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PAIN MANAGEMENT OF A CANCER PATIENT IN PALLIATIVE CARE

– A systematic review



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This is a bachelor's thesis on pain management of a cancer patient in palliative care. A systematic literature review was used to analyze the data and research question was set to determine different methods of pain management. Academic databases, Cinahl and Medline were used to find research articles. Several books were used in the background. Multiple inclusion and exclusion criteria were used to choose the research articles for this research.

Cancer is a group of diseases and it's the leading cause of deaths worldwide. As cancer has many manifestations and it can develop at any site and tissue of the body, care of a cancer patient can be complex. Despite research that has provided more information about the disease, the overall survival rate remains 66 %.

Palliative care is an approach that supports and improves the quality of life of patients with terminal illness. It regards dying as a normal process and does not intend to hasten or extend life. Palliative care can be given in an addition to therapeutic measures such as chemotherapy. Palliative care originates from the work of nurse and doctor Dame Cicely Saunder's work who founded St. Christopher's hospice in London in 1967. Saunders advocated systemic research and scientific observation as an essential part of this specialty. Saunder's work has lead to foundation of so many hospices worldwide. There are many obstacles in palliative care, like incomplete pain management.

The aim of the thesis is to provide information about the care of a cancer patient in palliative care to nurses on Hoitonetti. The research question was: How to manage pain of a cancer patient in palliative care?

Eight viable research articles were chosen for the literature review and the results of them made it possible to answer the research question. For different groups of pain management methods were identified: 1. Opioids 2. Non-opioids 3. Adjuvant analgesics and 4. Nonpharmacological methods.

KEYWORDS:

Cancer, pain management, palliative care

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1 INTRODUCTION

Palliative care is an approach that improves the quality of life of patients and their families facing a life-threatening illness. It aims to prevent and relief suffering by early identification, assessment and treatment of pain and other physical, social and spiritual problems. It affirms dying as a normal process and does not intend to postpone or hasten death. Palliative care offers a support system to help patients live as actively as possible until death. (WHO, 1990.)

About 1,479,350 new cancer cases were diagnosed in 2009 according to the American Cancer Society (ACS). Cancer is a disease associated with aging: 77 % of people developing cancer are older than 55 years old. Excluding skin cancer, in the United States breast cancer is the most frequently diagnosed cancer in women and prostate cancer is the most common one in men. (Burke et al 2011, 265.) Pain is one of the most serious concerns to patients, families and the professionals caring for the patients. (Burke et al 2011, 270).

The topic is important as proper symptom control at the end of life ensures that the patient achieves a peaceful and comfortable death (Daud et al. 2005, 205). Inadequate pain relief increases psychological stress, potentially diminishes immunocompetence, worsens proclivities towards pneumonia and thromboembolism, and increases work of breathing and myocardial oxygen requirements. (Burke et al 2011, 133.)

The aim of the research is to increase nurses' knowledge about pain management of cancer patients in palliative care by publishing the thesis on Hoitonetti. The purpose of the thesis is to conduct a systematic literature review.

1 BACKGROUND

2.1 Cancer

Cancer is the leading cause of deaths worldwide, accounting for 7.6 million deaths, which was about 13 % of deaths in 2008. Lung, stomach, colon, liver, and breast cancer cause the most deaths every year. About 30 % of cancer deaths are due to behavioural or dietary risks: tobacco and alcohol use, high body mass index, lack of physical exercise and low fruit and vegetable intake. Tobacco use is the most important risk factor for cancer causing 22 % of global cancer deaths and 71 % of global lung cancer deaths. Cancer causing viral infections such as HBV/HCV and HPV are responsible for up to 20 % of cancer deaths both in low- and middle-income countries. (WHO, 2012.)

Cancer is a group of complex diseases (Burke et al, 2011, 265) and it may develop in any body tissue. The cells that form cancers are different from cells in normal tissues in a number of ways: there are abnormalities in cell division, resistance to programmed cell death, there is a potential for normal cells to invade local tissues metastasize, and cell division that has escaped the control of healthy hemostasis. The development of cancer is associated with accumulation of 'mutations' or defects in several critical genes within the cell. (Watson et al, 2005, 81.)

It seems that the disease results from an interaction of genetic and internal factors with environmental factors, or cancer-causing agents, carcinogens (Burke et al, 2011, 267). The external agents including chemical carcinogens are components of tobacco smoke, arsenic, aflatoxin and asbestos. Also physical carcinogens, like ultraviolet and ionizing radiation and biological carcinogens such as infections from certain parasites, bacteria and viruses cause cancer. (WHO, 2012.) Certain drugs and hormones are also related to the development of this disease. Chemotherapeutic drugs and recreational drugs, for example heroin can cause immune suppression. Hormones, like estrogen, have been linked to endometrial, cervix and breast cancer. (Burke et al, 2011, 268.) As cancer has many manifestations and it can develop at any

site and tissue, the care of a cancer patient can be complex. Cancer is a disruptive experience that affects all aspects of affected patients and their significant others. Nursing interventions address the chronic and holistic nature of the disease. (Burke et al, 2011, 265.)

