Final year nursing students' knowledge regarding the use of analgesics in terminal patient care

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Laurea University of Applied Sciences **Abstract**
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Abstract

Finland has reached a time when the population is aging rapidly. This brings new challenges to the field of healthcare; more services are required, and aging population naturally increases the need of palliative and terminal care all around Finland. The Ministry of Social Affairs and Health has recommended that the competence of nurses should be increased, to provide good quality care for the ones in need of palliative and terminal care.

This thesis studies the knowledge of Laurea's third- and fourth year nursing students regarding the use of analgesics in terminal patient care, Data was collected using quantitative research method, and the design was a survey study. The aim was to provide a trustworthy content to Laurea to use in the future in planning of the curriculum to the students of nursing.

Results, with a sample size of 121 from a population of 647 and 8% margin of error indicated that nursing students' have better knowledge than what the authors anticipated. On average n=68 (56%) of the students answered correctly to the survey's knowledge test, which consisted from 7 questions each measuring the knowledge regarding commonly used analgesics in terminal care. Attitudes were very positive as well; the data indicates strongly, that majority of nursing students feel it is important to learn about the use of analgesics in terminal care and most n=98 (81%) would participate to a course about palliative care.

This study provided information on which the authors are very pleased, however further studies are to be made to study the national level of nursing student competence of this topic, as this study limits to Laurea's University of Applied Science.

Keywords: analgesics, terminal care, nursing students, palliative care

Laurea University of Applied Sciences **Johdanto**
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Suomen kansa vanhenee nopeasti. Tämä luo terveydenhuollon saralla uusia haasteita, uusia palveluita tarvitaan ja ikääntyvä kansa lisää palliatiivisen- ja saattohoidon tarvetta ympäri maata. Sosiaali- ja terveysministeriön suosittelee hoitajien osaamisen lisäämistä palliatiivisessa- ja saattohoidossa, hyvän ja laadukkaan hoidon takaamiseksi.

Tämä opinnäytetyö tutkii kolmannen ja neljännen vuoden sairaanhoitaja- ja terveydenhoitajaopiskelijoiden osaamista kipulääkkeiden käytössä saattohoitopotilaiden hoidossa.Tutkimustieto kerättiin käyttämällä kvantitatiivista tutkimusmenetelmää tutkimuskyselyn muodossa. Tavoitteena tarjota Laurealle luotettavaa tutkimustietoa käytettäväksi tulevaisuudessa opintosuunnitelman ja kurssi sisällön suunnittelussa. Tutkimuksen populaatio oli 647 opiskelijaa, tutkimukseen vastasi 121 opiskelijaa.

Tutkimustulokset osoittavat että opiskelijoilla on kipulääkkeiden käytöstä melko hyvää osaamista. Keskimäärin n=68 (56%) vastasi oikein tutkimuskyselyn tietojen kartoitus osioon. Opiskelijoiden asenteet saattohoitoa kohtaan olivat erittäin positiiviset; enemmistö sairaanhoitajaopiskelijoista pitää saattohoidon lääkehoidon oppimista tärkeänä. Lisäksi enemmistö n=98 (81%) osallistuisi kurssille joka käsittelee palliatiivista- ja saattohoitoa.

Tutkimuskysely tarjosi opinnäytetyön kirjoittajille erittäin hyvää tutkimustietoa. Lisätutkimukset ovat kuitenkin tarpeen terveydenhoitotyön opiskelijoiden kansallisen osaamisen mittaamiseksi, sillä opinnäytetyö rajoittuu Laurean ammattikorkeakoulun sairaanhoitaja- ja terveydenhoitajaopiskelijoihin.

Avainsanat: kipulääkkeet, saattohoito, sairaanhoitajaopiskelijat, palliatiivinenhoito

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1 Introduction

The population of Finland is aging rapidly. As the large age group born after war is now retired, the population in the working life has decreased (Tilastokeskus 2013). As the population ages, the need of palliative and terminal care will increase by 30% in Finland within the next 10 years (Sairaanhoitajaliitto 2014).

According to the Ministry of Social Affairs and Health (2017), there are annually 30 000 patients needing end-of-life care. They recommend that palliative and terminal care should be available everywhere in Finland. In these new palliative and terminal care recommendations the quality criteria are set into a 3 step model of organizing services in basic health care level, in specialized health care level and in highly specialized health care level. Basic health care level services include services such as home care, home hospital, elderly care units and hospital wards which can conduct end-of-life care but are designed to other purposes. In specialized level, palliative and terminal care are the main focus, and healthcare staff is educated to treat the patients. This level of care is conducted in units such as palliative, terminal care wards and in-home care hospitals. Highly specialized level of care is conducted in university hospitals, palliative care centres, psychosocial support unit, palliative care ward, polyclinic and home hospital specialized in palliative and terminal care.

The recommendation states that the competences regarding terminal care and treating the symptoms should be increased by the healthcare professionals to ensure that good quality of care is available to all terminal care patients. The 3-step division will be followed in the future as the need of palliative care increases; the knowledge of giving terminal care will be needed also in health care centres and general hospital wards.

Problems concerning the use of analgesics in terminal care are found among nursing students, registered nurses and even among doctors. There is a fear that patients may become addicted, psychologically dependent, or suffer respiratory distress when using analgesics for pain control. One's own attitude, personal experience with pain and education regarding pain control, may directly influence the delivery of effective pain management to alleviate the suffering of patients in terminal care. (Hollen & Hollen 2000.) Many professionals have inadequate palliative care understanding and misconceptions concerning opioid analgesics (Human Rights Watch 2011). According to Ranking Palliative care across the World (2015) countries that ranked the highest overall scores had better palliative care understanding due to compulsory courses in nurse training schools and in medical schools. Australia and the United Kingdom where the top two and Finland ranking 20th place. However, a knowledge gap and ignorance concerning opioid administration still exists, and more training is required to meet future demand worldwide. (Murray 2015)

Nursing students should acquire sufficient and basic knowledge regarding the right methods of treating a terminal patient, through teaching and appropriate training. Our aim was to gain insight the knowledge level of Laura's nursing students' regarding the use of analgesics in treatment of adult terminal patients. The reason for choosing this specific competence area is because pain often accompanies cancer and other progressive diseases. It affects all aspects of life- physical, psychological, emotional and spiritual. (Palliative care Australia. n.d) When pain is managed as much as possible, it is possible to improve patient's quality of life.

2 Theoretical framework

2.1 Terminal care

Terminal care is defined as part of palliative care that is narrowed down to the very end-of-life care, which happens during the patient's final days or weeks, when death is expected. (HUS n.d.) Terminal care is a medical decision made by doctor and always includes a Do Not Attempt to Resuscitate order. This decision is made with respect for patients, their family members, and it must always be made from a medical professional's evidence-based perspective of the patient's condition. All healthcare professionals should have basic knowledge of palliative and terminal care, if not then a consultation to someone with expertise is to be done.

Typically, during the terminal care phase, the patient is having difficulties on swallowing, so medicine administration route might have to be changed to other forms from orally taken medicines. Fluid therapy is stopped and the aim of care in this stage is not curative, but to relieve, manage the symptoms, pain and common situations that patient experiences in final weeks and days; the progression of the disease is guaranteed and can no longer be controlled. Terminal care does not actively help the patient to die but provides support, comfort care, and minimizes suffering of patients that are approaching the end of their lives. (Valvira 2017; Marie Curie 2008; The National Advisory Board on Health Care Ethics 2003) End-of-life care plan is individual; to best ensure a good and proper care it is necessary to identify what are the needs that should be addressed; this includes alleviating symptoms through medication treatment. (Käypä hoito 2018.)

2.2 Key elements of terminal patients' pain

"Pain is whatever the experiencing person says it is, existing whenever he says it does." (McCaffery 1968)

Pain is present in 35-96% of terminal stage cancers, in 51-77% of cardiac related illnesses, in 34-77% of COPD (chronic obstructive pulmonary disease) terminal patients, and 47-50% of kidney related diseases. Breakthrough pain is present in 70-80% percent of progressed cancer patients, and present in 63% of terminal patients who suffers from other diseases. (Käypä hoito

2018.) These statistics, however, do not provide information if the data is collected from terminal care patients in Finland or general data from other nationalities as well. About 6 million terminal cancer patients and 1 million HIV/AIDS patients die yearly worldwide with little or without any pain medication. In the developing world 33 million people yearly are in need palliative care. (WHO n.d.)

“Total pain” is the term of pain related to the dying process; it includes physical pain, not accepting that one is dying, social conflicts and emotional discomfort. These four categories affect pain management in terminal care. (Leleszi & Lewandowski 2005.) Existential suffering, contemplating the dying process and spiritual anguish can be added to the etiology of pain. Pain assessment may be influenced by several factors, such as cultural, behavioural, affective and cognitive. Pain cause is considered complex in terminal patient, for it involves several sites, e.g. progression of the disease itself, metabolism changes, alteration in how the medication is metabolised and myoclonus. Patient may suffer from somatic pain, visceral pain and neuropathic pain. (Herr et al. 2011.)

Regular pain evaluation, effective, safe administration and proper documentation are fundamentals of good nursing care. Pain assessment should involve a numerical pain scale, e.g. the visual analogue scale (VAS), oral evaluation, and how it affects functioning and sleeping. Pain assessment should also consider what the pain nature is, such as: stinging, radiating or burning; how often the pain is present and for how long is another important consideration when evaluating pain.

Nurses are patients’ advocates concerning their care and have an ethical and professional commitment in pain assessment when patient self-report is not possible. Terminal patients may be unable to make a self-evaluation concerning their own pain as the disease advances and the cognitive abilities decreases. Therefore, nurses should also be able to evaluate it from body language, facial expressions and tension, muscle tensions, or body position and also assume that pain is still present if patient complained about it previously when cognitive abilities where still intact. (Herr et al. 2011.)

Use of pain assessment tool is considered important, even though there are not many tools available for this patient group, e.g. Multidimensional Objective Pain Assessment Tool (MOPAT) used with adults and Pain Assessment in Advanced Dementia (PAINAD) with elderly. (Käypä hoito 2018)

2.3 Analgesics

Analgesics are drugs that work as pain relievers. “The term analgesic refers to a medication that provides relief from pain without putting you to sleep or making you lose consciousness.” (Drugs.com 2018) WHO's analgesic ladder has categorized pain medication into three different

categories: non-opioids, adjuvant analgesics, weak opioids and opioids. (World Health Organization 1986) As the Figure 1 below illustrates; the choice of drug is made by starting from step 1 and moving up the ladder when the drug of choice is no longer providing the wanted affect. Administering one analgesics type may not be enough to alleviate pain, thus to achieve a better outcome a combination of analgesics may be required. (British Medical Association 2017) Up to 90 % of patients found pain relief, when the WHO analgesic ladder was implemented accordingly. (Platt 2010)

