field in teaching' (f=146) included five subcategories, namely '*using concrete examples from practice*' (f=56), '*lectures provided by experts in the field'* (f=31), '*visits to hospice or palliative care wards*' (f=26), '*using patient cases in education'* (f=19) and '*lectures from expert nurses in the field*' (f=14).

In the subcategory '*using concrete examples from practice' (f=56),* students preferred that concrete examples and cases from palliative care practice should be used as teaching methods when learning about palliative care. The students also emphasized education and '*lectures provided by experts in the field'* (f=31) to gain understanding of the subject. '*Visits to hospice or palliative care wards*' (f=26) was a subcategory where the students preferred that a part of the palliative care education should be provided by a visit to a hospice or palliative care ward. Some examples from the original data:

> *"To orientate with palliative care, concrete examples from the working environment should be used so that it could be concretely understood."* (308)

> *"An expert telling you about palliative care would create more interest and insight."* (562)

> *"Studies should include a visit to a hospice."* (763)

The category 'Multidimensional teaching methods' (f=88) included six subcategories, namely *'face-to-face education'* (f=63), *'more reflection tasks about the issue'* (f=7), *'online videos about palliative care'* (f=6), *'using e-learning to create flexibility'* (f=5), *'evidence-based education'* (f=5) and *'taking into account different learning styles'* (f=2).

In the subcategory *'Face-to-face education'* (f=63), the students expressed that they preferred to receive face-to-face education about palliative care, provided by the teachers. The students preferred *'more reflection tasks about the issue' (f=7)* to gain a deeper understanding of the topic. The students also expressed that '*Online videos about palliative care'* (f=6) could be a part of the palliative care education to support the accessibility of the education to all students. Examples of the original data are given below:

"Face to face teaching could be necessary to cover all aspects of palliative care." (498)

"More in-depth exercises on the topic" (892)

"…video presentations would also be supportive," (1145)

The category 'Experiences and exposure-based teaching' (f=49) included four subcategories, namely *'experts by experience telling their story'* (f=28), *'sharing care experiences with the classes'* (f=10*), 'teachers sharing their own experiences of palliative care'* (f=7) and *'students sharing their own experiences of palliative care'* (f=4). In the subcategory *'Experts by experience telling their story'* (f=28), the students expressed their wish to hear stories from the closest ones or patients of what they expected from the students. The students wanted to gain understanding, based on the stories of the patients' and closest ones' views on what makes the caring situation successful. *'Sharing care experiences with the classes'* (f=10) was a subcategory where the students highlighted that they preferred the possibility to hear nurses' stories and experiences of palliative care during the classes. In addition, the students preferred to hear the *'teachers sharing their own experiences of palliative care'* (f=7). As some students expressed:

"Lectures from expert by experience (e.g. a closest one to the patient receiving/received palliative care to talk about the experience and how successful it was, etc.)" (460)

"Even more to highlight nurses' experiences of palliative care." (90)

"I want to listen to teachers' experiences of caring for patients in end-of-life care." (309)

The main category ***'Placement of palliative care studies'*** (f=81) included three categories, namely 'Integrated and unifying palliative care education in the curriculum' (f=35), 'Preparatory teaching from the first semesters' (f=29) and 'In-depth learning during the final semesters' (f=17).

The category 'Integrated and unifying palliative care education in the curriculum' (f=35), included five subcategories, namely *'repeated teaching at different phases of education* (f=12)*, 'education as an own entirety'* (f=8), *'palliative care integrated in different courses'* (f=6), '*palliative care education as a natural part of all education'* (f=6)*,* and *'teaching after clinical practice* (f=3).

The subcategory with most reduced expressions was *'repeated teaching at different phases of education'*(f=12). In this subcategory the students highlighted

the importance that topics of palliative care were repeated during different phases of the nursing program. The students expressed their wish for palliative care *'education as an own entirety'* (f=8) to gain an overview of the subject. The students also expressed the importance of integrating palliative care in different courses in the subcategory *'palliative care integrated in different courses'* (f=6), since palliative care patients can have different diagnoses. Some citations from the original data:

"The topic could be repeated during the nursing studies." (282)

"There should be a separate module to discuss the topic." (337)

"In future, teaching should be integrated into a wider range of courses." (1052)

The category 'Preparatory teaching from the first semesters' (f=29) included three subcategories, namely *'education launched during the first semesters'* (f=16), *'education before the first patient contacts'* (f=8) and *'education from the beginning of the studies'* (f=5).

In the subcategory '*education launched during the first semesters'* (f=16), the students expressed that they would prefer the education of palliative care to start already in the first years of the nursing program. *'Education before the first patient contacts'* (f=8) was a subcategory where the students expressed, that they need palliative care education before they meet patients and their closest one's in clinical practice. The education should prepare the students to encounter the patients and their closest ones. *'Education from the beginning of the studies' (f=5)* was a subcategory where the students stated that the education should start from the beginning of the nursing education. Examples of the original data are given below:

"I feel that teaching is needed on the subject especially during the first years of study." (*740*)

"It would have been good to have had the education before the first basic clinical practice as many went to a placement where the education would have been useful." (9560)

"Teaching should be placed/started from the beginning of the studies." (591)

'In-depth learning during the final semesters' (f=17) was a category which included three subcategories, namely '*palliative care education integrated into advanced studies*' (f=7), '*palliative care education integrated into the last semesters of studies'* (f=7) and '*cases and simulations integrated into advanced studies'* (f=3).

In the subcategory '*Palliative care education integrated into advanced studies'* (f=7), the students preferred that palliative care should be integrated in their advanced studies regardless of the subject of the advanced studies. They stated that it is a useful subject to integrate in different advanced studies such as mental health studies. In addition, the students highlighted that the education should be placed into the last semesters in the subcategory: '*Palliative care education integrated into the last semesters of studies'* (f=7). The students expressed that palliative care education in advanced studies could be integrated by using cases or simulations, which are mixing palliative care aspects to the context of the advanced studies in the subcategory '*cases and simulations integrated into advanced studies'* (f=3). Some citations from the original data:

> *"there should be the possibility of more teaching at the advanced phase."* (1185)

> *"... there has been talk of palliative care at the beginning / middle stage of studies. I would suggest that palliative care should also be taught in the last semesters."* (1239)

> *"…for advanced studies, using the advanced studies context, in-depth examples of the dying patient and the encounter with death."* (222)

5.3.6 Factors that promote or hinder palliative care learning

This unifying category **'The facilitators and barriers to learn palliative care'** included two main categories: ***'Factors facilitating palliative care learning'*** (f=66) and ***'Barriers to palliative care learning'*** (f=335).

The main category ***'Factors facilitating palliative care learning'*** (f=66) included three categories, namely 'Previous clinical experience about palliative care' (f=31), 'Obtained formal education' (f=25) and 'Intrinsic motivation to learn about palliative care' (f=10).

The category 'Previous clinical experience about palliative care' (f=31) included three subcategories, namely *'palliative care clinical practice'* (f=15), *'work experience from clinical settings'* (f=14) and *'mentoring in clinical practice'* (f=2).