Especially industrialized countries are affected by cancer. Currently in United Kingdom one in three will be diagnosed with cancer during their lifetime and one in five will die of it. As 60 % of all cancers are diagnosed in people older than 65 years, our fast increasing older population suggests that cancer will become even a more common problem in the future (Watson et al, 2005, 81). People of any ethnicity, age, gender and geographic region can be affected by the disease. Despite research that has given more information about this disease, the overall survival rate is 66 %. The fear caused by even a possible diagnosis of this life-threatening illness is considerable. (Burke et al, 2011, 265.)

2.2 Palliative care

The word 'palliate' originates from the Greek and translates "to cloak", meaning that when caring for a dying person, we intend to "cloak" or prevent the patient from experiencing pain or other distressing symptoms (Connor, 2009, 2). The origins of palliative care research in the modern United Kingdom hospice movement date from when the nurse and doctor Dame Cicely Saunders founded St.Cristopher's hospice in London in 1967. Saunders advocated systematic research and scientific observation as a vital component of the specialty. The interest in the provision of palliative care services and the national agenda for practicing evidence-based care has stimulated collaborative, usually multi-disciplinary, research committees between academic institutions and clinical units. (Watson et al, 2005, 27.) Dame Cicely Saunders also created the idea of 'total pain' (Colby, 2008, 204-205).

The National Hospice and Palliative Care Organization (NHCO) defines palliative care as a treatment that enhances comfort and improves individual's life during the last phase of life without specific therapies being excluded from

consideration. The client's needs must continue to be assessed and all treatment options explored and evaluated considering the client's symptoms and values. The individual's choices and decisions regarding care are paramount and must always be followed. (Connor, 2009, 2.) Palliative care is provided in the client's home, senior living facility, long-term care facility, hospice home or hospital (Burke et al, 2011, 303).

Palliative care reflects a "whole person" philosophy of care implemented across the lifespan and across diverse settings. The patient and family are the unit of care. (Faull, 2005, 6) The caring process is facilitated through a combination of science, openness, presence, team work and mindful attention to detail (Faull, 2005, 2). Dying is seen as a potential for growth and ongoing social contribution in a strong contrast to the idea that dying should be as fast as possible (Parker & Aranda, 2000, 23).

Hospice treatment and palliative care have the same principals of support, but palliative care begins at the diagnosis, continues during cancer treatment and beyond. Hospice care is defined as integrated model of palliative care which can be as aggressive as curative care, with a focus on dignity, comfort, quality of life and patient or family choice. (National Cancer Institute, 2010.) Palliative care extends the principles of hospice care to a broader population that could benefit from this kind of care earlier in the disease course. Palliative care would ideally segue into hospice care as the illness progresses. (Faull, 2006, 16.)

Relief from physical, spiritual and psychosocial problems can be achieved in over 90 % of advanced cancer patients in palliative care. Effective public health strategies, comprising home-based and community care are essential in providing pain relief and palliative care for patients and their families in low-resource settings. Better access to oral morphine is compulsory for the treatment of moderate to severe pain that affects over 80 % of cancer patients in terminal phase. (WHO, 2012.)

2.3 Pain as a symptom

Pain is a universal human experience and it is the most common reason for people to seek health care. Traditionally, it has been viewed as a symptom for which a cause is diagnosed, and pain is eliminated by control or cure of the cause. A patient whose pain cannot be cured or controlled might have an end-stage illness and he or she may live for months in pain. (McCaffery & Beebe, 1989, 1.)

As its best, pain is the body's natural alarm system, warning us of injury. It prompts us to stop a harmful behavior or look for medical attention. When pain persists, it is often a sign that the body's alarm system has broken down which means the pain signals are still active. Over time, this heightened response may suppress immune function, harm nerves, blood vessels and organs, result in excessive inflammation and delay healing. Since the brain remembers pain, it may be imprinted into the nerve tissue and continue to send pain sensations even when there is no stimuli. (The American Pain Foundation, 2010b, 5.)

The most widely accepted definition of pain is that given by International Association for the Study of Pain (IASP): "Pain is an unpleasant sensory and emotional experience associated with potential or actual tissue damage or described in terms of such damage." Pain is always subjective and it means that psychosocial and spiritual concerns can modify the sensation of it. (Woodruff, 2004, 54.) Not only must information from pain control be disseminated, but also pain control must be considered a priority. Historically, it has not been like that (McCaffery & Beebe, 1989, 1).

A person's response to pain is shaped by age, emotional state, sociocultural factors, past experiences with pain, the patient's knowledge of pain and the meaning of pain itself (Burke et al, 2011, 153). The term 'total pain' refers to the etiological components of pain in addition to the noxious physical stimulus, that affect the patient's experience of pain: fear, social isolation, spiritual crisis, dependency, helplessness, anger and frustration (Radwany & Von Gruening, 2012, 177).

Untreated pain can have serious physiological, psychological and social consequences. It can limit the ability to sleep, perform every day tasks and exercise. It also reduces mobility and appetite, aggravates other health problems and makes it harder to recover from an injury or fight infection due to depressed immune system. From the psychological point of view, it can lead to depression and anxiety which often reinforce the sensation of pain and place added strain on relationships. Untreated pain can also affect independence and self-esteem. (American Pain Foundation, 2010a, 7.)