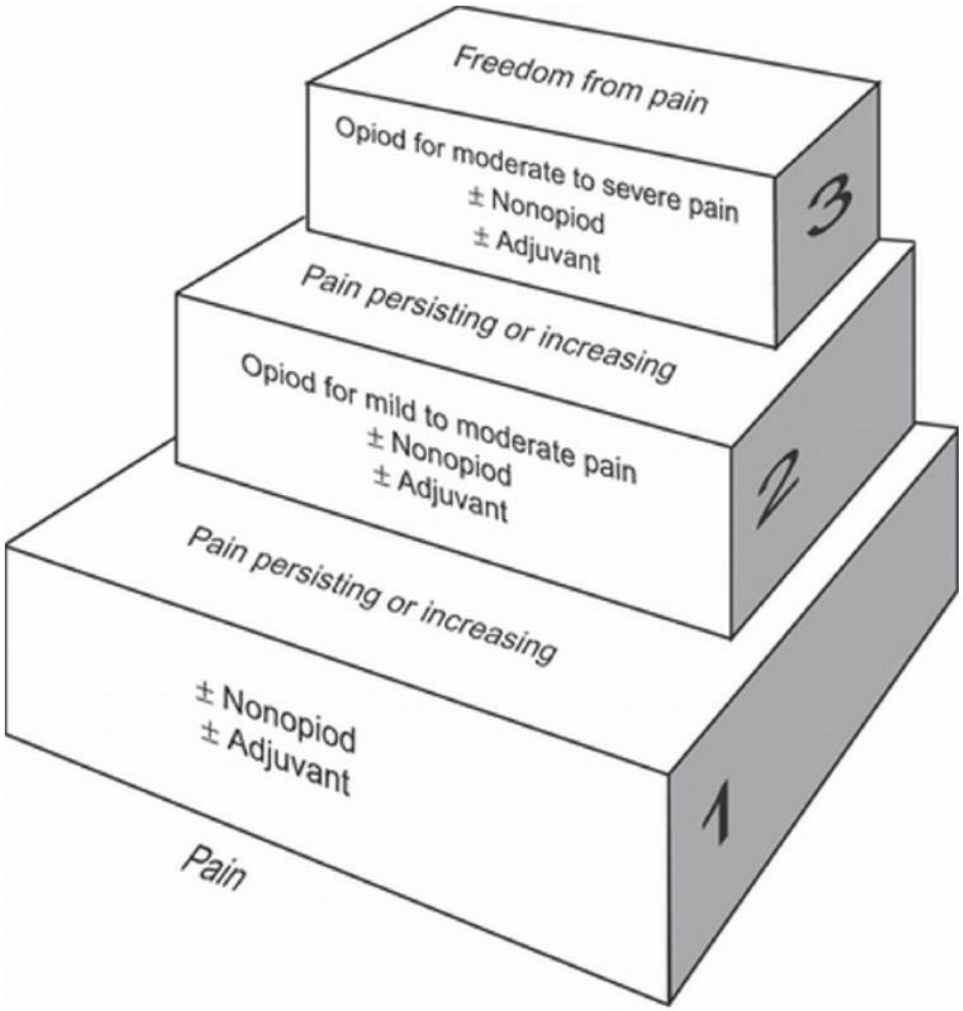

Figure 1. WHO pain ladder, illustrating the transition to stronger analgesics. (Olesen 2019)

2.3.1 Non-Opioids

In end-of life care the role of non-opioids is used for mild pain control, e.g. acetaminophen, (Paracetamol) and Non-Steroidal Anti-Inflammatory Drugs (Ibuprofen, Acetylsalicylic Acid) However, NSAIDs (Non-Steroidal-Anti-inflammatory Drugs) have contraindications which might limit its use to terminal patient: dehydration, use of cortisones, radiation treatment, renal failure, stomach ulcers and asthma. (Kuolevan potilaan kivunhoito 2015) Full doses of non-opioids should be used, but after maximum dose is administered analgesia is no longer achievable. The next step is starting with opioids. (Anderson n.d.) The maximum dose of Paracetamol is 4 g within 24 hours. (Fimea n.d) NSAIDs maximus dosages vary but often used Ibuprofen has a maximum dose of 3200 mg within 24 hours. (Fimea n.d) However, the use of non-opioids is often continued alongside of the opioids to enhance the pain relief. (Käypä hoito 2018)

2.3.2 Opioids

Opioids are indicated in terminal care to control and alleviate pain or treat dyspnea. (Laudari 2018; Anderson n.d.) All opioids are not the similar on their affect, on their pharmacology or on their pharmacokinetics. When moving to step 2 in the pain ladder, the choice of medicine is weak opioids. In step 3 the strong opioids are taken into use. (World Health Organization Analgesic ladder 2008) Providing opioids for pain management will not cause patients decline or accelerate the process of dying. Initial doses are low and increased gradually, due to patients' adjustments to the medication. Patients may start with stronger opioids earlier than later, due to high pain level. (Virtual Hospice n.d; Rizk n.d.) Opioids when used appropriately is considered safe and effectively in producing the expected outcome. (Shin et al. 2014)

The administration routes for opioids are per os (PO) for patients that are still able to swallow. Other routes are intravenously (IV), subcutaneously (SC), and transdermal. Subcutaneous and intravenous routes are used via cannula to avoid injecting medication every time and to administer analgesic infusions. Common adverse effects with opioids are dry mouth, nausea, constipation and sedation. (Anderson n.d.) Use of opioids especially in geriatric patients also increase the risk of falling. (Käypä Hoito 2018)

2.3.2.1 Weak Opioids

Codeine is a drug which is metabolized by the liver and converts it into morphine. However, due genetic differences, some people lack the enzyme which metabolizes codeine to morphine, thus fail to achieve the desired pain alleviation. Dihydrocodeine is similar to codeine on its affect and metabolization. (WHO Analgesic ladder 2008)

Tramadol is related to codeine and morphine structurally, it is an analgesic which acts centrally. It inhibits reuptake of serotonin, norepinephrine and it enhances the inhibitory effects of pain transmission in the spinal cord. (Grond et al. 2004) However, Tramadol has some

contraindication such as epilepsy, use of serotonergic medication, SSRIs. (Selective serotonin reuptake inhibitors) Tramadol should be used with caution. (WHO Analgesic ladder 2008)

2.3.2.2 Strong opioids

Morphine interacts mainly with the opioid mu-receptor; the mu-binding sites are distributed in the brain, and also in the spinal cord and spinal nucleus. Morphine's principal pharmacological effect occurs in the central nervous system and gastrointestinal tract. Its primary action is analgesia and sedation. Morphine seems to increase pain tolerance and reduce feeling of discomfort. The accurate mechanism of action is still unknown, but some central nervous system opiate receptors are identified to play a role in the occurring of analgesic effects. (Drug Bank 2019) Morphine can be used via multiple administration routes, PO. IV. SC. When administered orally there are sustained-release morphine which provides longer affect and immediate-release morphine which affects immediately. (Walsh et al. 1992) There are no significant study results indicating which form or administration route is the best. (Käypä hoito 2018)

Fentanyl interacts in a similar way as morphine but is more powerful in binding to mu-receptor. Fentanyl is a strong opioid used in many forms, typically as a transdermal patch. Circulation near the skin aids the absorption into circulation, however cachectic patient have reduced circulation near the skin, thus the absorption can be reduced up 50 % when comparing the concentration in plasma to a person of normal weight. The fentanyl patch will start to produce analgesic effect within 12-18 hours, lasting up to 72 hours. Other routes of administration include intravenous, transmucosal and trans nasal. Transmucosal and trans nasal routes are often used to treat breakthrough pain as they are fast acting. (Fimea n.d) Transmucosal route affects within 5-10 minutes, alleviating pain for 1 hours. (Käypä Hoito 2018)

Methadone is used as analgesic only after a consultation to a pain specialist. (Käypä Hoito 2018) It is a synthetic opioid which varies a bit from morphine on its pharmacokinetics as it has longer half-life, higher bioavailability and it is metabolized differently. (Lugo et al. 2005) Methadone has many drug interactions and it is not studied much as an analgesic. (Fimea n.d)

Oxycodone is a semi-synthetic opioid with a same mechanism of action as other opioids, however its metabolism is more predictable than morphine. (Gallego et al. 2007) It is used orally as short acting drug and as a long acting drug, often both being in use at the same time; IV and SC routes are used. (Käypä Hoito 2018)

2.3.3 Adjuvants

Adjuvants have proven to be effective for many patients at every level of WHO's pain ladder, when used with analgesics, which are known as co-analgesics or adjuvant analgesics. Patients benefit by combining adjuvant and non-opioid analgesics for an effective pain management. (British Medical Association).

Somatic and neuropathic pain may be controlled with tricyclic anti-depressants, e.g. amitriptyline, maprotiline, desipramine and nortriptyline; anticonvulsants such as pregabalin, gabapentin, valproic acid and carbamazepine, and NMDA receptor antagonist ketamine has been administered. (Platt 2010) Antibiotics may be prescribed if there are infections that cause high discomfort, e.g. urinary tract infection, otherwise they are not prescribed.

Ketamine is an anesthetic agent used to provide sedation and analgesia. The role of Ketamine in end-of-life care is as an adjuvant analgesic. It provides a rapid onset of pain relief and avoids rapid increase of opioid dose. It is used only to pain which is unresponsive to regular analgesics and should only be used after consulting anesthesiologist. (Käypä Hoito 2018) Several administration routes are possible and permitted, e.g. intravenous (IV), subcutaneous (SC) oral (PO) are the most common, but other routes are possible e.g. sublingual (SL), topical or intranasal (IN). (Jancin 2012.) In end-of-life care first route choice is oral when beginning treatment, and the starting dose is 5-10mg 4 x/day and increasing dose up to 10-60mg 2x/day. (Scottish Palliative Care Guidelines 2017) In intravenous route starting bolus is around 0.25-0.50 mg/kg for 30 minutes. The effect is felt after 1 minute and pain relief lasts 3-4 hours. (Jancin 2012.)

2.3.4 Palliative sedation

The definition of palliative sedation is to relax and to reduce the consciousness of a dying patient with medication, when other methods are ineffective in the management of severe symptoms. The purpose is to alleviate the symptoms and not to speed up the process of dying. The indications for palliative sedation to a dying patient are; uncontrolled severe pain, shortness of breath or the sensation of suffocation, uncontrolled bleeding or massive hemoptysis, agitation or delirium and uncontrolled anxiety.

The decision of palliative sedation is always done by a doctor after a consultation to an expert and written instruction must be done. Sedation must be discussed with the patient and family in good time before the induction of the sedation and must be made in mutual understanding and consent of the patient and family. In exception to this is a situation where there is an urgent need to induce the sedation as the best option for the patient, such as bowel obstruction or sensation of suffocation. The sedation is observed clinically without monitoring devices. Goal is to erase the restless movement of the patient, facial expressions and sounds indicating pain. Medications for the sedation are chosen individually and dosing is made based on the clinical observation. The infusion includes multiple sedatives and the analgesics are continued throughout the sedation. If the state of sedation is suspected to be too deep, the infusion is stopped and started again with a titrated bolus dosing. (Pohjois-Pohjanmaan Sairaanhoitopiiri 2015.)

2.4 Key elements of analgesics care in terminal patients

Often it is recommended to start analgesic medication with a strong opioid, combine it with a suitable non-opioid, such as NSAIDs or paracetamol, and if needed, a medicine used to treat neuropathic pain. Opioid dosage should be titrated according to individual need and should be increased by 30 % when the desired effect is no longer able to be achieved. Ketamine can reduce the need of opioid-based medicines but should be used only after a consultation with an anaesthesiologist. In cases of resistant pain, an epidural/spinal catheter can be inserted, and a PCA pump (patient-controlled analgesia) can be used to administer the medication. With milder level of pain, PCA pump can be used to administer medication via IV (intravenous), or SC (subcutaneous) line. In general, the analgesic resistance increases rapidly, and doctors, or nurses, should not be afraid to use what is elsewhere considered abnormally large amounts of opioids to resistant pain. (Käypä hoito 2018.)