The subcategory '*Palliative care clinical practice' (f=15)* included most expressions. The students expressed that *'work experience from clinical settings'* (f=14) facilitates the learning of palliative care. *'Mentoring in clinical practice'*

(f=2) was a subcategory where the students expressed that having a supportive supervisor when being in the clinical practice facilitates the learning of palliative care. As some students expressed:

> *"I have completed my clinical practice in a hospice, and it was an eye-opening learning experience."* (w41)

> *"Palliative care and end-of-life care have become familiar through paid work during my studies."* (w32)

> *"Good supervisors in clinical practice taught more."* (1113)

The category 'Obtained formal education' (f=25) included three subcategories, namely *'elective studies regarding palliative care'* (f=10), *'education obtained while studying for a former healthcare degree'* (f=10) and *'the expertise of the teacher'* (f=5). The subcategory *'elective studies regarding palliative care'* (f=10) was the category with the most reduced expressions. Students also expressed that *'education obtained while studying for a former healthcare degree'* (f=10) was a facilitator to achieving a good competence in palliative care. In the subcategory *'the expertise of the teacher'* (f=5) the students expressed that a good teacher facilitates the learning of palliative care, the teacher should be competent and have expertise on the subject. Some citations from the original data:

> *"I have been studying palliative care as an elective subject already in … and last summer…, I feel that these studies have supplemented my skills."* (w40)

> *"…during the vocational nursing studies, I feel that more was taught about palliative care"* (1043)

> *"A teacher of palliative care should be a trained individual who has studied the subject and knows what they are teaching."* (538)

The category 'Intrinsic motivation to learn about palliative care' (f=10) included three subcategories, namely '*personal interest in palliative care'* (f=5), '*thesis completed on the subject of palliative care*' (f=4) and '*personal experience of palliative care'* (f=1).

'Personal interest in palliative care' (f=5) was expressed as a facilitator on learning palliative care by the students. Some students expressed that '*thesis completed on the subject of palliative care*' (f=4) can be a facilitator toward achieving a good competence level on the subject. In the subcategory '*personal experience of palliative care* (f=1), the students highlighted that sometimes one's

own personal experience of palliative care can facilitate learning. Examples of the original data are given below:

> *"My own competence has been influenced by an interest in end-of-life care."* (w21)

> *"My own experience of my knowledge is much better because my thesis was related to the subject."* (w16)

> *"You gained much more knowledge through the experience of someone close to you than during the education."* (621)

The main category ***'Barriers to palliative care learning'*** included seven categories. The three categories which consisted of most reduced expressions, were 'Insufficient amount of education' (f=119), 'Insecurity about own performance in palliative care' and 'Discrepancy between teaching methods' (f=43).

The category 'Insufficient amount of education' (f=119) consisted of four subcategories, namely *'too little education of palliative care'* (f=92), *'too superficial education'* (f=14), *'no education of palliative care'* (f=7) and *'too concise course of palliative care'* (f=6).

The subcategory *'too little education of palliative care'* (f=92) included the most reduced expressions. In the subcategory *'too superficial education'* (f=14), the students expressed that the lack of a thorough education was a barrier to achieving adequate competencies on the subject. *'No education of palliative care'* (f=7) was a subcategory where students expressed that they did not receive any education about the subject during the nursing studies. As some students expressed:

> *"There is too little palliative care education during the studies."* (48)

> *"Palliative care is, I think, covered in a very superficial way."* (1014)

> *"palliative care is not taught"* (905)

The category 'Insecurity about own performance in palliative care' (f=56) consisted of seven subcategories '*too little competence to provide palliative care'* (f=21), '*hard to encounter the dying patients and the closest ones' (f=8), 'everyone don't have enough interaction skills to face the dying person' (f=7)', 'unpreparedness how to perform in difficult situations' (f=6), 'palliative care can be frightening'* (f=5), *'the topic is difficult'* (f=5) and *'difficult to face death (f=4)'*.

The subcategory '*Too little competence to provide palliative care'* (f=21) included the most expressions. *'Hard to encounter the dying patients and the closest ones'* (f=8), was a subcategory where the students expressed that it is hard

to encounter the patients and their closest ones in different caring situations, which can be a barrier to successful performance and learning in the situation. The students expressed that personality could act as a barrier when *'everyone don't have enough interaction skills to face the dying person'* (f=7). Some citations from the original data:

> *"However, there has been a lack of prior knowledge by the time of the clinical training, because the subject is not covered at school and because of the lack of prior knowledge, it has also been difficult at first to encounter the patient and relatives, like working with your "thumb in the middle of your palm*"." (A Finnish idiom referring to a situation where a person is working without the required abilities to cope in the situation). (w13)

> *"On the other hand, I was also confronted with a situation (dying child) during my training in women's nursing. It was challenging for me to act in this situation."* (224)

> *"Not all caregivers are naturally skilled in dealing with palliative patients and their loved ones with empathy, situational awareness and communication appropriate to the situation."* (408)

The category 'Discrepancy between teaching methods' (f=43) consisted of four subcategories, namely *'too much online learning'* (f=18), *'too much self-learning'* (f=17), *'too much group work'* (f=6) and *'classes are too long for such a serious topic'* (f=2). *'Too much online learning'* (f=18) was the subcategory which included the most expressions. In the subcategory *'too much self-learning'* (f=17), the students expressed that when the responsibility of the learning is too much on the students, an in-depth or broad picture of the subject is difficult to achieve. *'Too much group work'* (f=6) was a subcategory where the students expressed that if the education focuses too much on group work and situations where students teach each other, it can lead to an insufficient learning outcome. As some students expressed:

> *"So I don't think that stand-alone online courses alone are nearly enough."* (385)

> *"…learning for yourself, that a pike is a fish* (a Finnish idiom which refers to learning by memory)*, you don't get a very broad picture of things.* (1240)

> *"…fewer presentations made by student groups, which often contain very many errors."* (724)

5.4 Summary of the results

1. The integrative systematic review about the empirical studies showed that nurses need a wide range of competencies to provide quality palliative care. The competencies were grouped thematically to six key-themes: competency to collaborate with the patient, family and team; competency in communication and cultural issues; clinical competency; psychosocial and spiritual competency; ethico -legal competency and competency related to a nurse's professional role and leadership. The level of palliative care provision was rarely defined in the studies. Therefore, a comprehensive analysis of competencies aligned to different levels was not possible to do.
2. The multi-professional workgroups perspective of competencies required to different levels of palliative care produced a comprehensive overview of competencies which the nurses need to provide to ensure quality palliative care on the basic and specialist levels. The basic level analysis produced 17 main categories, including a total of 75 subcategories, ''Competence in managing the most common symptoms'' was the main category that contained the largest number of reduced expressions (f=75). The specialist level data corresponding to the basic level main categories, produced 12 new subcategories. The subcategory 'Participation as an expert in advanced care planning and setting goals of care' (f=4) was one of these subcategories. When analyzing the data unique to the specialist level, 10 main categories which included a total of 37 subcategories, merged. The main category 'Competence in maintaining expertise and taking care of own wellbeing at work' (f=34) included the most reduced expressions.
3. About half of the students stated that palliative care had been covered well during their studies, while almost all the students (94.4%) felt that palliative care is a useful subject in nursing education. Of the participating nursing students, 60.7% assessed their own competency in palliative care as quite or very good, while 51.9% of them assessed the palliative care education in nursing studies as quite or very good as a whole. Students expressed a desire for more education about pharmacological and non-pharmacological pain management. Over half of the students reported that the education had incompletely covered the issues of non-pharmacological pain management, psychosocial support, mental symptoms, along with existential and multicultural issues. Students with earlier social or healthcare education or work experience were more likely to have a higher self-assessed competence

of palliative care and they assessed the future need of palliative care competence in their work higher.