2.4 Types of pain

There are many reasons for cancer pain. According to a research by Sloan-Kettering Cancer Center, 78 % of cancer-related pain is caused by the tumour, 19 % is related to the treatment and 3 % is not caused by cancer. Patients with spread cancer can have many kinds of pain caused by different mechanisms at the same time. It has to be considered that long-term pain caused by surgical, chemotherapy or sytostate treatment can occur in patients who have already healed from cancer. (Kalso & Vainio, 1993, 197.)

Pain is usually classified in two major categories – acute and chronic (long-term). A classification system of pains is helpful in the assessment of pain as it provides a framework for understanding the major differences in patients' pain experiences and for identifying differences in approaches to pain relief recommended by pain specialists. (McCaffery & Beebe, 1989, 19.) With chronic pain, pain signals may remain active in the nervous system for weeks, months or even years. Unlike acute pain, chronic pain has no value or benefit but it is a disease on its own right and it can be especially challenging to treat. (The American Pain Foundation, 2010b, 6.) Chronic pain is not only emotionally and physically debilitating for the patient but it also places a tremendous burden on caregivers and family (The American Pain Foundation, 2010b, 4).

Acute pain is usually temporary and localized, and has a sudden onset. It usually lasts for less than 6 months and has an identified source. Pain can

initiate the flight-or-fight response, triggering tachycardia, increased blood pressure, rapid and shallow respirations, dilated pupils, pallor and sweating. (Burke et al, 2011, 151.) In cancer patients acute pain is caused by fractures, surgery, or painful procedures. Psychological factors will further complicate the situation if acute episode is a manifestation of progressive disease. (Woodruff, 2004, 76.)

Chronic pain due to cancer requires a different approach to that for other chronic non-malignant pain. Assessment of the type of pain will help in decision what kind of therapies or which analgesics are appropriate. (Woodruff, 2004, 76.) Chronic pain is prolonged, usually 6 months or longer but there is disagreement about how long pain should exist before it can be called chronic. Several distinctly different chronic pain exist, but there is disagreement on how they should be defined or classified. (McCaffery & Beebe, 1989, 19.)

Pain may be classified according to its source (Adams et al, 2011, 219). The pain related to cancer is almost almost nociceptive which means tissue irritation caused by the tumour (Kalso & Vainio, 1993, 198). Nociceptive pain may be described as somatic or visceral pain. Somatic pain, sometimes also called bone pain, is sharp and and visceral pain is generalized, throbbing, dull and aching. (Adams & Holland, 2011, 219.) Nociceptive pain is usually of an aching quality and is easily localized. Visceral pain arises from the thoracic and abdominal viscera and is not easily localized. It is often described as 'pressure' and 'deep'. Visceral pain sometimes occurs in a part that is distant to the site of the noxious stimulation, for example the pain in certain heart diseases radiates into the arms and neck. Visceral pain often occurs with other symptoms such as vomiting and nausea. (Bennett et al, 2005, 120-121.)

Neuropathic pain, also called nerve pain, is caused by damage or dysfunction of peripheral or central nerves. Peripheral pain in cancer is associated with nerve compression from tumour. Characteristics of neuropathic pain include burning, numbness, shooting or tingling sensations in the affected area. (Burke, 2011, 153.)

Breakthrough pain is a transitory exacerbation of pain that occurs against the background of otherwise stable pain in a patient who is receiving chronic opioid therapy (Käypä hoito recommendations, 2008). Breakthrough pain starts suddenly and is usually unpredictable. It lasts for an average 30 minutes and is often described as shooting, sharp and radiating. These sudden, short-lived episodes of moderate to severe pain “break through” what would otherwise be background pain. Episodes of breakthrough pain can be triggered by a specific movement, like walking, dressing, changing position or even sneezing or coughing. Research suggests that up to two thirds of people suffering from cancer-related pain also experience episodes of breakthrough pain, often many times a day. (American Pain Foundation, 2010a, 2.)

3 ASSESSMENT OF PAIN

Inadequate pain assessment represents a highly prevalent barrier to effective pain management (Lesage & Portenoy, 1999). The nurse's unique role in the care of people with pain can be distinguished from other members of the health care team because she or he spends more time with people with pain than any other health team member. The nurse's role in the care of people with pain most often includes carrying out pain relief methods, identifying the need for change or additional methods, obtaining them and assessing the impact on the patient. (McCaffery & Beebe, 1989, 4.) Timely access to quality of pain management is the best way to minimize suffering and disability often associated with undertreated pain and to avoid additional problems (The American Pain Foundation, 2010b, 7).

When assessing pain, patients should be asked to describe their pain, its quality, intensity, location, temporal pattern and alleviating and aggravating factors (Fink & Gates, 2005, 102). The management of pain in cancer should be undertaken in a systematic manner, based on some principles. First, each pain should be assessed separately, and it should be ascertained that they are related to the cancer. (Bennett et al 2005, 126.) The nurse gathers information from the patient which allows him or her to understand the patient's experience of pain and its effect on his life. The information guides the nurse in planning and evaluation strategies for the pain care. The assessment is ongoing and not a one-time process. (McCaffery & Beebe, 1989, 20.) Much information about the pain can be gained by observing the patient and his or her language, body language, and the emotions expressed (Woodruff, 2004, 69).