2.5 Knowledge of nursing students regarding the use of analgesics

Nursing education institutions should include in their curricula pain management courses and an evaluation method, to improve future nurses' knowledge, and attitude. Nursing students in Louisiana, USA were evaluated with a tool called "Nurses' Knowledge and Attitude Survey Regarding Pain management (KNASRP), which included questions directly related to pharmacology. Only 3.8% of 313 nursing students scored 80%, all others were below, which indicates that their knowledge concerning this subject was inadequate. (Miller 2012.) Students who participated in a palliative module in Kingston University had more knowledge to opioid use, and symptom control regarding palliative care than their peers who did not take the course. (Arber 2000.)

According to the European Association for Palliative Care survey results showed that there is still lack of palliative care education and training programmes in Western Europe, limited knowledge about opioid analgesics among health care professionals. (Lynch & Clark 2010) The International Association for the Study of Pain (IASP) has recommended since the eighties that nursing and medicine undergraduate curricula should recognize the importance of education in pain, and how to effectively manage it but it still inadequately addressed. (Ung & Salamonson 2015)

By increasing knowledge and expert care about this matter, it will benefit not only undergraduate nurses, but their future patients as well. The low awareness regarding the use of analgesics in terminal patient care directly affects the quality of care and causes unnecessary suffering. Therefore, a real problem exists, and it should be addressed considering that nursing students after graduating will encounter, and administer analgesics to terminal patients, according to doctor's orders. Laurea University of Applied Sciences provides an elective course related to treating cancer patients. The content of this course includes contact lesson of 4

hours to provide information about palliative care, terminal care, and about death. However the content does not include use of analgesics.

2.6 Nursing education in Finland

Nursing studies take approximately 3,5 years and consists from 210 credits. Nursing degree is regulated by national law regulations and European Union directives to equalize the professional competence in EU-countries. Bachelor's degree of Nursing is provided in 22 Universities of Applied Sciences around Finland. Each University can determine how the studies are built and what methods are used to provide proper knowledge for the students. However, all Universities are committed to standards regulating that the basic studies are the extent of 180 credits and 30 credits of courses provided as advanced studies based on the students' interests. Nursing Competence regulation 2005/36/EU regulates the minimum competence level of nurses. According to the directive the studies should provide following knowledge: Broad knowledge of basic nursing interventions including anatomy and physiology, behaviour, and holistic care, clinical skills acquired in units with proper equipment and from educated personnel under their supervision, knowledge of occupations characteristics, ethics, and about health care principles, ability to participate to occupational trainings, and experience to work with such personnel, experience to work with multi professional team. (Sairaanhoitajat 2014.) However, these competence areas do not include any specific field of medicine, such as palliative and terminal care.

In Finland there are palliative courses available for professional continuing education (täydennyskoulutus), e.g. Parantumattomasti sairaan palliatiivinen ja saattohoito at Tampere University of Applied Sciences (TAMK) which includes a broader perspective of treatment for terminal patients; The Finnish Nursing Association (Fioca) also offers seminars for professionals, e.g. Valtakunnallinen Palliatiivisen hoitotyön seminaari.

3 Purpose, aim, and research question

The purpose of the thesis is to explore what level of knowledge nursing students have concerning the use of analgesics in terminal patients care.

The aim of the thesis is to provide Laurea with updated information about nursing students' knowledge regarding the use of analgesics in terminal care and assess the present need accordingly.

Research question: What is the nursing students' level of knowledge in use of analgesics, in adult terminal patients?

4 Research method

Data was collected using quantitative research method, and the design was a survey study. The graphic table below, Primary Sources of Data and Secondary Sources of Data, is based on Ajayi's (2017). The thesis incorporates secondary data collection of which includes previous knowledge and previous research information about the approach to using analgesics in terminal care. Based on this, a survey was created and conducted. Survey analysis was done using Microsoft Excel to gather primary data. Secondary data was our baseline for theoretical knowledge, and primary knowledge was used in results and conclusion. Both secondary and primary data were used to execute this study as the figure illustrates. The secondary data is collected from reliable sources such as current Käypä hoito suositus, World Health Organization, and studies related to terminal care. Secondary data was used to provide us theoretical background to create the survey, once the survey was implemented to receive data, data was analysed to create primary data. Thus, primary data is used in our studies results and conclusions, as the secondary data is supporting the theoretical background.

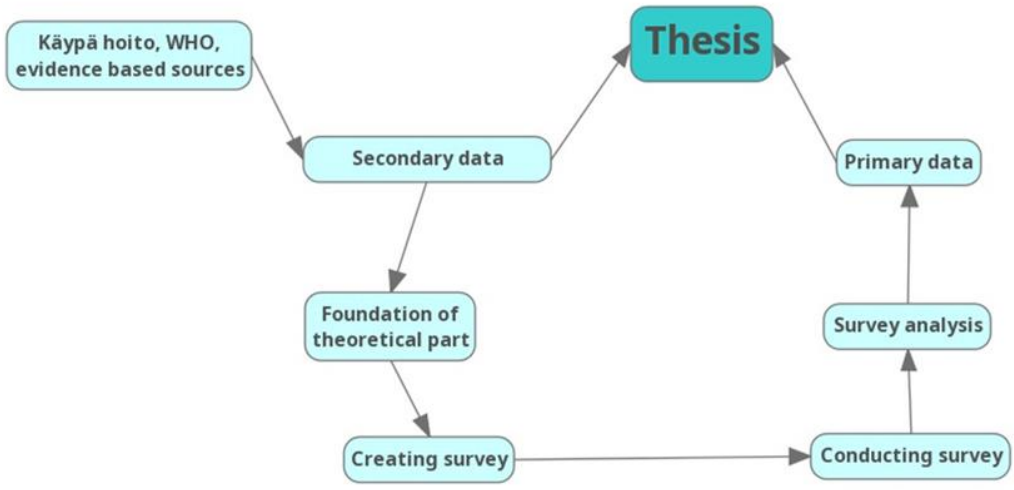

Figure 2. Description of the thesis writing patterns and methods

4.1 Sample

The whole population was taken from Laurea University of Applied Sciences, from the degree nursing students from the third and fourth year. The public health nurses were included as well, due to having a similar curriculum in their core competence studies, and they will be qualified as registered nurses when graduating. The provided population size of the third- and fourth-year students in the five campuses is 647 students. The response rate was surprisingly high: 18.7 %, providing a sample size of 121 participants.

4.2 The survey

The survey acquired data in a structured form, to provide a valid, reliable, data analysis and lead to the results report (Showkat 2017). The survey was cross-sectional, for it occurs only once with a specific population. It includes systematic questions, and closed ended questions. The design stage was carefully prepared. The purpose of each question, the content, the order presented, and the specific wording to achieve the aim of this research was taken into consideration to answer the research question (Kaplan 2015.) The advantages of a survey study is the convenience of gathering data; providing a link online; it enables obtaining results that are statistically significant comparing to other data collection method; it is low cost; it provides precision when measuring data; it produces repeated results under the same conditions leading to reliability. (Sincero 2012.) However, disadvantages exist, e.g. the participants must answer from predetermined answers, and non-response explanation is not possible. (Andrew 2009.)

The survey questions were created based on evidence-based recommendations regarding terminal care provided by Käypä hoito (2018) and Ministry of social affairs and health care recommendations regarding palliative and terminal care in Finland. (2017) The survey included four questions regarding the participants background in nursing studies; this was done to compare if there are factors which might affect in our data analysis. Five questions asked about the participants' opinion on different claims regarding terminal care aspects and nursing. In data analysis attitudes regarding terminal care may be associated to the knowledge level of participants. Last seven questions tested the participants' knowledge regarding analgesics generally used in terminal care. These questions provided data regarding the knowledge of analgesics. Multiple choice questions and Likert Scale were used in the survey; it measures one's knowledge, attitudes, and values. The Likert Scale involves statements where participants are asked to indicate how much they agree or disagree. The scale was chosen for it allows degrees of knowledge, and not just a simple yes or no answer from the participant. It enabled researchers to gather data and perform data analysis.

The survey is found in appendix 3 and 4.

4.3 Data collection

The authors of the thesis decided to use an online tool Survey Monkey, which allowed a safe platform for data collection in a user-friendly way. The survey link was sent to Laurea's third- and fourth-year Nursing degree students, and Public Health Nurses from all campuses. Research permission was applied from Laurea University of Applied Sciences, and a contact person was provided to help us by providing the eligible students' emails. Data collection happened during a time period of 17.1.2019-10.2.2019. Email request was sent twice, for first time the 17th of January and a reminder request the 4th of February.

4.4 Pilot testing

Pilot testing was an essential and necessary part of the research. It determined if there were existing problems that needed to be priory addressed before sending it to a larger sample. (Lavrakas 2008.) The pilot test was conducted with 20 first year students, and a written feedback was requested. Based on the feedback nothing was altered in the survey, but respondents wrote that medical terminology was an issue, e.g. name of medicine and diseases. They specifically mentioned it due to the fact of being first year students and having lack of knowledge in this matter, thus the terminology was not altered. The estimated time to finish the survey was approximately 5 minutes and this information was added to the introduction letter of the survey.

4.5 Data analysis

The method used was descriptive statistics, and data was analysed using Windows Office Excel. The program enables appropriate and accurate results of data analysis, all survey data was loaded to Excel, and charts were made and analysed with the programs aid. Authors used Likert scale to calculate the mean value for each question.

5 Ethical considerations

The integrity of the sample was respected, participation was voluntary, and the participants' personal information was kept strictly confidential, anonymous, and any type of harm will be strictly avoided. (TENK 2012.) All data collected was stored safely during the thesis process. Laurea's student email was used with BCC function (Blind carbon copy) thus all email addresses were kept in secrecy whilst sending a link to the survey where it may be answered safely to ensure data protection and privacy. (SurveyMonkey 2018.)

The survey was created and selected carefully, based on earlier findings and theories. Any question asked were made strictly to the purpose of the research. All sources used for this research from books, journals, online material, and health care magazine articles are referenced, and authors properly acknowledged. Research permission was applied from Laurea University of Applied Sciences before conducting the survey. Research integrity was highly maintained to avoid any sort of misconduct, such as falsification by manipulation of research process, plagiarism, and fabrication regarding data or the results. Answering the survey can be regarded as a sign of consent.

6 Results

The survey's results are divided in 2 categories - respondents background and knowledge. The background section included questions about which campus does the respondent study in, previous clinical placements, has the student taken care of palliative or terminal patient or receive education regarding the use of analgesics in terminal care, attitudes regarding

terminal care, A decision was made to combine respondents' attitudes and background, as attitudes are often influenced with by the students background. The section measuring knowledge included questions regarding analgesics which are commonly used in terminal care. Data is also presented in graphical form to emphasize the main results. Respondents from the Finnish and English surveys answered to all 16 questions completely and nothing was left blank. The results were analysed together.

In the knowledge section of the survey the calculated average in total percentage of correct answers n=68 (56 %). This chart summarizes the average level of knowledge regarding the use of analgesics in terminal patient care.