4. Students expressed that palliative care education should be developed by increasing the amount, the obligatory and the comprehensiveness of the education during nursing studies in general. The clinical practice should also be developed to include palliative care during the nursing studies. There was a wide range of contents which the students preferred to be involved in during the palliative care education, such as 'encounters in palliative care' (f=162) and 'support in palliative care' (f=123). In addition, teaching methods suggested to be emphasized in palliative care education were identified, such as 'patient cases and collaboration with working field' (f=146). The palliative care education was preferred to be provided as integrated to other studies but still as a separate module to ensure the understanding of the whole phenomenon. The education of palliative care should start already before the first clinical practice and end in the final stage of the studies. 'Previous clinical experience about palliative care' (f=31), 'obtained formal education' (f=25) and 'intrinsic motivation to learn about palliative care' (f=10) were seen as facilitators of learning palliative care. Barriers to learning palliative care such as 'insufficient amount of education' (f=119), 'insecurity of own performance in palliative care' (f=56) and 'discrepancy between teaching methods' (f=43) were identified as well.

6 Discussion

The main results of this study will be reflected in the discussion chapter. In addition, the ethical aspects and the strength and limitations will be discussed. The implication of the study is also presented in this chapter.

6.1 Discussion of the results

The results in this study are discussed based on the research questions. This section starts with the discussion of the results of sub-study I. Thereafter, the section continues with discussions of the results of sub-studies II-IV in systematic order.

Palliative care nursing competencies (Sub-study I)

In total, six key themes were identified in the review of empirical studies performed in different settings of palliative care provision. Even though the review enabled an overview of palliative care nursing competencies, it also made a need to prominently define the palliative care nursing competencies required in different levels of palliative care provision. The second aim in the review was to define the palliative care competencies aligned to the different levels, but it appeared that the levels were rarely defined in the studies and the competencies were most likely to be defined through the setting where palliative care was provided, or by describing the competence needs when caring for patients in different disease groups.

When comparing the identified competencies to previous competence frameworks it was eminent that there were similarities. Still, there were competence areas which did not appear in the analysis, such as competence in networking, economic issues related to palliative care provision and quality control. (De Vlieger, 2004; Paal et al., 2019.) In addition, the competence of nurses regarding advanced care planning did not appear from the results, even though earlier literature addresses that nurses are often communicating with families about advance care planning issues. In addition, team-based models involving both the physician and the nurses in advanced care planning have been shown to be cost-effective and to support quality palliative care. (Black, 2006; Dixon & Knapp, 2018.)

To ensure quality palliative care, patients expect the nurses to be professional, competent, supportive and have good clinical competencies (Rchaidia et al., 2009; Zamanzadeh et al., 2010; Papastavrou, Efstathiou, Charalambous, 2011). They also expect that the care is a holistic approach, and that they get support from the

healthcare staff (Viitala et al., 2018). The competence to support patients and the family as well as an open attitude and clinical competence were highlighted in the systematic integrative review.

In sub-study I, nurses who were specialized in palliative care and advanced nurse practitioners working in the palliative care context, highlighted advanced competencies such as extended clinical skills, advanced communication skills and skills to educate peers. Nurses with a specialization in palliative care could be pivotal in the development and provision of quality palliative care. These roles for nurses are under development in Finland and this study highlighted the need for further research to gain a more comprehensive view of the needed competencies on a specialist level.

The importance to define palliative care competencies required in different levels of palliative care provision was evident in the review, as also seen in earlier literature (Fitch, 2015; World Health Organization, 2020). The enhancement of good competence levels among nurses is essential. Nurses self-perceived professional competence supports quality palliative care, since it has been associated with both higher job-satisfaction and feelings of confidence in caring for palliative care patients (Biagioli et al., 2018). In addition, it has been shown that a higher educational and competence level among nurses reduces the incidence of morbidity and adverse events (Aiken, 2014). These aspects supported the imminent need for a more thorough definition of the palliative care nursing competencies required in the different levels of palliative care provision.

Professionals' views on palliative care competencies (Sub-study II)

The study presented an overview of the competencies required from nurses to provide palliative care on the basic and specialist levels. Before this study, there were limited studies defining the competencies aligned to the different levels of palliative care. The results gave an in-depth view of the multi-professional workgroups views of the required palliative care nursing competencies. When comparing the results of sub-study II to previous frameworks of palliative care nursing competencies (De Vlieger et al., 2004; Ryan et al., 2014), similarities were found, such as competence in symptom management, which has been highlighted in all the frameworks as well as in this study.

Competence in symptom management was the main category most emphasized in this study. Supporting the patient and family was another strongly emphasized main category. Competence in symptom control, encounters, counselling and

supporting the patient in palliative care and their closest ones were competencies which were also addressed by patients and their closest ones as important competencies for nurses in an earlier study (Vihelä, Hökkä, Kaakinen 2020). Sub-study II gave an in-depth view of the competencies needed in different levels of palliative care provision as well as of the competencies needed specifically in the nursing profession. However, in a previous study, when studying the professionals' views of the physicians' palliative care competence required in different levels of palliative care, similarities appeared but the pattern of which competencies were most emphasized differed from sub-study II. The most emphasized competencies for physicians were competence in advanced care planning and decision-making and competence in social interactions (Melender et al., 2020).

In addition to similarities, differences also appeared in the results of sub-study II compared to earlier competence frameworks (De Vlieger et al 2004, Ryan et al 2014). The main category 'Competence in supporting the patient and her/his closest ones' included the subcategory of 'Maintenance of hope'. In this subcategory, the professionals highlighted that nurses should have the competence to maintain hope among the patients in palliative care and their closest ones. To maintain hope was also addressed as one of the most needed competences for nurses and physicians working in palliative care in a recent study (Melender et al., 2021). Hope can be understood as a central element and an essential resource of human life (Kylmä & Juvakka, 2007). Although hope is often seen as future-oriented, it is also important in both the living and the dying (Kylmä et al. 2009). The maintenance of hope as a competence among nurses has not been mentioned in the earlier competence frameworks, although earlier research addresses that the maintenance of hope is important for patients throughout all phases of cancer care (Nierop-van Baalen et al., 2019). Nurses caring for end-of-life patients need to understand the various dimensions of dying patients' hope in order to support the patients to find, express and foster their hope (Hävölä, Rantanen, Kylmä, 2015). This finding emphasizes the need to develop the nursing education, to provide nurses with the competence to maintain hope when caring for patients in palliative care and their families.