Patients should be asked if they have pain on admission to a hospital or another care agency. When discomfort or pain is reported, a comprehensive pain assessment should be performed at regular intervals, after any modification in the pain management plan or whenever there is a change in pain. Pain assessment should be individualized and documented so that all multidisciplinary team members will understand the pain problem. Information

about the patient's pain can be obtained from multiple sources: observations, interviews with the patient and their significant others, feedback from the other health care staff and reviews of medical data. (Fink & Gates, 2005, 99.) Routine documentation of pain scores should alert clinicians and lead to both improved treatment as well as better institutional policies for the management of pain. (Woodruff, 2004, 73.)

Initial pain assessment tool is one of the pain measurement tools. There are ten sections to this tool which provide initial information from which a plan of care can be developed. All information is obtained directly from the patient whenever it is possible; nobody else really knows the location, intensity and other characteristics of the pain experienced. If anyone else than the patient, for example the significant other provides information, it should be considered. (McCaffery & Beebe, 1989, 20.)

The most commonly used pain intensity scales are the visual analogue scale, (VAS), the numeric rating scale (NRS), the verbal descriptor scale (VDS), the Wong-Baker FACES pain scale, the Faces Pain Scale (FPS) and Faces Pain Scale-Revised (FPS-R) and the pain thermometer. The scales have been proved to be very effective, reproducible in measuring pain and other symptoms, and they can be universally implemented and regularly used in many care settings. What is still unknown is how useful these tools are in palliative care setting. (Fink & Gates, 2005, 106.)

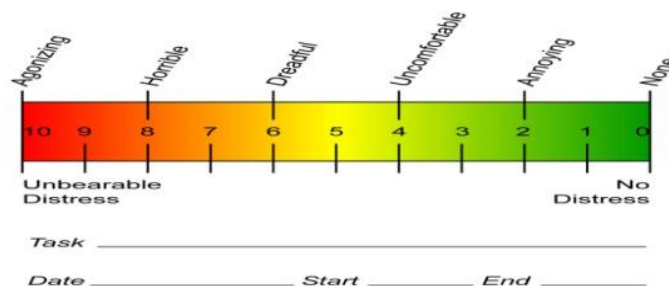
The McGill Pain Questionnaire (MPQ) is a self-administered questionnaire that provides information about the sensory, affective and evaluative dimensions of pain. Patients choose adjectives to describe their pain which presumes the necessary linguistic skills. Intensity and location of pain are assessed, but not the effect or function. MPQ has been used in oncology and palliative care but it is best reserved for research projects and can possibly be too demanding for patients with advanced disease. (Woodruff, 2004, 74.)

The Brief Pain Inventory (BPI) is a multifactorial instrument that addressed pain etiology, history, location, intensity, and interference with activities. Patients are

asked to rate the severity of their pain at its worst, least, average and its present. Using an NRS (0-10) patients are asked for ratings of how much the pain interferes with walking ability, general activity, mood, work, enjoyment of life, sleep and relationships. The BPI also asks patients to show the location of their pain on a drawing and asks about the duration and cause of pain. (Fink & Gates, 2006, 110.)

The Memorial Pain Assessment Card (MPAC) is a simple valid tool consisting of VAS, for pain relief and pain intensity, and VDS to describe the pain. The MPAC can be completed by patients in 20 seconds or less and can distinguish between pain relief, pain intensity, and psychological distress. (Fink & Gates, 2006, 110.)

Body charts can be used to evaluate the nature and site of pain. They may emphasize that the patient has pain at several sites, possibly of different etiologies and thus different treatment methods are required (Bennett et al, 2004, 114). Health care professionals also use 'word anchors' on pain intensity scales. They are used to discriminate pain intensity and the purpose of them is that they provide a common endpoint. Some of the common end-point word anchors that have been used are for example: "worst possible pain", "most severe pain imaginable" and "worst pain you have ever had". Inconsistent or different word anchors may yield different reports of pain so it is important to come to some consensus about the consistent use of word anchors. (Fink & Gates, 2006, 106.)



PICTURE 1. The Visual Analogue Scale (VAS). The patient marks the corresponding intensity of his pain on the line (Bennett et al 2005, 123).

4 TREATMENT OF PAIN

4.1 Pharmacological treatment

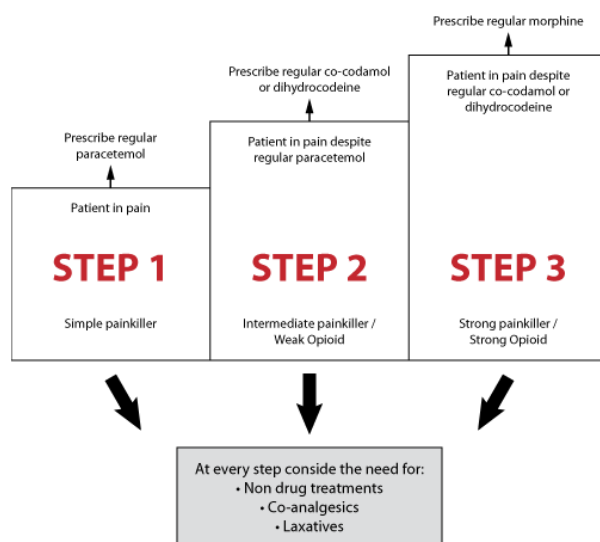
The treatment of cancer-related pain is today best understood in a historical context. Until the 1980's, cancer pain was an afterthought in the community of oncology. The situation changed after a great effort, in part from recognition in the 1980's and 1990's that management of cancer should be seen as a best practice in oncology and under the umbrella of palliative care. (American pain foundation, 2010a, 5.)