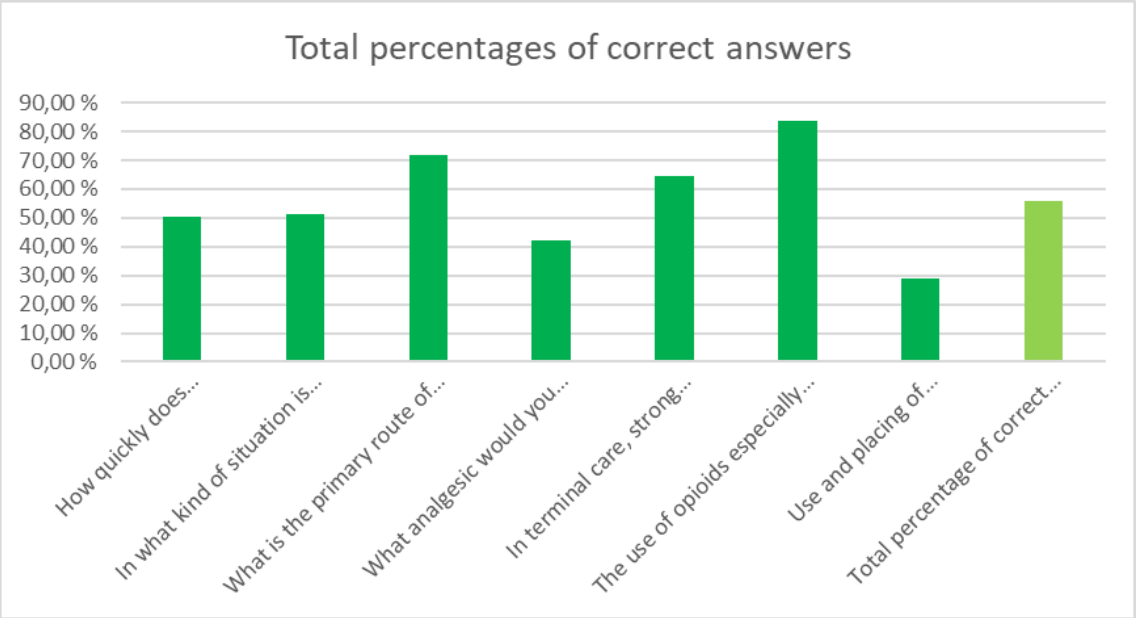

Figure 3. Total percentage of correct answers

6.1 Background

The first part of the survey, questions 1-9, contain information of which campus the respondents' study, their latest clinical practice module completed, if they have taken care of a terminal or palliative patient and if they had received education from Laurea University of Applied Sciences about analgesics in terminal care, and about the attitudes regarding terminal care. The whole population for the Finnish and English survey was N= 648 and survey respondents were n=121 (18.7%). More specifically there were 52 from Tikkurila (43%), 22 from Porvoo (18%), 20 from Otaniemi (16.5%), 14 from Hyvinkää (11.5%) and 13 from Lohja campus (11%).

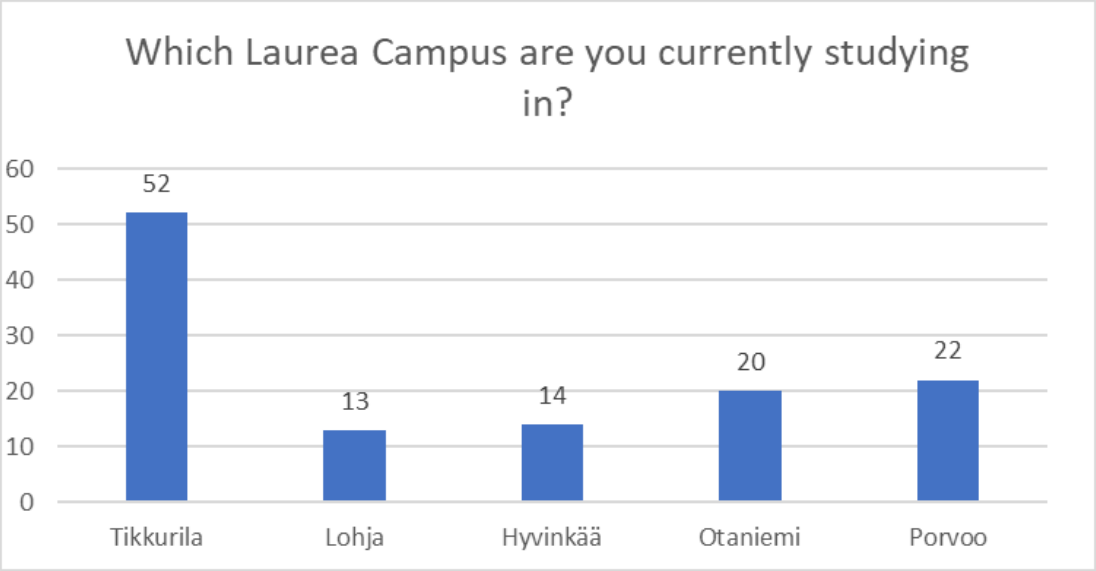

Figure 4. Which Laurea Campus are you currently studying in.

Students who had completed their fifth clinical practice were 58 students (48%), fourth clinical practice 50 students (<41%), third clinical practice 10 (<8%), second clinical practice 1 (>1%), first clinical placement 1 (>1%) and students who had not been in a clinical practice 1 (>1%).

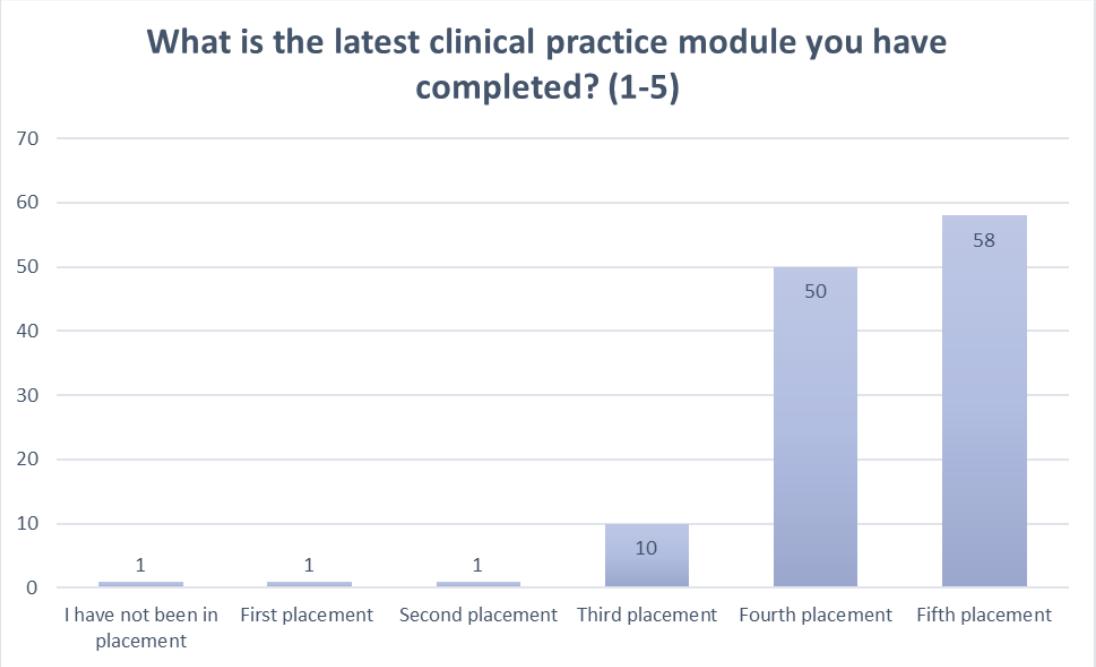

Figure 5. What is the latest clinical practice module you have completed.

Respondents were asked if they had taken care of terminal/palliative patient and 95 (78%) answered yes and 26 (22%) had not nursed patients in this category.

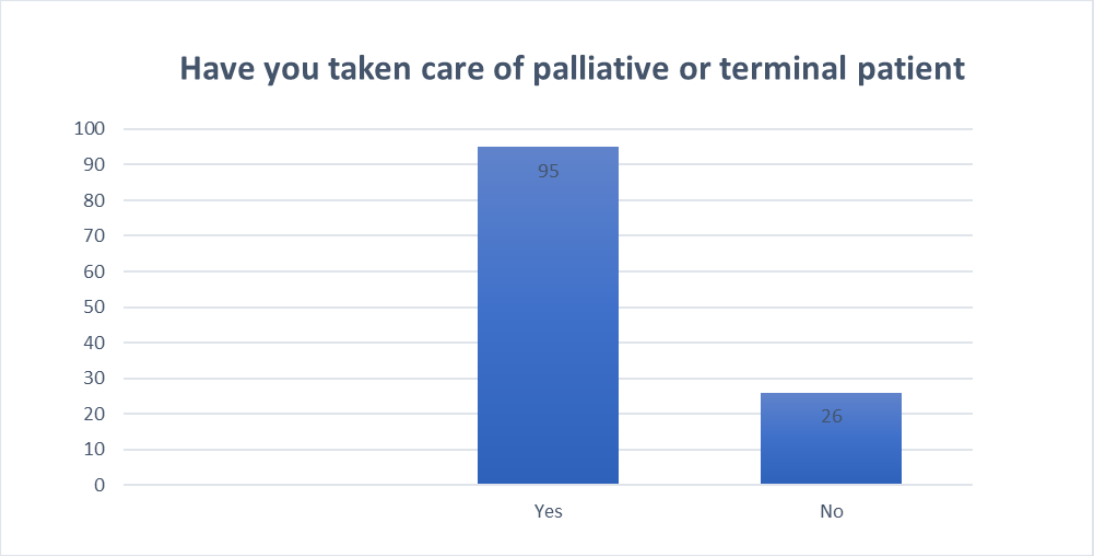

Figure 6. Have you taken care of palliative or terminal patient.

According to the respondents 34 (28%) had received education from Laurea regarding use of analgesics in terminal care and 87 (72%) had not.

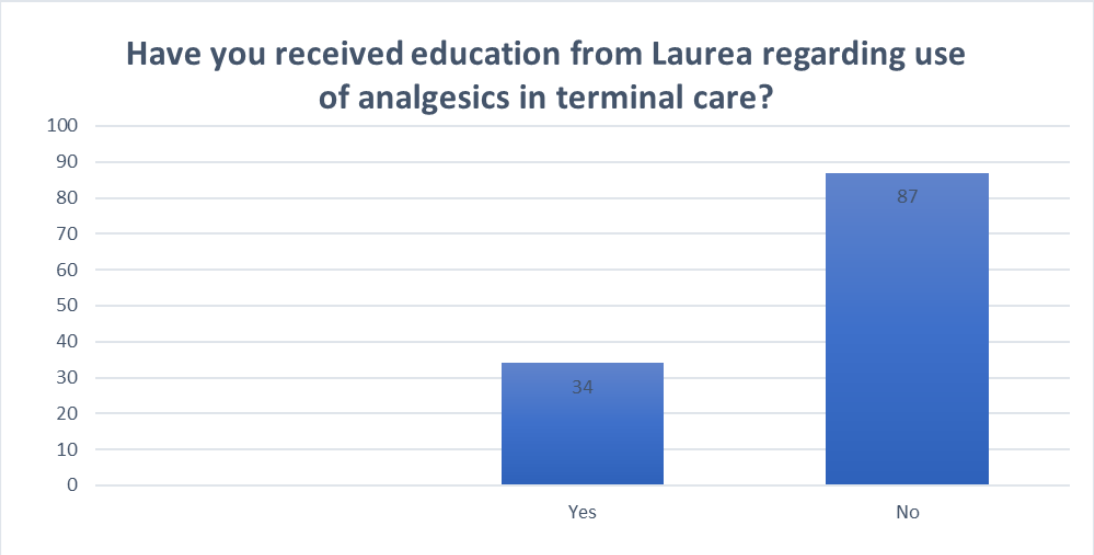

Figure 7. Have you received education from Laurea regarding use of analgesics in terminal care.

One of the questions was about their attitude regarding if pain control is essential to ensure that terminal patients are provided with improved quality of life. Results showed that 110 (91%) respondents strongly agreed, 8 (7%) agreed, 0 (0%) were neutral, 0 (0%) disagreed and 3 (2%) strongly disagreed. The mean value is 4.54.