An unhesitant attitude and courage to care was mentioned many times by the professionals in sub-study II. The nurses were required to have the courage to care for the patients in palliative care. In a recent study, courage in action was identified as a nursing competence in end-of-life care (Haavisto et al., 2021). Self-efficacy is someone's beliefs in their own ability to succeed in a certain task. In a recent study, it was shown that nurses' engagement in advance care planning is more associated with their self-efficacy than with their knowledge. (Gilissen et al., 2020.)

Developing palliative care competence through education may increase courage among nurses (Rotter & Braband, 2020). These aspects highlight the need to develop education in a holistic view. In addition to increasing the knowledge level of students, it is essential to develop education methods encouraging nursing students to achieve adequate skills, an unhesitant attitude and a good level of self-efficacy.

Competencies unique to the specialist level were identified in the results. One of the competencies in the specialist level was competence in research and development in the field of palliative care. In a newly published survey, the current research and development needs in the field of palliative care in Finland were studied. The most important development needs were identified as the development of care practices, competence and care facilities. The most important research areas were related to the care environment, patient, care, the closest ones, professionals, volunteers and multidisciplinary research. The need for research and development about palliative care was imminent in Finland. The issues addressed in the survey calls for research and development in areas where nurses have a pivotal role. (Salin et al. 2021.) To enhance the research and development in these areas, it is important to empower nurses to act as researchers and developers together with other professional groups. Therefore, it is necessary that research and development competencies are implemented in the post-graduate palliative care nursing education along with the other advanced competencies identified in sub-study II.

Palliative care education and students' self-assessed competencies (Sub-study III)

Almost half of the nursing students considered that the palliative care education in their studies was insufficient. In addition, almost half of the students assessed that their competence about the subject was low. An earlier study, targeted toward nursing students from 14 UASs, assessed graduating nurses self-assessed competencies. The competence 'care for dying' was assessed as the lowest self-assessed level of nursing skills by the students. (Kajander-Unkuri et al., 2014.) The results of sub-study III address the fact that there is still a need to develop palliative care education in the nursing curriculum. This survey provides new information on the contents specific to palliative care education that still needs to be better integrated to the nursing program.

Almost all of the nursing students assessed that palliative care is a useful subject. When comparing this to a survey made to graduating medical students, the

results are similar as 99% of the medical students assessed that the subject of palliative medicine is useful (Lehto et al., 2020). The nursing students expressed a need for more education about pharmacological and non-pharmacological pain management. This result differs from a study on graduating medical students, in which only 8% expressed a need for more education in pain management (Lehto et al., 2020). Related to pain management, over half of the nursing students expressed low self-assessed levels of competence in non-pharmacological pain management as well. In an earlier study, patients in palliative care and their closest ones expressed a wish to obtain more counselling of non-pharmacological pain management and they also expressed a wish that nurses should have more competence of this subject (Pelto et al., 2019). Non-pharmacological pain management interventions are used in palliative care settings (Hökkä et al., 2014), still the evidence of previous studies and sub-study III show that nurses' and final year nursing students' competencies of this issue are low. Nurses have an essential role in pain management and pain is a common symptom (Solano, Gomes, Higginson, 2006) and a significant burden for patients in palliative care (Goudas et al., 2005). These findings related to pain management are worthy of attention. The education should ensure proper competence to nursing students with regard to pain management in order to ensure proper care for the patients.

Other contents which the students addressed to be insufficiently covered was existential issues and multicultural aspects in palliative care. Patients in palliative care often have a need for spiritual support (Egan et al., 2016; Van de Geer et al., 2017) and spiritual distress is associated with a poor quality of life among palliative care patients (Balboni et al., 2007). The cultural needs are more imminent at the end-of-life as well (Schrank et al., 2017). To allow the nursing students to provide quality palliative care, it is important to address that these subjects are also included in the nursing curriculum. In the current situation, multicultural aspects in palliative care are not included in the national competence framework for graduating nurses (Silen-Lipponen & Korhonen, 2020). The results of this study supplement the knowledge of the content needing to be developed in the national competence framework when all aspects are not included there.

Previous education and/or work experience in palliative care was seen to influence the nursing students' views of palliative care education in some aspects. Students with education assessed their competence levels to be better than students without education. Also, students with previous education or/and work-experience assessed the importance of palliative care competence in their future work higher. These findings are strengthened by previous research as practical experience

(Grubb & Arthur, 2016; Hagelin et al., 2016) and previous education (Hagelin et al., 2016) have been identified to positively influence students' attitudes toward caring for dying patients. It is noteworthy that students without any previous experience or education may benefit from a more intensive education of the subject to ensure their competence, and students with previous work experience or/and education could benefit from more in-depth education. Prior education or work experience did not significantly impact the students' views of the coverage of palliative care contents in education, nor their views of palliative care education as a whole. Noteworthy, no significant differences were found on the students' views of the usefulness of palliative care education, when almost all of the students considered it to be useful.

Development needs and preferred palliative care education- students' view (Sub-study IV)

In sub-study IV, an overview of nursing students' views of the development needs and preferred education of palliative care in the nursing program was shown. Based on the analysis, an overview of nursing students' perceptions of the facilitators and barriers of learning palliative care was presented as well. One of the most emphasized development needs in palliative care education was to implement more education of the subject into the nursing program in general. The insufficient amount of education was also seen as a barrier to learn palliative care. These results address the need for the further implementation of palliative care as a subject within nursing education.

One of the most emphasized palliative care contents preferred by the nursing students was encounters in palliative care. Encounters with the patient and family were also seen as a palliative care nursing competence in sub-study II (publication II). This is an interesting finding, since in earlier frameworks, encounters in palliative care have not been widely mentioned as a competence of nurses (De Vlieger et al., 2004; Ryan et al., 2014). Even though previous research addresses the fact that patients in palliative care and their closest ones expressed that encountering is a competence required from nurses (Vihelä, Hökkä, Kaakinen, 2020). To learn to encounter the dying person and death, it requires that students reflect their own views of dying and death (Huhtinen, 2005). In sub-study II, encountering was described similarly to the concept caring encountering (Holopainen, Nyström, Kasen, 2019), such as respectful encountering, seeing the patient as an individual person and the encounter as a unique situation. The concept

of encountering appeared in sub-studies I, II and IV as a required competence for nurses and an emphasized palliative care content in nursing education. These findings challenge nursing educators to include this content in the nursing curriculum and to also design education methods to foster the development of this competence area.

The students preferred education of different patient groups. This referred to patients in different age groups as well as patients with malignant or non-malignant diseases. This is an interesting finding since palliative care is still often aligned to the care of cancer patients. Palliative care should be integrated in different patient groups, such as elderly people (Tohmola et al. 2021). Since palliative care is not restricted to diagnosis, the content of palliative care for different patient groups should be integrated to different subjects during the nursing education. This finding is strengthened by a nearly published study about future palliative care competence. The increasing need for competence to care patients with non-malignant diseases as well as competence to care for patients in palliative care in all social and healthcare settings was addressed. (Suikkala et al., 2021b.)