Successful pain management aims to lessen pain, enhance quality of life and improve functioning (The American Pain Foundation, 2010b, 9). The nurse is constantly assessing and evaluating the effectiveness of the pain treatment. Her duty is to choose the appropriate analgesic, determining whether to give it and evaluating its effectiveness. If needed, she has to obtain a change in analgesic prescriptions. She has to be alert to the possibility of certain side effects of the analgesics and report promptly and accurately the doctor if a change is needed. (McCaffery & Beebe, 1989, 47.)

Many health care professionals do not know enough about pain management or assessment, have concerns about patient addiction and side effects of medications or worry about prescribing controlled substances in an environment of local scrutiny and tightening federal. People who have pain may be reluctant to take drugs, they believe they might get addicted or that the drugs cause side effects that could have a negative impact on them. (American Pain Foundation, 2010a, 2.)

The WHO analgesic ladder is nowadays used in the treatment of cancer pain. It is a stepwise approach using a limited number of drugs. The patient's pain determines the analgesic to be used: mild pain is treated with step one analgesic, and mild to moderate pain or pain that has not responded to step one analgesic is treated with step 2 analgesic. Moderate to severe pain that has not responded to step 2 analgesic is treated with that of step 3. (Bennett et al, 2005, 129.) The principle is that following good pain assessment and with thorough

knowledge of a small number of analgesics, this simple approach should produce effective and safe pain relief in majority of the patients (Bennett et al, 2005, 128).



PICTURE 2. The WHO analgesic ladder. The ladder design means the patient's pain determines the initial and subsequent analgesic to be used in the treatment of pain (Bennett et al 2005, 129).

There are three major classes of pain medications: opioids, non-opioids and adjuvant analgesics (The American Pain Foundation, 2010b, 9). Opioids come from the opium poppy or are chemically related to drugs from opium (The British Pain Society, 2010, 5). More than 20 opioids are available as medications, which can be classified by their mechanisms of action, similarities in their chemical structures and by their effectiveness (Adams & Hollands, 2011, 221).

Opioids are effective in cancer pain treatment and patients should be started on them when they have moderate to severe pain (Käypä hoito recommendations, 2008). Opioids should be chosen carefully, considering the patient's age, level of pain, physiologic status, and specific wishes (Wrede-Seaman, 2001, 100). They can be classified as 'weak' and 'strong' opioids. Weak opioids are used to treat mild to moderate pain and strong ones moderate to severe pain. (International Association for Hospice and Palliative Care, 2008.) 'Weak' opioids are codeine, dihydrocodeine and tramadol (The British Pain Society, 2010, 5)

and they are sometimes combined with paracetamol (The British Pain Society, 2010, 6). Strong opioids are morphine, oxycodone, methadone, fentanyl, diamorphine (medicinal heroine) and buprenorphine (The British Pain Society, 2010, 6). Neuropathic pain may be improved but not often completely relieved by opioid or non-opioid analgesics and adjuvant analgesic drugs are often needed (Bennett et al, 2005, 121).

The effective treatment of cancer pain may require the use of other classes of analgesic drugs. The non-opioid analgesics include the non-steroidal anti-inflammatory drugs (NSAID's) and paracetamol (acetaminophen in Usa). (Lesage & Portenoy, 1999.) NSAID's are a chemically unrelated drugs which have anti-inflammatory, analgesic and antipyretic properties through inhibition of the enzyme cyclo-oxygenase (Bennett et al, 2005, 130). NSAID's can be used used in conjunction with analgesics from all the steps of the WHO analgesic ladder. They can be used for example for pain due to bone metastases which may responded poorly to opioids and for musculoskeletal pain. (Bennett et al, 2005, 131.) Both somatic and visceral pain usually respond well to opioid or non-opioid analgesics (Bennett et al, 2005, 120-121). If one NSAID is not effective enough or causes adverse effects, a different one from another chemical class can help (Woodruff, 2004, 78).

Adjuvant analgesics may contribute significantly to pain relief when used either alone or in combination with other analgesics. They are particular use for opioid-insensitive pain, especially neuropathic pain. Adjuvant analgesics include for example corticosteroids, oral local anesthetic agents, bisphosphonates, psychostimulants, and muscle relaxants like benzodiazepins. (International Association for Hospice & Palliative Care, 2008.)