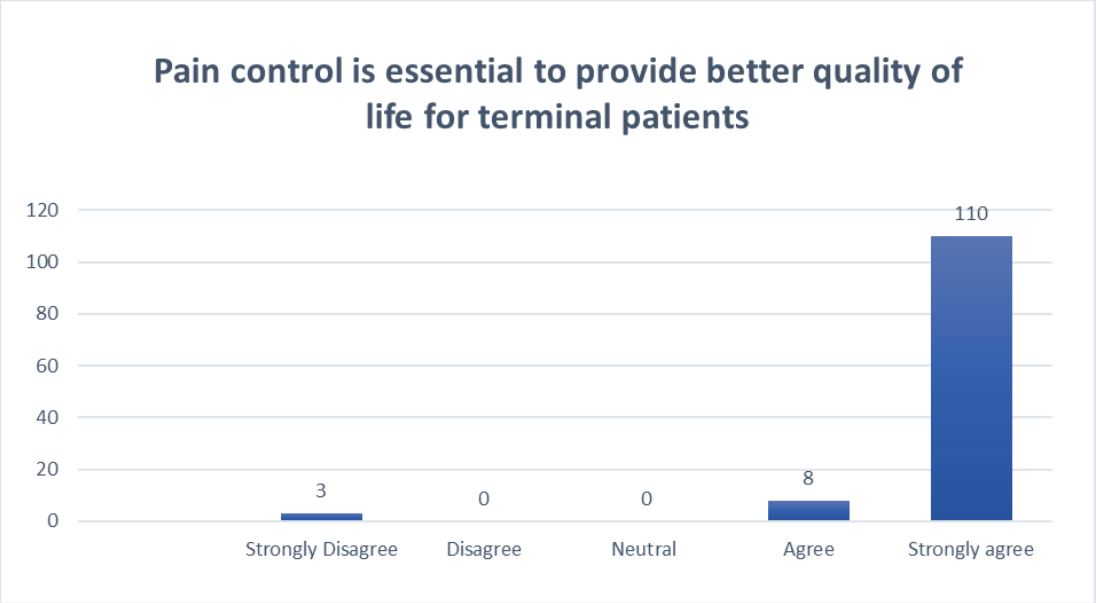

Figure 8. Pain control is essential to provide better quality of life for terminal patients.

Students were asked if terminal pain management is influenced due to nurse's own attitude toward pain. 64 (53%) agreed, 37 (30.5%) strongly agreed, 8 (6.5%) were neutral, 11 (9%) disagreed and 1 (>1%) strongly disagreed, the mean value is 5.05.

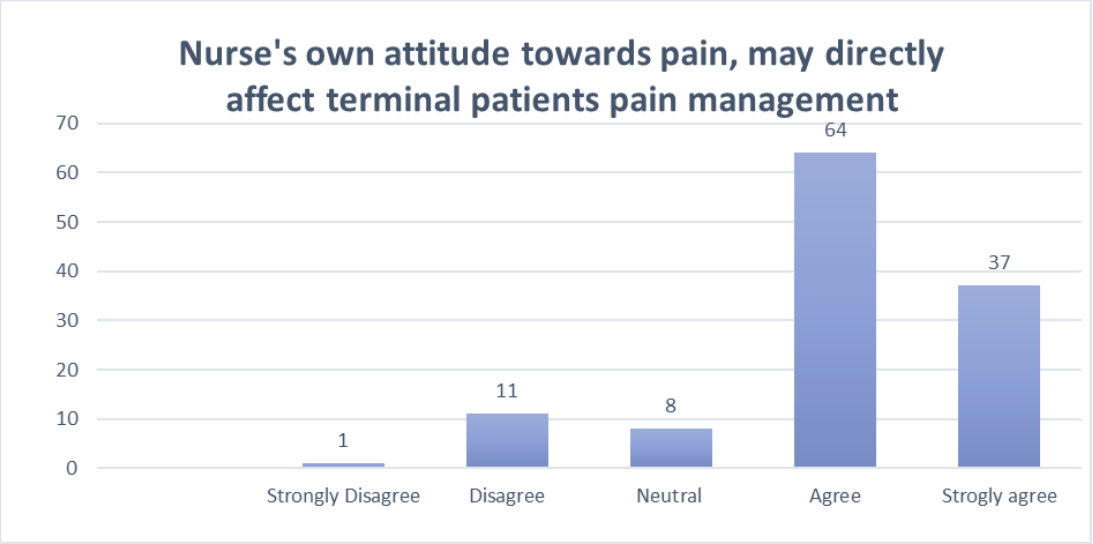

Figure 9. Nurse's own attitude towards pain, may directly affect terminal patients pain management.

Most respondents 82 (68%) strongly agreed that nursing competence concerning terminal care should be increased to ensure good quality care, 32 (26.5%) agreed, 4 (3%) were neutral, 0 (0%) disagreed and 3 (2.5%) strongly disagreed. The mean value is 5.58.

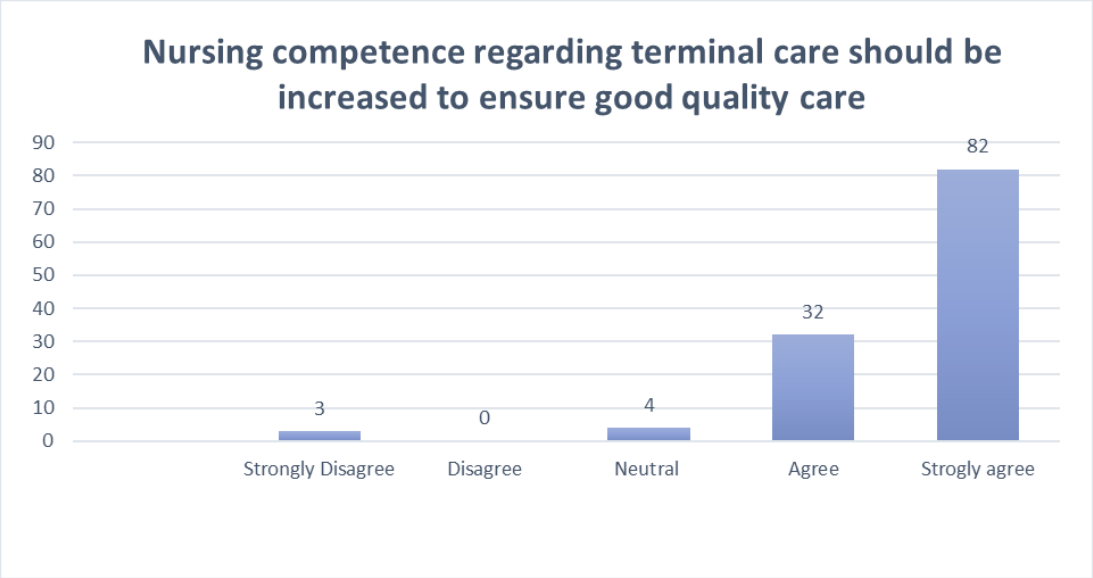

Figure 10. Nursing competence regarding terminal care should be increased to ensure good quality of care.

In one question the students were asked how important they thought that learning about analgesics use was for terminal care patient. Results showed that 69 (57%) considered very important, 42 (34.5%) important, 9 (7.5%) were neutral, 1 (>1%) not very important and 0 (0%) not at all important. The mean value is 4.47.

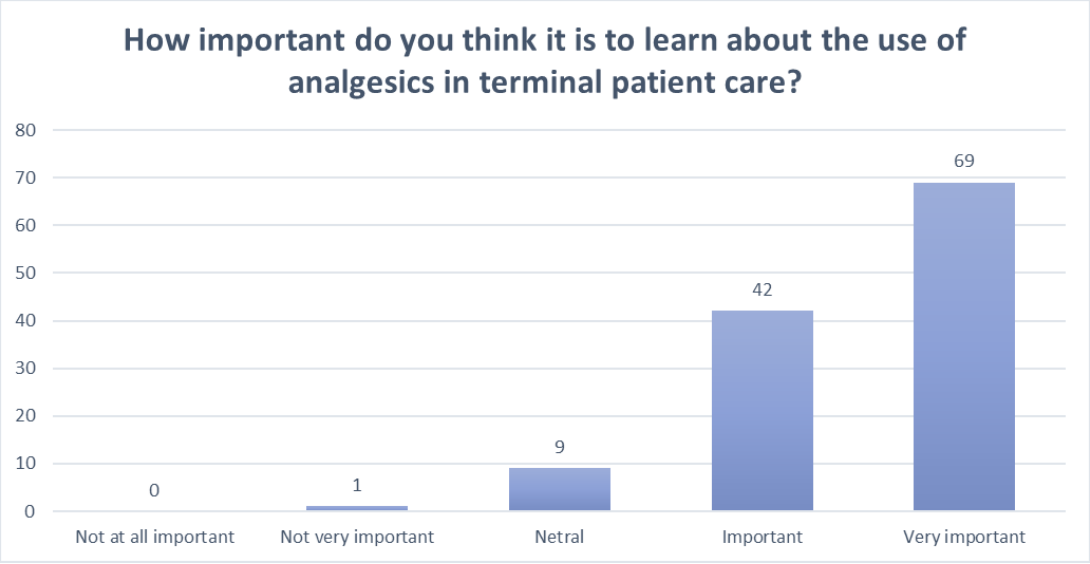

Figure 11. How important do you think it is to learn about the use of analgesics in terminal patient care.

If Laurea University of Applied Sciences would provide a course regarding nursing in palliative and terminal care 98 (81%) respondents answered that they would enrol and 23 (19%) would not participate.

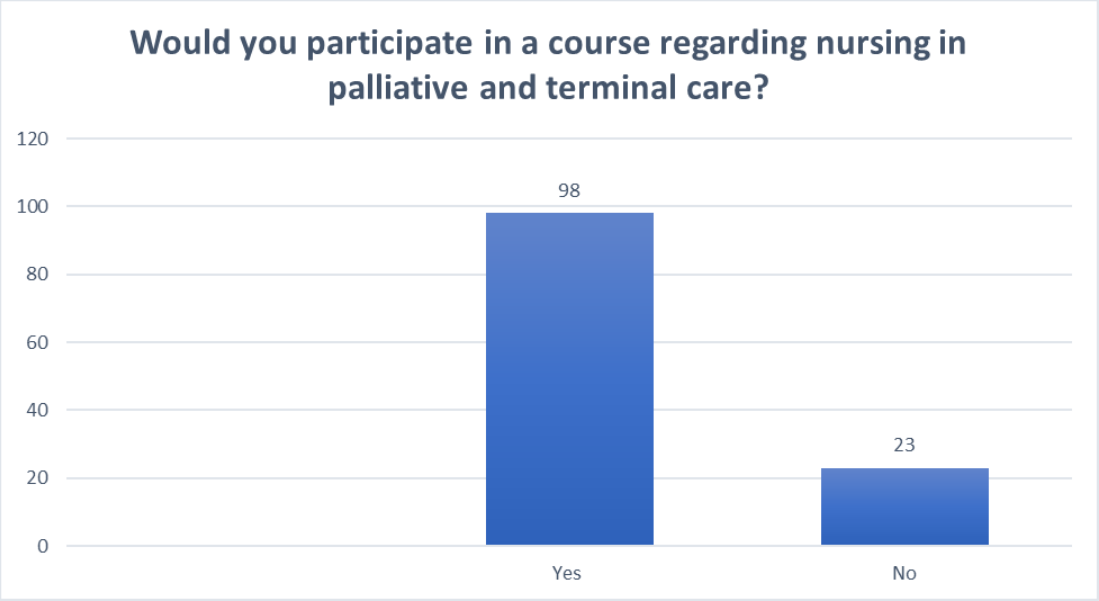

Figure 12. Would you participate in a course regarding nursing in palliative and terminal care.