The students addressed teachers' competence as a barrier and facilitator to the learning of palliative care. Research about teachers' competence in palliative care has not been launched in Finland. The results of research from other countries has stated that teachers need additional palliative care education (Brajtman et al., 2009) and that the lack of competent teachers can significantly hinder the high-quality education of end-of-life care (Josephsen, Martz, 2014). The possibility to conduct clinical practice and have a competent staff member supporting the students during their practice were seen as facilitators in learning palliative care in sub-study IV. This result is supported by earlier research highlighting that a supportive mentor-student relationship and staff support facilitate good learning experiences (Connell, Yates, Barret, 2011). These findings call for the need to strengthen the competencies for teachers and staff members supporting students in the clinical field. In addition, the results encourage the UASs to facilitate the possibility for nursing students to have a clinical practice in an environment where they have the possibility to meet and care for patients in palliative care.

The development of pre- and postgraduate palliative care education is ongoing in Finland. The studies performed in this dissertation is an example of building new knowledge and developing the education at the same time. The postgraduate specialization and master's degree education in palliative care has been developed while research of the subject has been made nationally. The results of sub-study I and II along with other research made in the EduPal- project and international

frameworks have been utilized when developing the curriculums. The first 286 nurses graduated from the national palliative care specialization in the spring 2021, and at the beginning of 2021 there were over 50 nurses studying in the palliative care master's degree program in the UASs. (Suikkala et al., 2021a.) To enhance palliative care education in nursing programs in Finland, a national curriculum recommendation has been published. When developing the curriculum recommendation, the results of sub-studies I-IV, other research made in the EduPal-project and international undergraduate competence frameworks have been utilized. (Hökkä et al., 2020a, Hökkä et al., 2021b.)

6.2 Ethical consideration

In each step and sub-study, the standards of the Declaration of Helsinki were followed (National Library of Medicine 2013). Before starting the data collection, the Ethical Committee of North Ostrobothnia's Hospital District was consulted regarding the need for an ethical statement. It was not needed since, according to Finnish law, a statement is not required when the study does not intervene with participants' integrity and the participants, namely students and professionals, were not seen as vulnerable persons (Finnish Medical Research Act of 488/1999, 1999).

The management of participating organizations were contacted for permission to provide data collection and each UAS granted a written study permission to collect the data from the final year students. All professionals in the workgroups and students answering the questionnaire were informed about the voluntary nature of participation in the study before the data collection started. All participants received written information about the study aims. The participation to the workgroup after they received spoken and written information of the nature of the study was assessed as an informed consent agreement to participate to the study for the professionals. Each student responded that they had read the information letter and agreed to participate in the study by answering 'yes' to a question of this issue. If the question was left unanswered or the answer was 'no', the response was rejected. The demographic data collected was anonymous in all the sub-studies, the data collected was used only in the studies. The participants' anonymity was protected so that they cannot be identified through the examples of authentic data presented in the studies (Regulation (EU) 2016/679, 2016).

The data from the study were handled with care and only the research team had access to it. Data in electronic format were kept as password-protected computer files and transcribed material in a locked cabinet in Kajaani University of Applied

Sciences in accordance with the guidelines for data protection. The data analysis was carried out so that the results are truthful and based on the original data. All steps of the research process have been presented openly to ensure that the steps can be replicated by another researcher. The work of other researchers has been respected by proper acknowledgement of sources. (Polit & Beck, 2017.)

6.3 Strengths and limitations of the study

The strength of this study has been ensured during the process by combining data from different sources and by using different analysis methods. By using a triangulation design, it is possible to achieve a broader and deeper description of palliative care nursing competence and education. (Polit & Beck, 2017.) To ensure the quality of the whole study process (publications I-IV) standards were used (Prisma, COREQ and STROBE) to plan, implement analyze and report findings.

In the systematic integrative review (sub-study I, publication I), the search strategy was set with the help of an information specialist specialized in medical and nursing science searches, which strengthen the search strategy. The repeatability of the review was strengthened, by clearly describing the search strategy and by registering the review at PROSPERO (Munn, Tufanaru & Aromataris, 2014). Meticulous searches were undertaken in five electronic databases combined with manual searches. These aspects reduce the risk for bias in the review (Aromataris & Riitano, 2014). The inclusion process was made by two independent members of the team, as was the quality assessment of the included studies, to minimize the subjective selection bias (Aromataris, & Pearson, 2014). Because of the international team, articles written in several languages (English, Swedish, Spanish, German, Finnish and Portuguese) could be screened for eligibility, which reduces the language bias. There are also several limitations in the study. The diversity of terms referring to palliative care nursing competence in the studies made the search and inclusion challenging. The chosen timeline 1998-2020 may increase the risk that some relevant publications were not found. Further, as one of the inclusion criteria was the availability of full-text articles, two articles that could potentially meet the inclusion criteria based on the abstract were excluded.

In sub-study II (publication II), the descriptive qualitative design was suitable for the aims of the study. The questionnaire used to gather the data was pretested with one workgroup, which consisted of a group of professionals working with palliative care (Polit & Beck 2017). The study sample represented professionals

from different parts of Finland and from a wide range of different settings and palliative care levels. It can be considered that the collected data represent the phenomenon of interest quite well and the data was rich to describe the phenomenon of interest. (Elo et al., 2014; Kyngäs, 2019). The reduced expressions were coded by two researchers independently and compared to gain consensus, which increases the trustworthiness in the study. In addition, the analysis and findings were repeatedly discussed within the research team throughout the whole study. The authenticity of the results was strengthened by providing authentic citations from the collected data. The dependability was strengthened by presenting an example of the analysis (Figure 3). (Elo et al. 2014; Kyngäs 2019.) Data saturation was achieved, which meant that no further data collection was necessary (Saunders et al. 2018). There are still limitations in the study as there is no possibility to calculate a response rate since the participants were suggested by their managers. In addition, there was no possibility to ask the participants any further questions since the workshops were provided just once and no personal data was gathered. This reason made it also impossible to send the results to the participants for further feedback.

In sub-study III (publication III), a strength of the study was the use of a nationwide survey when investigating students' views and expectations of palliative care education. There are some aspects improving the generalizability of the reported findings, namely the high response rate and the representative study sample of undergraduate nursing students in Finland (Polit & Beck, 2017). The reliability was strengthened by designing the questionnaire carefully, based on literature and multidisciplinary expert opinions. In addition, the content validity was tested by experts in palliative care and education, and the questionnaire was psychometrically validated (see chapter 4.3.2). The clarity and content of the questionnaire was pre-tested on a group of students as well. There is still limitation in the study. The students' self-assessed competencies were based on the students' subjective judgments which can lead to over- or underestimation. In addition, because the students were not yet graduated, they may not possess all the understanding of what their palliative care competence needs would be when caring for patients in palliative care, which can lead to a limited vision of the education needs.