4.2 Nonpharmacological treatment

Many patients in the advanced stages of cancer seek treatment outside conventional medicine in hopes of cure and management of the debilitating physical symptoms. No controlled studies have been conducted for these interventions, though. (Lesage & Portenoy, 1999.) It is estimated that about 30 % to 50 % of patients with cancer may have used some sort of complementary therapies which are increasingly accepted as adjuncts to medical care. Common complementary therapies for cancer are botanical agents, dietary regimens, nutritional supplements, mind-body modalities, miscellaneous therapies and spiritual approaches. Nurses need to understand common complementary therapies because they can affect the patient's response to prescribed treatments. It is important that nurses give truthful and non-judgmental answers to questions about complementary therapies from patients with cancer. A nurse should encourage patients to report any use of complementary therapies to their care provider to prevent harmful interactions of these therapies with their medical treatment. (Burke et al, 2011, 281.) According to the British Pain Society (2010), there is weak evidence base for the effectiveness of complementary therapies in terms of pain control but they may improve well-being.

Some Complementary and Alternative Therapies in Palliative Care (CAM) can improve quality of life, such as management of pain, nausea and vomiting, dyspnea, depression and peripheral neuropathy. CAM is a group of diverse medical and health care systems, therapies, practices, and products that are not presently considered as conventional medicine. Some of the physical therapies belonging to CAM are for example acupuncture, aromatherapy and massage while hypnosis, focused breathing and progressive muscle relaxation belong to the cognitive methods. (Berenson, 2006, 493.)

One of the cognitive-behavioural methods used in the treatment of cancer-related pain is called guided imagery, in which the patient is using mental imagery, usually of positive or neutral nature and is he or she is led through a specific scene. The imagery may be auditory, visual, kinesthetic or a

combination of these all. Guided imagery is frequently used in combination with hypnosis or relaxation. (Thomas et al, 2000, 161.) Imagery can be used as a method of pain control and might create sensory images that decrease the intensity of pain or that become a more acceptable and non-painful substitute for pain. The Images can be short like those used in normal conversation or the previously mentioned guided imagery, or long images systematically developed for the patient. (McCaffery & Beebe, 1989, 212.) There is also autogenic training is a cognitive-behavioural method in which the patient focuses on internal bodily states and trains to transform sensations through imagery. He or she can for example imagine a scary sensation of pain to be a soothing sensation such as warmth (Thomas et al, 2000, 161).

Another cognitive behavioural strategy is distraction. It means diverting attention away from the painful sensation to a neutral or pleasant stimulus. (Thomas et al, 2000, 161.) The stimuli can be visual, auditory, and tactilekinesthetic, which means seeing, hearing, moving or touching. The stimuli might be external like when listening to music from headset, or internal, when the patients sings mentally but silently. Distraction gives the patient a sense of control over the pain, improves the patient's mood when he is focusing on pleasant things and makes pain more bearable increasing the tolerance of it. Quality of sensation of pain becomes more acceptable and it makes the pain feel less intensive. (McCaffery & Beebe, 1989, 172.)

Therapeutic touch (TT) is a form of energy healing that is popular in the American nursing community. The method is sometimes called as a scientific version of "laying on of hands", a method practised by faith healers. According to therapeutic touch, people have an "energy field" which can be balanced or replenished by a healer without a physical contact. There is more spirituality than science to this method: it uses beliefs and principles of common healing traditions but unusual to the science culture nowadays. According to its official organization therapeutic touch is an intentionally directed process of energy exchange during which the practitioner uses his hands as a focus to

facilitate the healing process. However there is no meaningful evidence that is effective. (Medical Center of McKinney, 2012.)

Also relaxation can be used as a pain management method. Relaxation could be defined as a state of freedom of both skeletal muscle tension and anxiety, a calming of the mind and the muscles. Physiologically relaxation is an opposite response to fight-or-flight response. The relaxation techniques might involve meditation, yoga, religion or music. (McCaffery & Beebe, 1989, 188.) For the person with pain, possible benefits of relaxation are related to the interaction between pain, anxiety and muscle tension. The usual responses to pain, especially when it cannot be avoided, are anxiety-like feelings. The pain, anxiety and muscle tension usually intensify each other and the situation gets worse. Relaxation attempts to interrupt this cycle with skeletal muscle relaxation. (McCaffery & Beebe, 1989, 189-190.) In progressive muscle relaxation the patient actively tenses and relaxes different muscle groups, one by one, to differentiate the muscle in its tense (Thomas et al, 2000, 161).

Hypnosis aims to achieve an intense state of relaxation or trance and to receive suggestions to alter behavior, sensations, thoughts and feelings (Thomas et al, 2000, 161). In Coping Strategies specific positive affirmations “I am strong enough to do this” are stated to assure oneself about managing with the pain. In problem-solving labeling of a problem and generation of solutions utilizing a cost-benefit analysis (Thomas et al, 2000, 161).

Complementary therapies are often used because they are considered safe and harmless. Some treatments can be associated with risks though: hypnosis can have negative physiological and psychological effects on the patient and self-medication can be risky due to potential interaction with conventional cancer medications. (The British Pain Society 2010, 75.)

5 THE PURPOSE, AIM AND THE RESEARCH QUESTION

The aim of the thesis is to increase nurses' knowledge about pain management of a cancer patient in palliative care because according to many studies nurses do not know enough about it. The thesis will be published on Hoitonetti so that nurses can gain more knowledge.