6.2 Knowledge

The last part of the survey consisted of a knowledge test regarding analgesics use from questions 10-16. This enabled the authors to assess the respondents' level of knowledge regarding the use of analgesics and only one answer should be chosen. The authors illustrate the correct answer with a green colour in the following figures.

Students' knowledge regarding how quickly transmucosal fentanyl medicine start to affect and for how long it lasts 61 (50.5%) respondents gave a correct reply and 60 (49.5 %) missed it. The correct answer is 5-10 minutes, affecting for 1 hour.

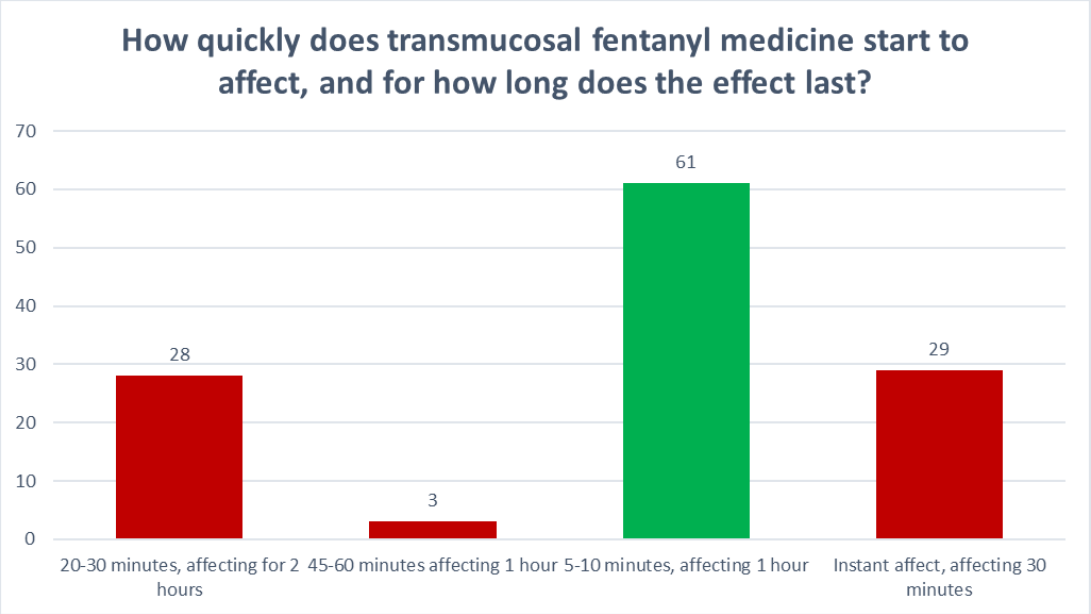

Figure 13. How quickly does transmucosal fentanyl medicine start to affect, and for how long does the effect last.

Regarding the knowledge in what kind of situation Ketamine is used in terminal care, 62 (51%) respondents answered correctly and 59 (49%) replied incorrectly. The correct answer is to a resistant cancer pain when pain relief is not achieved with regularly used analgesics.

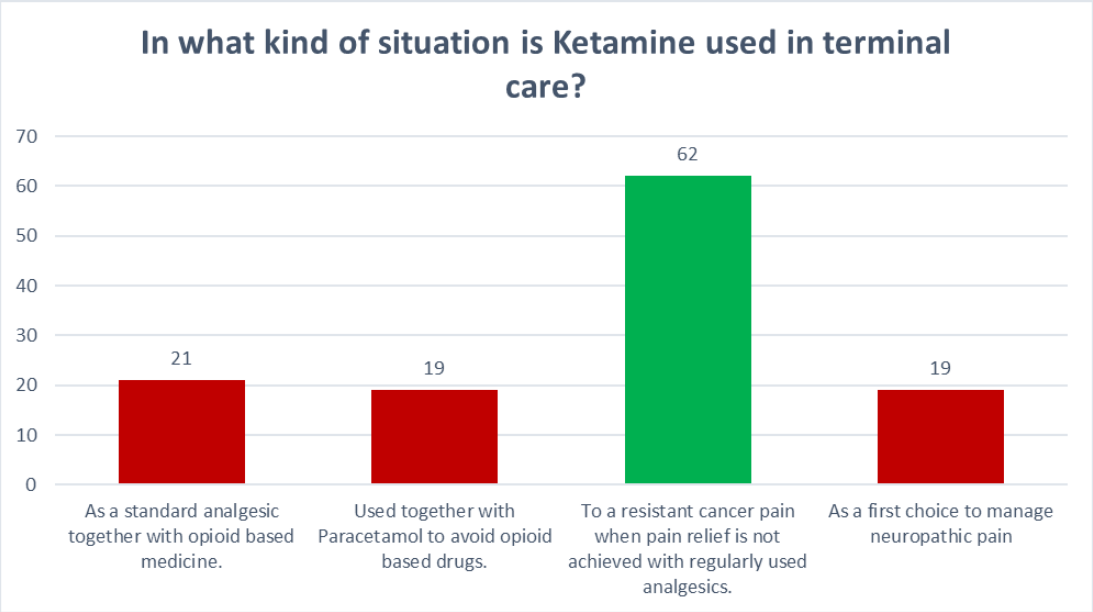

Figure 14. In what kind of situation is Ketamine used in terminal care.

Oral route is the primary route of administering pain medication; 87 (72%) respondents answered correctly and 34 (8%) incorrectly. The correct answer is oral.

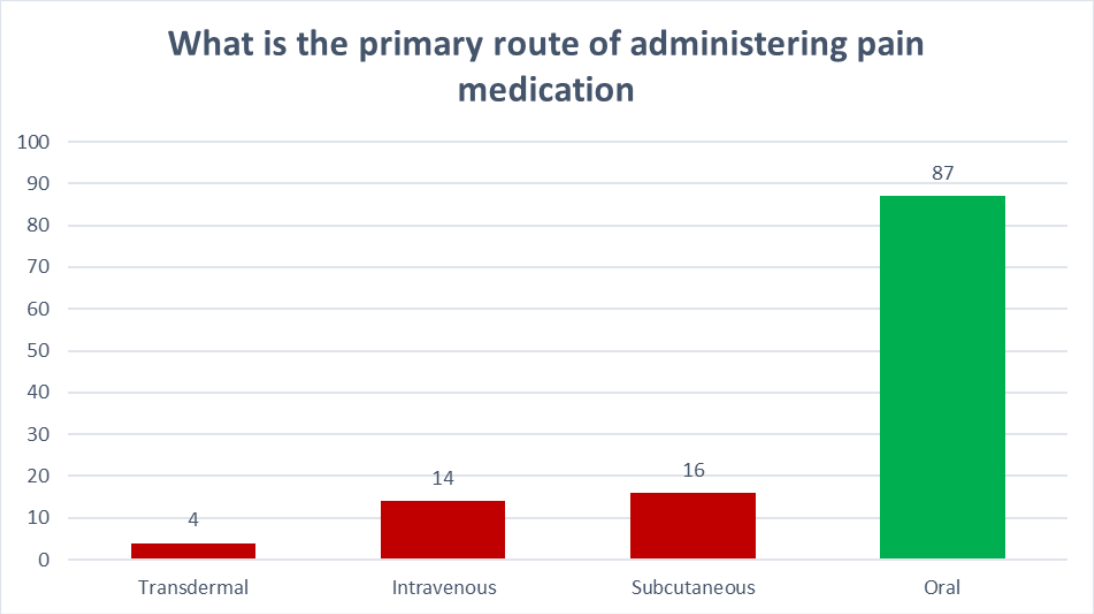

Figure 15. What is the primary route of administering pain medication.

One of the questions addressed what analgesic would be chosen for patient's breakthrough pain, if the patient is regularly receiving opioid based medication. The results showed that 51 (42%) answered correctly and 70 (58%) wrong. The correct answer is short acting opioids.

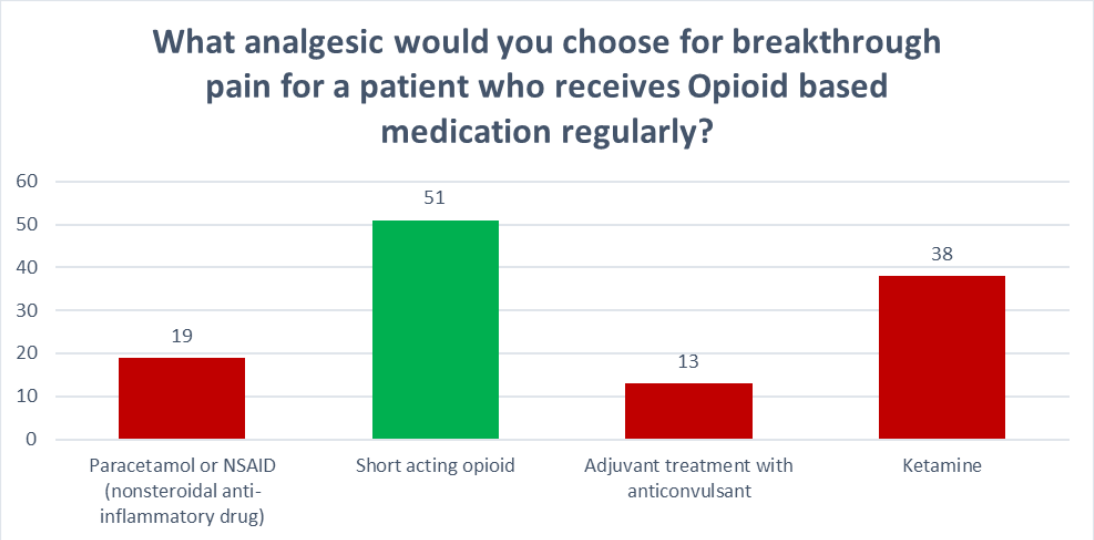

Figure 16. What analgesic would you choose for breakthrough pain for a patient who receives Opioid based medication regularly.

Strong opioids can also be used to treat dyspnea in terminal care patients; 78 (64.5%) respondents answered accurately and 43 (35.5%) inaccurately.

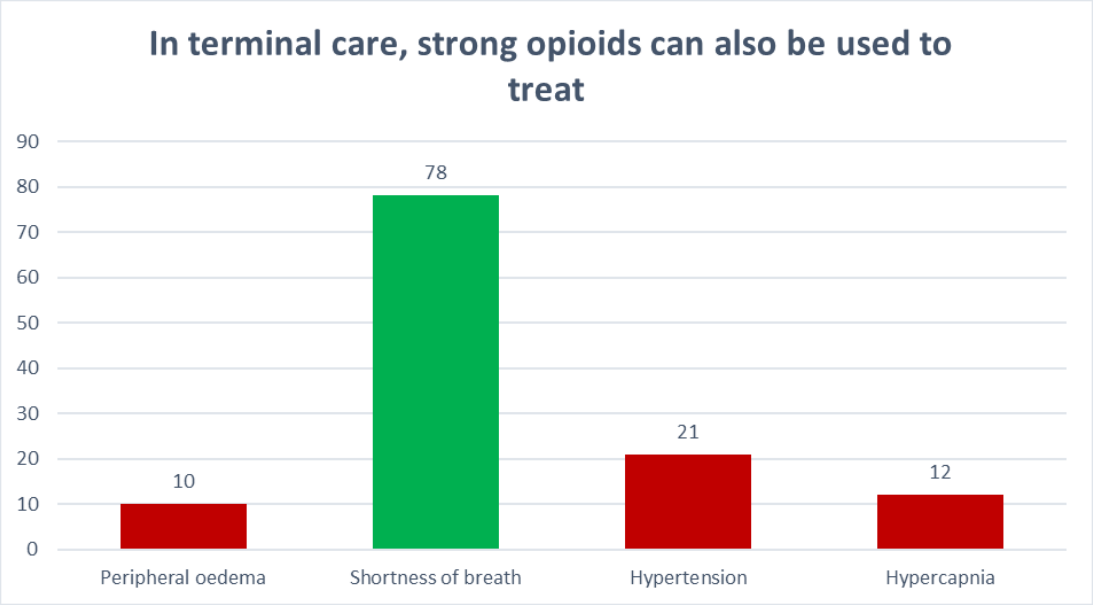

Figure 17. In terminal care, strong opioids can also be used to treat.