In sub-study IV (publication IV), there were several aspects which strengthened the trustworthiness of the study. Efforts were made to report the sampling, data collection and analytical process in detail. The sample represented the phenomenon of interest quite well as the students in their final year of education

can be assumed to have the knowledge of the content included in the nursing education. Saturation was achieved during the analysis process (Saunders et al., 2018). When focusing on manifest content only, it can be assumed that the results represent the views of the students. The open-ended question was pretested for quality, and to strengthen dependability the categories were presented in Figure 4. (Elo & Kyngäs, 2008.) The analysis was discussed between the research team in all phases of the process. The authenticity of the results was strengthened by providing authentic citations from the collected data (Elo et al., 2014; Kyngäs, 2019). One limitation in the study which could weaken the trustworthiness was the fact that the questionnaire was answered anonymously. Therefore, it was not possible to ask any further questions or to return the analysis to the students for comment (Elo & Kyngäs, 2008).

6.4 Implications for nursing education and practice

The competencies defined in this study can be used to develop the curriculum and teaching content in undergraduate and postgraduate nursing education. The development of education helps to ensure proper palliative care competence of future nursing professionals working with patients with palliative care needs. The results of the study can be used for the development of undergraduate nursing degrees as well as for further development of continuous education postgraduate specializations, and master's degree courses on palliative care. The teaching methods, placement and the content of the palliative care education can be developed, because the results provided new knowledge of aspects facilitating palliative care learning which should be encouraged to achieve good learning outcomes. In addition, the study also identified barriers to learning which should be actively decreased in the education. The increasing need for palliative care will increase the nurses' need of palliative care competence. Therefore, to ensure competent nurses to each level of palliative care provision, it is important to further developed the undergraduate and postgraduate nursing education. Education management should ensure the competence of the teachers' providing palliative care education. The results can be utilized in critical assessments of how undergraduate and postgraduate education prepares nurses for a career in palliative care.

Nursing management should pay attention to the training needs of their staff as the care of patients with palliative care needs are a key part of everyday nursing work. Based on the results of this study, the evaluation of nurses' palliative care

competencies can be made using the competence descriptions. Managers can use the new knowledge of palliative care nursing competencies when planning continuous education for nursing staff.

7 Conclusions and challenges for further research

Based on the results the following conclusions are presented:

1. The earlier research presented that a nurse needs a wide range of competencies to perform successfully in the palliative care context. Nurses require competence in collaboration and communication. In addition, competence in ethical, cultural, legal, psychosocial and spiritual issues, combined with good clinical competence, are essential. When working in a specialist context, nurses need extended competencies in clinical, communicational and personal areas. None of the included studies in the review clearly identified which competencies are necessary for the different levels of palliative care. Therefore, the knowledge gap of the phenomenon is clearly shown and the need for future research describing the palliative care nursing competencies required in each level of palliative care provision are imminent.
2. Based on the professionals' views, nurses need both similar and different competencies when providing care in the different levels of palliative care. On the basic level, they need competencies for example in symptom management, supporting the patient and encountering in palliative care. On the specialist level, competencies such as participation as an expert in advanced care planning are needed. This study provides a description of the palliative care nursing competencies required on the different levels of palliative care. Encounters and maintaining hope are new palliative care nursing competencies described in this study.
3. Undergraduate nursing students consider palliative care to be a highly useful subject. Multicultural and existential aspects along with pharmacological and non-pharmacological pain management are areas of palliative care that should be covered better in education according to the students. In addition, over half of the students report their competence related to non-pharmacological pain management, multi-cultural issues in palliative care, mental symptoms, psychosocial support and existential issues as insufficient. Previous education or work experience may enhance student's palliative care competence, but all students still report palliative care educational needs. Therefore, this study highlights the need to better integrate the coverage of specific palliative care contents into the undergraduate nursing program.

4. Based on the nursing students' views, the main development needs are to ensure that all students have equal access and a sufficient amount of palliative care education during their nursing studies. It is important to provide palliative care education before the first encounters with palliative care patients, during the studies integrated to different subjects, and as an own entity to gather understanding of the whole phenomenon. Possibilities for clinical placements or visits to palliative care units during the education are essential. A teacher competent in palliative care acts as a facilitator in learning palliative care. Therefore, it is important to ensure the teachers' competence on the subject. An insufficient amount of education, inappropriate learning methods, and students' insufficient competence when encountering patients in palliative care are seen as barriers to learning palliative care. Palliative care is an important topic in nursing studies and competence in palliative care facilitates the professional growth of the students.

Suggestions for further research:

1. It would be important to update the integrative systematic review later, when the amount of research about palliative care nursing competencies related to different levels of palliative care increases. It would be interesting, in due years, if a systematic review with a meta-synthesis could be done of the existing research of the topic.
2. Further research to confirm the palliative care nursing competencies required in the different levels of palliative care is needed. Based on the competence description, a quantitative approach could provide information on the agreement of the required competences from the perspectives of professionals, educators, and experts. There is a need to a further qualitative approach to gain a deeper understanding of the new competence aspect, namely encounters and the maintenance of hope. In addition, future research could aim to reflect on how cultural differences affect nursing competencies in palliative care.
3. Based on the competence descriptions, a measurement tool to assess students' competence levels in palliative care could be developed and validated. The questionnaire used to assess students' views of the coverage of the contents and of their self-assessed competencies of palliative care, could be further developed and translated to enable an international survey to assess the coverage of the palliative care content in nursing education and students' self-assessed palliative care competencies in different countries.

4. A qualitative approach could be undertaken to gain an understanding of the educators' views of palliative care education in undergraduate nursing education. In addition, educator's competence in palliative care could be assessed with a quantitative approach. To gain a deeper understanding of the students' views of palliative care competencies, a study using the in-depth interview method could be useful.

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Appendices

Appendix 1. Student questionnaire

A survey of palliative- and end-of-life care education for final-year nursing students.
- Circle the correct number or answer option that best describes your opinion

0. I am familiar with the details of this research and provide my informed consent to participate in the research when answering this questionnaire.
1. Yes
2. No

1. Your University of Applied Sciences:
_____

2. Your age: _____ years.

3. Your degree-program
1. Registered Nurse, bachelor's degree
3. Other, please specify**:**_____

4. In which academic year are you currently studying?
Academic year:

5. Gender:
1. Male 2. Female 3. I don't define/I can't say

6. Do you have previous social- or health care education?
1. Yes, my education is_____
2. No

7. Do you have previous work experience in social- or health care?
1. Yes, the duration of my work experience is_____ years
2. No