The purpose is to conduct a systematic literature review using eight research articles. The research question is: "How to manage pain of a cancer patient in palliative care?"

6 SYSTEMATIC LITERATURE REVIEW

6.1 Research method

This research uses systematic literature review to find the answer to the research question. Systematic reviews are a mode of literature review (Moule & Goodman, 2009, 261) which are referred to as 'original empirical research' as they review primary data which can be qualitative or quantitative. Systematic reviews which have detailed research methodology, should be regarded as a robust form of evidence when they are considered as relevant to a literature review question. This is because they aim to summarise the body of knowledge on a particular topic, enabling the reader to see the whole picture rather than just one piece of research. Thus, systematic reviews are very useful summaries of existing evidence. (Aveyard, 2010, 47.) A systematic review answers a specific research question using a rigorous process of search, selection, appraisal, synthesis and summarization of findings of primary research which is analogous to procedures which would be used in randomized controlled trials. Data from systematic reviews can provide evidence for the development of different clinical guidelines. (Moule & Goodman, 2009, 261.)

Literature reviews are becoming more important in health and social care. The growing importance of evidence-based practice (EBC) within health and social care today has led to literature reviews to become important to current practice. The value of one piece of research is greater if it is seen in the context of other literature on the same topic. This is why literature review is regarded as becoming more important in social and health care and the method for undertaking a literature review has become an important research methodology itself. (Aveyard, 2010, 2.)

6.2. The review process

The process of looking for relevant research articles was more time-consuming and difficult than expected, because few articles had direct links to full text versions that were free and compatible. The search of relevant articles took place from September 2011 to February 2012. The guidelines were to use academic databases to attain proper and reliable information. Two databases were used: Cinahl and Medline, which were considered the best due to easy usability. The results were further limited by the inclusion and exclusion criteria. The searches were made in English and the results were further limited by the inclusion and exclusion criteria:

Inclusion criteria:

1. Written in English
2. Qualitative and quantitative research
3. Adult patients
4. Pain management in cancer/terminal cancer
5. Availability of a full text form

Exclusion criteria:

1. Pediatric patients
2. Patients dying from other causes than cancer

In order to find research articles that would fulfill the inclusion and exclusion criteria, and that would give the answer to the research question, specific search terms were used. The terms "palliative care" and "cancer" gave thousands of hits. All the search terms used were palliative care, palliat* care, cancer, cance*, pain management, pain* management*, dyi* patient and

terminal patient. The articles were narrowed to the ones that had a full text form available.

During the elimination dozens of abstracts were overviewed. Articles concerning other diseases than cancer and also the ones concerning pediatric patients were excluded. Articles of which only an abstract was available did not give a clear enough picture of the research so they were excluded. Some abstracts were not even read if the title did not sound suitable to the topic. Articles that were not for free were too expensive to be purchased so they were excluded. From the total of 241 articles 8 were chosen. The rest were excluded for a variety of reasons: some of them were not suitable to the topic and the others just bypassed the topic and the main focus was somewhere else.

6.3 Data analysis

Qualitative content analysis was used to analyze the contents of the articles. Qualitative data analysis occurs concurrently with data collection rather than sequentially as in quantitative research. Thus, the researcher is attempting to simultaneously gather the data, to manage the growing collected data, and to interpret the meaning of it. Qualitative analysis technique uses words rather than numbers as the basis of the analysis. Anyway, the same careful skills in analytical reasoning are needed by qualitative researchers as in quantitative analysis. (Burns & Groves 2001, 591.)

The following table was drawn to show the year of publication of each of the articles.

Year of publication	1990	2001	2005	2007	2008	2010	2012
Number of researches	1	2	1	1	1	1	1

TABLE 1. Publication years of the studies

According to the inclusion criteria all the research articles should be precisely on cancer, but two articles failed to fill this criteria. These two articles are about terminal care in general, not exactly on that of cancer. Nevertheless, these articles were chosen, because they provided valuable information. Else the articles fit the criteria: they are written in English and are about pain management in terminal cancer.

7 RESULTS

7.1 Characteristics of included studies

This section is for presenting the main results for the research question: how to manage pain of a cancer patient in palliative care? There is a long list of treatment methods, but some were mentioned more often than others. Four major categories were classified out of the most often mentioned methods:

1.Opioids

2.Non-opioids

3.Adjuvant analgesics

4. Non-pharmacological methods

There were many different kinds of research articles included. Four of the researches were reviews: Wrede-Seaman (2001), Joon-Ha et al (2005), Daud (2007) and Radwany & Von Grueningen (2012). There was also a one systematic review conducted by Lorenz et al. There were also a retrospective study (Coyle et al, 1990), an observational study (Ellershaw et al 2001) and a cross-sectional survey (Barnett et al, 2010). In the research conducted by Coyle et al (1990) the patient's records used for the study were reviewed retrospectively but other data were collected prospectively. Joon-Ha et al (2005) used also the clinical experience of the researches in addition to the literature review in their research. Barnett et al (2010) had a literature review in their research in addition to the cross-sectional descriptive survey which included Likert-type scales, multiple choice and open-ended questions and yes and no items.

The following table on the next page was drawn to show the authors, names, the main findings and the other important information of the eight articles.