The use of opioids with geriatric patients increases falling risk; 101 (83%) respondents answered correctly and 20 (17%) erroneously.

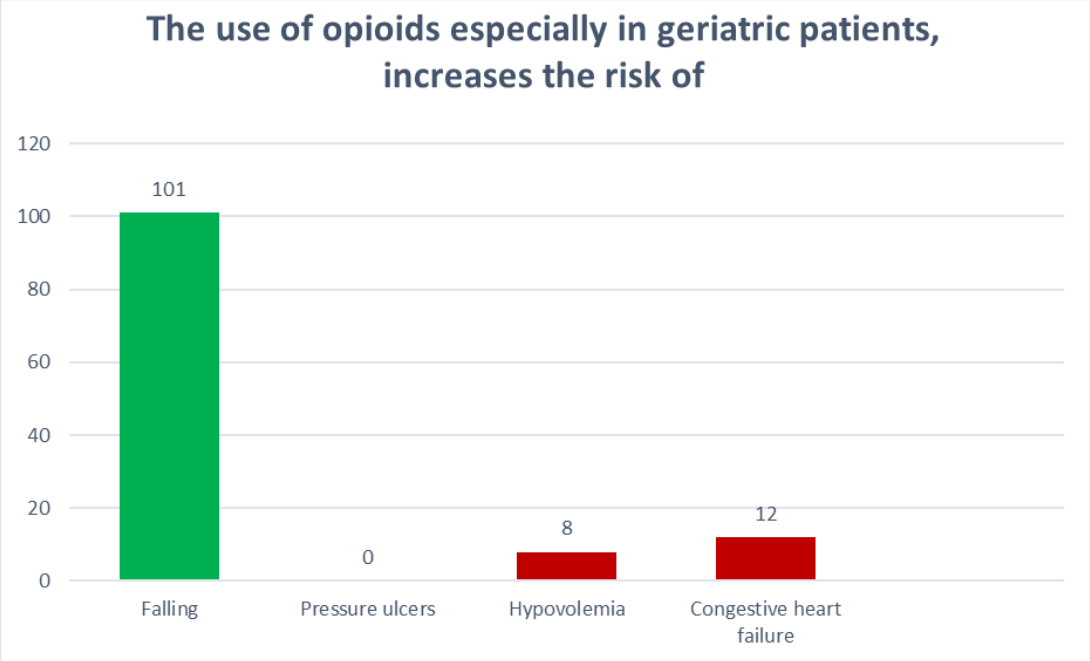

Figure 18. The use of opioids especially in geriatric patients, increases the risk of what.

The use and placing of a transdermal fentanyl should be carefully evaluated if the patient is; 35 (29%) respondents responded right and 86 (71%) wrong. The correct answer from the given options is if the patients is cachectic.

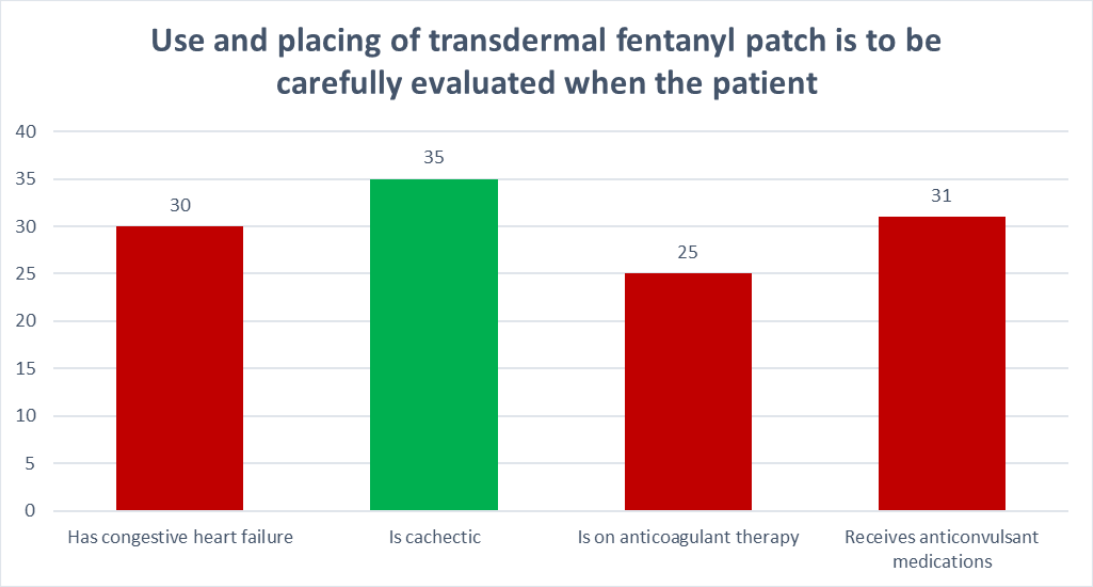

Figure 19. Use and placing of transdermal fentanyl patch is to be carefully evaluated when the patient.

7 Discussion

The purpose of the thesis was to explore what level of knowledge Laurea nursing students have concerning the use of analgesics in terminal patients care, and the aim was to provide Laurea University of Applied Sciences with updated information about nursing students' knowledge regarding the use of analgesics in terminal care and assess the present need accordingly. The purpose and aim of this research were achieved by conducting the survey, and by analysing the results in this study.

Most students had taken care of a terminal or a palliative patient n=95 (78%), which emphasizes the importance of providing and understanding this special patient group that is encountered in different health care settings. (Care Search 2017) According to the data result, n=87 respondents had not received teaching from the university concerning analgesics. Nevertheless, n=34 respondents had received teaching on this subject, n=8 from the English survey and n=26 from the Finnish survey. Results are contradicting, due to no specific teaching course on this matter; it is unclear where they have had teaching on analgesics for terminal patients.

The data collected indicates strongly, that majority of nursing students feel it is important to learn about the use of analgesics in terminal care and most n=98, would participate to a course regarding palliative care. Attitudes towards learning of this matter indicate that students are aware on the important nursing skills which palliative and terminal care require. However, the results show that there is a small number n=3 (2,5 %) of nursing students' who

strongly disagree that nursing competence regarding terminal care should be increased to ensure good quality care, yet only n=1 (<1%) student thinks it is not very important to learn about the use of analgesics in terminal care, n=9 (7.5%) students answered neutral to the same question. This study does not investigate how cultural differences may or may not affect the attitudes and beliefs of the students towards terminal care however, as the study is made to a multicultural nursing student, the cultural differences can naturally affect the results.

The authors were positively surprised how well students answered correctly on the knowledge part. A correlation between experience of taking care of terminal patient and knowledge was assumed to happen, however n=95 (78%) had taken care of terminal patient, yet on average n=68 (56%) answered correctly on the knowledge test questions. A similar finding was reported by Lebovits et al. (1997) where N=686 respondents had 56% correct score in pain management knowledge survey.

The results of this study are in line with other studies which support and reinforces that there is a need to educate nurses and nursing students about pain management in terminal care. The Finnish Ministry of Education and Culture is funding a project during 2018-2020, named EduPal, which aims to develop education in palliative nursing in three competency levels and includes care and medication for terminal patients. (EduPal n.d.) Arber (2001) agrees that a palliative care module should be compulsory in nursing education, with a inclusion of a palliative care placement. By providing education on this matter, it leads to knowledge, skill increasement and assists any possible barriers that nurses may have concerning optimal pain management. (Alexander 2016)

7.1 Reliability and validity

The results indicated strongly that majority of the nursing students feel that knowledge regarding palliative- and terminal care is important, and that the competence level of nurses should be increased to ensure good quality care for this patient group. In the section measuring knowledge n=68 (56 %) in average answered correctly to the questions. The sample size used in the study was n=121, (<19 %) from the total populations. Usually in online surveys to a group invited to participate to a new study, the expected respondent rate varies between 10-15 %. (Survey Monkey 2019.) Therefore, the authors expected a respondent rate of approximately n=65 students. The authors are pleased that the expected rate of respondents was almost doubled. With this sample size the calculated margin of error in our study is 8 %, and the level of confidence 95 %. (Survey Monkey 2019.) Therefore, the actual results may vary between with >8% and <8 %. However, as the results are strong and remain quite similar, even if they would be 8 % weaker.

The survey was created using reliable and valid sources to answer to the study's research question: "What is the nursing students' level of knowledge in use of analgesics, in adult terminal patients? This was measured with the knowledge test part of the survey. The section measuring knowledge included analgesics often used in terminal care. The survey included a vocabulary about some terms used in the survey, however it was not comprehensive. When presenting the thesis in thesis seminar, a student feedback indicated that not all students knew the term cachectic. This was used as an answer option to a question regarding placing a Fentanyl patch. This same question had the lowest rate of correct answers n=35 (29%), it is possible that the term was unknown to some of the students, especially to those who study with their second language. The term missing from vocabulary, or instead using plain English, could have affected to results positively. However, the authors decided to use medical terminology in the survey, as majority of the terms should be familiar to final year nursing students. In addition to questions measuring knowledge the authors included questions about backgrounds of the respondents, this was done to see if there was a correlation with the level of knowledge and attitudes toward palliative- and terminal care. Background questions also increase the validity by indicating the respondents experience. The questions used in the survey complimented the research question, thus provided applicable data to complete the aim of the thesis, which was to provide Laurea with updated information about nursing students' knowledge regarding the use of analgesics in terminal care and assess the present need accordingly. (Validity and reliability in quantitative studies 2015.)

The students' participating to this study have different levels of knowledge and nursing skills due to individual learning abilities and background factors. There were respondents n=13 (>10 %) who had completed three or less practical placements but are on their third- or fourth year of their studies, thus included to the total population. Many of the important clinical skills and medical terminology are acquired in clinical placements, from students with less clinical placement, the same level of knowledge cannot be expect compared to n=108 (>89%) students with four or more clinical placements completed.

There were n=95 (78%) students' who had taken care of a palliative or terminal care patients as other had not, this can significantly influence the level of knowledge in the benefit of students with experience of this patient group.

7.2 Limitations

The limitations of this study are that only 19% students responded to the survey, the survey was conducted online, thus the survey was not controlled and there was no way to ensure that survey was done without any form of consultation, this limits the possibility to ask if any of the questions were unclear to the respondent.

The section measuring knowledge had in each question four answer choices without a possibility to answer, “I don’t know”, this leaves a possibility of guessing the correct answer.