8. How has the contents of the education you've received covered the following aspects?

	Very good	Quite good	Quite incomplete	Very incomplete	I do not know
The basics of palliative care (e.g., definition and goals of palliative care)	4	3	2	1	0
Setting goals or limits of care	4	3	2	1	0
End-of-life care and the dying patient	4	3	2	1	0
Pharmacological pain management in palliative care	4	3	2	1	0
Non-pharmacological pain management in palliative care	4	3	2	1	0
Other physical symptoms (e.g., shortness of breath, nausea)	4	3	2	1	0
Mental symptoms in palliative care	4	3	2	1	0
Psychosocial support	4	3	2	1	0
Existential issues (e.g. meaning of life, questions of existence)	4	3	2	1	0
Ethical questions in palliative care	4	3	2	1	0
Communication in palliative care	4	3	2	1	0
Multidisciplinary teamwork in palliative care	4	3	2	1	0
Supporting a palliative care patient's close ones	4	3	2	1	0
Multiculturality in palliative care	4	3	2	1	0
Palliative care as a whole	4	3	2	1	0

9. How do you assess the content of the palliative- and end-of life care education you received as a whole?

Very good	Quite good	Quite poor	Very poor	I do not know
4	3	2	1	0

10. How useful do you find the palliative- and end-of-life care education?

Very useful	Quite useful	Quite useless	Completely useless	I do not know
4	3	2	1	0

11. Please estimate how much will you need palliative and endof- life care competence in your future work?

I need it very much	I need it quite much	I need it a little	I don't need it at all	I do not know
4	3	2	1	0

12. Of which aspects would you have preferred more education about during your studies?

You can circle more than one option if needed:

1. The basics of palliative care (e.g., definition and goals of palliative care)
2. Setting goals or limits of care
3. End-of-life care and the dying patient
4. Pharmacological pain management in palliative care
5. Non-pharmacological pain management in palliative care
6. Other physical symptoms (e.g., shortness of breath, nausea)
7. Mental symptoms in palliative care
8. Psychosocial support
9. Existential issues (e.g., meaning of life, questions of existence)
10. Ethical questions in palliative care
11. Communication in palliative care
12. Multidisciplinary teamwork in palliative care
13. Supporting a palliative care patient's close ones
14. Multiculturality in palliative care
15. Other content, please specify**:** _

13. Please estimate your competence in the following aspects?

	Very good	Quite good	Quite insufficient	Very insufficient	I do not know
The basics of palliative care (e.g., definition and goals of palliative care)	4	3	2	1	0
Setting goals or limits of care	4	3	2	1	0
End-of-life care and the dying patient	4	3	2	1	0
Pharmacological pain management in palliative care	4	3	2	1	0
Non-pharmacological pain management in palliative care	4	3	2	1	0
Other physical symptoms (e.g., shortness of breath, nausea)	4	3	2	1	0
Mental symptoms in palliative care	4	3	2	1	0
Psychosocial support	4	3	2	1	0
Existential issues (e.g., meaning of life, questions of existence)	4	3	2	1	0
Ethical questions in palliative care	4	3	2	1	0
Communication in palliative care	4	3	2	1	0
Multiculturality in palliative care	4	3	2	1	0
Supporting a palliative care patient's close ones	4	3	2	1	0
Multidisciplinary teamwork in palliative care	4	3	2	1	0

14. Please estimate your competence in palliative and end-of-life care as a whole?

	Very good	Quite good	Quite insufficient	Very insufficient	I do not know
My competence is	4	3	2	1	0

15. Did you meet a patient who was in palliative or end-of-life care during your nursing studies or internships (excluding paid work during your studies)?

1. Yes
2. No
3. I do not know/I do not remember

16. Did you care for a patient who was in palliative or end-of-life care during your nursing studies or internships (excluding paid work during your studies)?

1. Yes
2. No
3. I do not know/I do not remember

17. Please freely share your thoughts on how the education of palliative nursing should be developed

_____
_____
_____
_____
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Many thanks for your answer!

Appendix 2. Summary of the results of the palliative nursing competencies in basic and specialist level from sub-study I and II, Key themes and main categories with bold text. Modified from publication I and II.

Systematic review, Publication I	Qualitative analysis, Publication II
BASIC LEVEL/PALLIATIVE CARE APPROACH	**BASIC LEVEL**
Clinical competency Basic knowledge and skills in palliative care Competency to manage pain and symptoms, including palliative sedation Knowledge of different conditions Competency in care planning	**Competence in managing the most common symptoms (f = 75)** Assessing the patient's symptoms and defining the need for treatment (f = 30) Mastering of pharmacological and nonpharmacological methods of symptom management (f = 17) Implementation of symptom relieving care (f = 10) Assessing physical symptoms and defining the need for treatment (f = 7) Basics of symptom management (f = 7) Assessing psychosocial symptoms and defining the need for treatment (f = 4)
Psychosocial and spiritual competency Competency to support the patient and family Competency to manage social and spiritual needs	**Competence in supporting the patient and her/his closest ones (f = 74)** Identification of the need for, and implementation of, psychosocial support (f = 20) Supporting the closest ones in palliative care (f = 14) Maintenance of hope (f = 10) Provision of psychological support (f = 10) Coordination of spiritual support (f = 7) Involving the closest ones in care (f = 6) Supporting the patient in palliative care (f = 4) Utilization of multiprofessional support (f = 3)
Competency to collaborate with the patient, family and team: Competency in social interactions Attitudes and self-awareness in collaboration with patient and family Competency to collaborate with physicians and healthcare team Competency in patient counselling	**Competence in encountering the patient and her/his closest one (f = 64)** Encounters with persons during palliative nursing (f = 40) Presence as a part of palliative nursing (f = 13) Genuine and respectful encounter (f = 11)
Competency in communication and cultural issues Competency to encounter the individual person Competency to communicate effectively Competency to communicate about difficult issues Cultural competency in palliative care	**Competence in social interactions in palliative care (f = 45)** Social interactions as a part of palliative nursing (f = 17) Sensitivity and empathy in social interaction (f = 16) Verbal communication (f = 9) Breaking bad news (f = 3)
Ethico-legal competency Competency of legal aspects Competency in advocacy Competency on ethical aspects, including ethical decision-making	**Ethical and juridical competence (f = 18)** Patient's autonomy (f = 5) Ethical aspects of palliative nursing (f = 4) Professionality (f = 4) Advocacy in promoting the patient's matters (f = 3) Patient's rights (f = 1) Truthfulness (f = 1)
	Competence in basics of holistic palliative care (f = 68) Understanding concepts and guidelines of palliative care (f = 15)

Basic nursing care as a part of palliative nursing (f = 13)
Palliative care of different patient groups (f = 12)
Assessment of the need for palliative care (f = 11)
Holistic palliative nursing (f = 9)
Addressing oral, skin, position and mobility issues in palliative care (f = 6)
Nutrition as a part of palliative nursing (f = 2)
Competence of pain management and nursing care of patients in pain (f = 51)
Assessment of pain (f = 15)
Pharmacological methods of pain management (f = 15)
Implementation of pain management and nursing care of patients in pain (f = 9)
Nonpharmacological methods of pain management (f = 7)
Basics of pain management (f = 5)
Competence in pharmacological treatment (f = 39)
Implementation of pharmacological treatment in palliative care (f = 19)
(35) Basics of pharmacological treatment (f = 9)
(36) Assessing and anticipating the need for pharmacological treatment and evaluation of its effectiveness in palliative care (f = 8)
(37) Knowledge and skills required for verification of medical competence (f = 3)
Competence in education and consulting (f = 38)
Education of the patient and the closest one (f = 18)
Consultation skills (f = 8)
Identification of the need for a consultation (f = 6)
Guidance of the working community (f = 3)
Perception of a student (f = 2)
Provision of consultative support for the members of the working community (f = 1)
Competence in setting goals of care and advanced care planning (f = 31)
Documentation as a part of palliative nursing (f = 12)
Adherence to goals of care (f = 6)
Implementation of advanced care plans (f = 6)
Applying collaboration when drafting care plans (f = 4)
Concepts of setting goals of care (f = 3)
Competence in multiprofessional collaboration (f = 30)
Multiprofessional collaboration in implementation of palliative care (f = 18)
Collaboration between the nurse and physician (f = 8)
The nurse works as a liaison person between the patient and the physician (f = 4)
Competence in coordination of palliative care (f = 29)
Coordination of palliative nursing and end-of-life care (f = 19)
Integration of the third sector with patient care (f = 7)
Network collaboration (f = 3)
Unhesitant attitude in palliative care (f = 27)
Unhesitant attitude in implementation of care (f = 11)
Unhesitant attitude in encounters and presence (f = 8)
Unhesitant attitude in breaking the bad news (f = 6)

	Unhesitant attitude in bringing along one's own expertise (f = 2)
	Competence in care of an end-of-life patient and her/his closest ones (f = 25)
	Caring for a dying patient (f = 8)
	Identification of approaching death (f = 7)
	Giving up unnecessary nursing practices (f = 5)
	Caring after death (f = 5)
	Competence in strengthening one's own competence and self-awareness (f = 19)
	Development of one's own competencies (f = 11)
	Compassion toward oneself in palliative care (f = 5)
	Identification of one's own emotions (f = 3)
	Cultural competence (f = 10)
	Knowledge of different cultures (f = 5)
	Multiculturality in the implementation of palliative nursing (f = 5)
	Competence in existential questions (f = 8)
	Encountering death (f = 5)
	Helping in existential suffering (f = 3)
SPECIALIST LEVEL	**SPECIALIST LEVEL**
Competency related to a nurse's professional role and leadership	**Competence in encountering the patient and her/his closest one***
Competency to keep up-to-date	Encounters with children (f = 3)
Competency to guide colleagues	Confidence in constructive encounters (f = 2)
Extended clinical competencies	Patient-based encounters (f = 1)
	Competence in pharmacological treatment*
	Extensive expertise in pharmacological treatment (f = 3c)
	Competence in setting goals of care and advanced care planning*
	Advanced expertise in setting of care goals (f = 1)
	Participation as an expert in advanced care planning and setting goals of care (f = 4)
	Competence in care of an end-of-life patient and her/his closest ones*
	Addressing patient's convictions at the end of life and after death (f = 2)
	Supporting the closest ones after the patient's death (f = 3)
	Assessment of unnecessary nursing practices (f = 1)
	Ethical and juridical competence*
	Assessment of ethical issues and discussing them with the patient (f = 3)
	Competence in existential questions*
	Advanced expertise in dealing with death (f = 1)
	Addressing existential suffering (f = 4)
	Competence in maintaining expertise and taking care of own wellbeing at work (f = 34)
	Autonomous decision-making and expertise (f = 10)
	Recognition of one's own limits and acceptance of support (f = 7)
	Postgraduate education (f = 6)
	Active self-development (f = 5)
	Strong clinical know-how (f = 4)
	Critical thinking and reflection (f = 2)
	Advanced symptom management in nursing care of patients in palliative care (f = 26)
	Extensive know-how in symptom management (f = 4)
	Assessment and management of advanced symptoms (f = 4)

	Palliative sedation and the issues related to it (f = 6) Special techniques for the management of symptoms (f = 6) Autonomous management of symptoms (f = 1) Acute situations in palliative care (f = 5) **Teaching, development and research competence in palliative care (f = 20)** Educating about palliative care (f = 12) Development of palliative care (f = 6) Researching phenomena linked to palliative care (f = 2) **Extensive competence in palliative nursing care of special groups (f = 20)** Palliative care for different special groups (f = 10) Palliative care for children and adolescents (f = 7) Palliative care for mentally retarded persons (f = 2) Palliative care for lonely persons (f = 1) **Competence in advanced support to patient in palliative care, and her/his closest ones (f = 19)** Assessment of the need for social support in patients and their closest ones, along with the provision of support (f = 6) Provision of support for grief work (f = 5) Advanced psychosocial support (f = 3) Specialized support for families with children (f = 5) **Extensive competence in coordination of palliative care (f = 19)** Collaboration with the third sector (f = 1) Coordination of the patient's care chain and ensuring the continuity of patient's care (f = 10) Coordination of large networks and management of the collaboration of networks (f = 6) End-of-life care at home (f = 1) Effects of the care environment on the patient (f = 1) **Advanced competence in patient education and consultations (f = 12)** Advanced patient education in different situations (f = 3) Strong competence in consultations (f = 3) Consultative support for different palliative care provision levels and healthcare settings (f = 6) **Advanced competence in pain management and pain management nursing** **(f = 11)** Extensive expertise in pain management (f = 3) Management of special techniques in pain management (f = 8) **Special competence in palliative care (f = 8)** Extensive expertise in palliative care as a part of nurse's work (f = 4) Assessment and anticipation of the patient's needs in special situations and anticipation of them in palliative nursing (f = 4) **Competence in demanding social interactions (f = 7)** Management of demanding social interaction situations (f = 6) Breaking bad news with an active approach (f = 1)

* Basic level main category which includes subcategories unique to specialist level

Original publications

I Hökkä, M., Martins Pereira, S., Pölkki, T., Kyngäs, H., Hernández-Marrero, P. (2020). Nursing competencies across different levels of palliative care provision: A systematic integrative review with thematic synthesis. Palliative Medicine 34(7), 851–870. doi: 10.1177/0269216320918798.

II Hökkä M, Melender H-L, Lehto JT, Kaakinen P. (2021). Palliative Nursing Competencies Required for Different Levels of Palliative Care Provision: A Qualitative Analysis of Health Care Professionals' Perspectives. Journal of Palliative Medicine 24(10), 1516-1524. doi: 10.1089/jpm.2020.0632.

III Hökkä, M., Pölkki T Lehto JT. (2022). Nursing students' views of the content of palliative care in undergraduate education and their self-assessed palliative care competence - A nationwide cross-sectional study. Journal of Palliative care (Online first) https://doi.org/10.1177/08258597221084445.

IV Hökkä, M., Lehto JT, Kyngäs, H, Pölkki T. (2022). Finnish nursing students' perceptions of the development needs in palliative care education and factors influencing learning in undergraduate nursing studies – a qualitative study. BMC Palliative Care 21(40). https://doi.org/10.1186/s12904-022-00915-6.

Original publications are not included in the electronic version of the dissertation.

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