The study was conducted in two languages, Finnish and English, for some students this could limit the possibility to respond in their native language and it could have increased the possibility to not comprehend the questions or answer choices. However, these two languages are the official teaching languages of the degrees available in Laurea, as well as the languages the authors were able to create the survey without risking translation errors. (Research Limitations n.d.)

8 Conclusion

In working life, patient and family deserve care that is the same quality, and not dependable on the nurses’ knowledge level about pain management. Doctors are the ones’ ordering the medicines, but as nurses spend more time with the patient, it is expected from nurses to be able to supervise the patients’ interest by making observations if the analgesics provide the expected pain management. Sometimes the medicine orders are provided with options such as; 4-6 mg Morphine I.V or SC, when needed.

Nurses are responsible to conduct the treatment and are expected to have the professional knowledge of checking how much was given previously, how often, and should have the professional expertise to increase the dose or to give it more frequently if the patient is expressing pain.

The contribution of this study assesses the present level knowledge of graduating students of healthcare area and emphasizes the need and urgency of preparing future nurses for the challenges that they will be facing in care of end-of-life patients.

The authors have high hopes that this thesis and the clear results would be taken into consideration when content of the courses are planned in the future.

8.1 Recommendations

The results of this study are only applicable to Laurea University of Applied science nursing and public healthcare nursing students. Other Universities of Applied sciences in Finland have different curriculums, thus results of knowledge level may be dependable to which school is the student studying in. More studies are necessary to research the knowledge level of nursing students in Finland.

8.2 Acknowledgements

We are especially thankful for our thesis supervisors and all students who took the time to participate on our survey

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Figures

Appendices

Appendix 1: Introduction letter of the survey

Dear Laurea's health care student,

You are invited to participate to our thesis study "Final year nursing students' knowledge regarding the use of analgesics in terminal patient care."

The following survey is created to evaluate the knowledge of nursing students in the use of analgesics in terminal patient care. The results will be used in the thesis data analysis to provide information for thesis authors'. It will take approximately 5 minutes to complete it. The survey will be completed anonymously, and all data is stored in secret and destroyed after thesis is published.

We want to thank You for Your participation and time. It is highly appreciated.

Yours,

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Appendix 2: Tutkimuskyselyn saatekirje

Hyvä Laurean terveysalan opiskelija,

Sinut on kutsuttu osallistumaan opinnäytetyömme tutkimukseen loppuvaiheen sairaanhoitajaopiskelijoiden osaamisesta saattohoitopotilaiden lääkkeellisessä kivunhoidossa. ”Final year nursing students knowledge regarding the use of analgesics in terminal patient care"

Tutkimuskysely on luotu tarjoamaan tietoa opiskelijoiden osaamisesta saattohoitopotilaiden lääkkeellisessä kivunhoidossa. Tutkimustulokset tulevat opinnäytetyön kirjoittajien käyttöön tiedon analysointia varten. Tutkimukseen osallistuminen vie arviolta 5 minuuttia. Tutkimuskysely täytetään anonyymisti, säilytetään luottamuksellisesti ja tuhotaan opinnäytetyön julkaisun jälkeen.

Kiitämme osallistumisesta ja ajastasi!

Ystävällisin terveisin:

Tekijät: Laura Merijärvi ja Deborah Franke Miranda Hämäläinen

Yhteystiedot:
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Appendix 3: Survey

Instruction: Please, always choose only one option and answer independently.

Term vocabulary

Analgesic refers to a medication that provides relief from pain without putting you to sleep or making you lose consciousness. (Drugs.com 2018)
Terminal care is defined as part of palliative care that is narrowed down to the very end of life care, which happens during the patient's final days or weeks, when death is expected. (HUS n.d.)
Palliative care is defined as care of terminally ill patient aiming to improve the quality of life. (Tays, 2018)

1. Which Laurea Campus are you currently studying in?

1. Hyvinkää __
2. Lohja ___
3. Otaniemi ___
4. Porvoo ___
5. Tikkurila ___

2. What is the latest clinical practice module you have completed? (1-5)

1. I have not been in placement__
2. First placement ___
3. Second placement ___
4. Third placement ___
5. Fourth placement ___
6. Fifth placement ___

3. Have you taken care of a palliative or terminal patient?

1. Yes ___
2. No ___

4.Have you received education from Laurea regarding use of analgesics in terminal care?

1. Yes ___
2. No ___

5. Pain control is essential to provide better quality of life for terminal patients.

1. Strongly Disagree__
2. Disagree__
3. Neutral__
4. Agree__
5. Strongly agree__

6. Nurse´s own attitude towards pain, may directly affect terminal patients pain management.

1. Strongly Disagree__
2. Disagree__
3. Neutral__
4. Agree__
5. Strongly agree__

7. Nursing competence regarding terminal care should be increased to ensure good quality care.

1. Strongly Disagree__
2. Disagree__
3. Neutral__
4. Agree__
5. Strongly agree__

8. How important do you think it is to learn about the use of analgesics in terminal patient care?

1. Not at all important ___
2. Not very important ___
3. Neutral__
4. Important ___
5. Very important ___

9. Would you participate in a course regarding nursing in palliative and terminal care?

1. Yes ___
2. No ___

Knowledge test regarding the use of analgesics, circle the correct answer

10. How quickly does transmucosal fentanyl medicine start to affect, and for how long does the effect last?

a) 20-30 minutes, affecting for 2 hours
b) 45-60 minutes affecting 1 hour
c) 5-10 minutes, affecting 1 hour
d) Instant affect, affecting 30 minutes

11. In what kind of situation is Ketamine used in terminal care?

a) As a standard analgesic together with opioid based medicine.
b) Used together with Paracetamol to avoid opioid based drugs.
C) To a resistant cancer pain when pain relief is not achieved with regularly used analgesics.
d) As a first choice to manage neuropathic pain.

12. What is the primary route of administering pain medication?

a) Transdermal
b) Intravenous
c) Subcutaneous
d) Oral

13. What analgesic would you choose for breakthrough pain for a patient who receives Opioid based medication regularly?

a) Paracetamol or NSAID (nonsteroidal anti-inflammatory drug)
b) Short acting opioid
c) Adjuvant treatment with anticonvulsant
d) Ketamine

14. In terminal care, strong opioids can also be used to treat
a) Peripheral oedema
b) Shortness of breath
c) Hypertension
d) Hypercapnia

15. The use of opioids especially in geriatric patients, increases the risk of

a) Falling

b) Pressure ulcers

c) Hypovolemia

d) Congestive heart failure

16. Use and placing of transdermal fentanyl plaster is to be carefully evaluated when the patient

a) Has congestive heart failure

b) Is cachectic

c) Is on anticoagulant therapy

d) Receives anticonvulsant medications

Appendix 4: Tutkimuskysely

Ohjeet: Ole hyvä ja valitse aina vain yksi vaihtoehto ja vastaa kyselyyn yksin.

Sanasto

Analgeesi viittaa lääkkeeseen joka lievittää kipua, mutta ei toteuta anestesiaa tai aiheuta tajunnan menetystä. (Drugs.com 2018)
Saattohoito on määritelty osaksi palliatiivista hoitoa, saattohoidossa hoidetaan potilasta hänen elämän viimeisinä hetkinä; yleensä viimeisinä viikkoina tai päivinä kun kuolema on odotettavissa. (HUS n.d.)
Palliatiivinen hoito määritellään parantumattomasti sairaan potilaan hoidoksi, jonka tarkoitus ei ole parantaa potilasta, vaan parantaa elämän laatua. (Tays, 2018)

1. Missä Laurean kampuksella opiskelet

1. Hyvinkää __
2. Lohja ___
3. Otaniemi ___
4. Porvoo ___
5. Tikkurila ___

2. Mikä on viimeisin työharjoittelu jonka olet suorittanut

1. En ole suorittanut yhtään harjoittelua__
2. Ensimmäinen harjoittelu__
3. Toinen harjoittelu__
4. Kolmas harjoittelu__
5. Neljäs harjoittelu__
6. Viides (syventävä) harjoittelu__

3. Oletko koskaan hoitanut saattohoitopotilasta?

1. Kyllä__
2. Ei__

4. Oletko saanut Laureassa opetusta analgeesien käytöstä saattohoito potilaiden hoidossa?

1. Kyllä__
2. Ei__

5. Paremman elämänlaadun takaamiseksi saattohoitopotilaalle, on kivunlievitys ensiarvoisen tärkeää.

1. Vahvasti eri mieltä__
2. Eri mieltä__
3.En osaa sanoa__
4. Samaa mieltä__
5. Vahvasti samaa mieltä__

6.Sairaanhoitajan oma asenne kipuun saattaa vaikuttaa suoraan saattohoito potilaan kivunhoitoon.

1. Vahvasti eri mieltä__
2. Eri mieltä__
3.En osaa sanoa__
4. Samaa mieltä__
5. Vahvasti samaa mieltä__

7.Hyvän hoidon takaamiseksi, tulee saattohoidon osaamista lisätä.

1. Vahvasti eri mieltä__
2. Eri mieltä__
3.En osaa sanoa__
4. Samaa mieltä__
5. Vahvasti samaa mieltä__

8. Kuinka tärkeää on mielestäsi saada opetusta analgeesien käytöstä saattohoitopotilaiden hoidossa?

1. Vahvasti eri mieltä__
2. Eri mieltä__
3.En osaa sanoa__
4. Samaa mieltä__
5. Vahvasti samaa mieltä__

9. Osallistuisitko kurssille joka käsittelisi palliatiivisen- ja saattohoidon hoitotyötä?

1. Kyllä__
2. Ei__

10. Kuinka nopeasti transmukosaalinen fentanyylivalmiste alkaa vaikuttaa, ja kuinka kauan sen vaikutus kestää?

a) 20-30 minuttia, vaikuttaen 2 tuntia
b) 45-60 minuuttia, vaikuttaen 1 tunnin
c) 5-10 minuuttia, vaikuttaen 1 tunnin
d) välittömästä, vaikuttaen 30 minuuttia

11. Milloin Ketamiinia käytetään saattohoidossa?

a) Yleisenä kipulääkkeenä opiaattipohjaisen kipulääkkeen rinnalla
b) Paracetamolin rinnalla opiaattipohjaisten kipulääkkeiden välttämiseksi
c) Resistanssiin syöpäkipuun kun vastetta ei saavuteta muilla kipulääkkeillä.
d) Ensisijaisena lääkkeenä neuropaattisen kivunhoitoon.

12. Mikä on ensisijainen kipulääkkeen antoreitti?

a) Transdermaalinen
b) Intravenaalinen
c) Subkutaaninen
d) Oraalinen

13.Mikä kipulääke tulisi valita läpilyöntikivun hoitoon potilaalla jolla on käytössä jatkuva opiaattipohjainen kivunlievitys.

a) Paracetamoli tai tulehduskipulääke
b) Lyhytvaikutteinen opiaatti.
c) Adjuvanttihoitona käytettävä antikonvulsiivi
d) Ketamiini

14. Saatohoitopotilaiden hoidossa opiaatteja voi myös käyttää hoitamaan

a) Perifeerista ödemaa
b) Hengenahdistusta
c) Hypertensiota
d) Hyperkapnia

15. Opiaattien käyttö erityisesti geriatrisilla potilailla lisää

a) Kaatumisriskiä

b) Painehaavariskiä

c) Hypovolemian riskiä

d) Sydämen vajaatoimintaa

16. Transdermaalisen fentanyylilaastarin käytössä ja asettemisessa tulee erikseen huomioida

a) Potilaan sydämen vajaatoiminta

b) Potilaan kakeksia

c) Potilaan antikoagulantti lääkitys

d) Potilaan antikonvulsiivinen lääkitys