AUTHOR	TITLE	METHOD	SAMPLE	TARGET GROUP	FINDINGS	29
Coyle et al 1990	Character of Terminal illness in the Advanced Cancer Patient: Pain and Other Symptoms During the Last four weeks of Life	A retrospective study	n=90	Patients with terminal cancer in Supportive Care Program	Palliative care programs offer the flexibility needed for managing the multiple symptoms of this group of patients.	
Joon-Ha et al 2005	Medical and surgical palliative care of patients with urological malignancies	A literature review & the authors' own clinical experience	-	Patients with urological cancers in palliative care	Opioids, non-opioids, adjuvant analgesics, radiotherapy and surgery can be used in the treatment of pain in urological cancers.	
Barnett et al 2010	Nurse's Knowledge, Attitudes, and Practice Patterns regarding Titration of Opioid Infusions at the End of life	A cross-sectional study & literature review	n=181	Acute care nurses caring for dying patients	Nurses lack knowledge in pain management of dying patients due to poor opioid titration skills	
Ellershaw et al 2001	Care of the dying: Setting Standards for Symptom Control in the last 48 hours of life.	An observational study	n=168	Cancer patients on ICP in a hospice	The ICP for dying patient is beneficial in monitoring and controlling the pain of dying patients.	
Daud 2007	Drug management of terminal symptoms in advanced cancer patients	A literature review	-	Advanced cancer patients	Proper symptom control, new drugs, routes and combined treatments are needed to provide a comfortable death.	
Lorenz et al 2008	Evidence for Improving Palliative Care at the end of life: A Systematic Review	A aystematic literature review	-	Patients with a terminal illness in palliative care	Strong evidence supports treating cancer pain with opioids, NSAID's, radionuclides, and radiotherapy.	
Radwany & VonGrueningen 2012	Palliative and End-Of-Life Care for Patients with Ovarian Cancer	A literature review	-	Patients dying of ovarian cancer	Opioids, non-opioids and adjuvant analgesics are effective in pain treatment in ovarian cancer	
Wrede-Seaman 2001	Treatment options to manage pain at the end of life	A literature review	-	Patients at the end of life	With social support, hospice care and proper analgesic regimens (e.g opioids, nonopioids and non-pharmacological methods) a good death is achievable.	

TABLE 2. The main findings of the research articles

The eight articles were speaking about a number of different ways of pain management. The most common pain management method mentioned was opioids, occurring in seven out of eight articles. They are mentioned in the articles written by Barnett (2010), Coyle et al (1990), Wrede-Seaman (2001), Daud (2007), Lorenz et al (2008), Barnett et al (2010) and Radwany & Von Grueningen (2012).

Non-opioids were also spoken about in several articles. Wrede-Seaman (2001), Joon-Ha et al (2005), Lorenz et al (2008) and Radwany & Von Grueningen (2012) all mentioned using them to treat cancer-related pain. Adjuvant analgesics are spoken about in four articles as well: Wrede-Seaman (2001), Joon-Ha et al (2005), Lorenz et al (2008) and Radwany & Von Grueningen (2012).

Different adjuvant analgesics were mentioned in four articles: Wrede-Seaman (2001), Lorenz (2008), Radwany & Von Grueningen (2012), Joon-Ha et al (2005). The most common adjuvant analgesic mentioned was bisphosphonates.

A variety of nonpharmacological pain management methods were discussed too. Five out of eight research articles talk about some kind of nonpharmacological pain methods. The most common non-pharmacological methods mentioned were radiotherapy (Joon-Ha et al, Lorenz et al & Wrede-Seaman et al) and massage (Lorenz et al, Radwany & Von Grueningen, Wrede-Seaman). Also surgery, epidural, intrathecal and cryoablative therapies were mentioned as well as acupuncture, aromatherapy and therapeutic touch.

Ellershaw (2001) mentions the use of Integrated Care Pathways (ICP) for dying patients as a method that facilitates the provision and implementation of symptom control guidelines especially in prescribing for pain, agitation and respiratory tract secretions. This way it is easier to control the pain in the dying patients. Also Daud (2007) talks about how the development of care pathways would be helpful in obtaining better quality symptom management for dying patients.

Three studies mention the undertreatment of pain in patients at the end of life. According to Coluzzi et al (See:Wrede-Seaman, 2011, 89-90) the problem of insufficient pain management stems from inappropriate choice of analgesics, ignorance of how to use adjuvants, selection of inadequate dosage or ignorance of available protocols. Other reasons are inability to acknowledge that a patient is declining and nearing death, lack of skills and knowledge in treating advanced pain and misconceptions about the correct, effective use of opioid analgesia. Dudgeon et al (See:Daud, 2007, 204) claim that despite improvements in pain management strategies and availability of drugs, in almost 10 % of patients at the end of life complete pain relief is not achieved. Barnett et al (2010) conducted a study on nurses' knowledge, attitudes and practice patterns regarding titration of opioid infusions for patients and the end of life. It was discovered that nurses lack in knowledge about opioid titration which can alter the effectiveness of pain management at the end of life.

The Prisma flow chart on the next page was drawn to show the phases of the literature search.

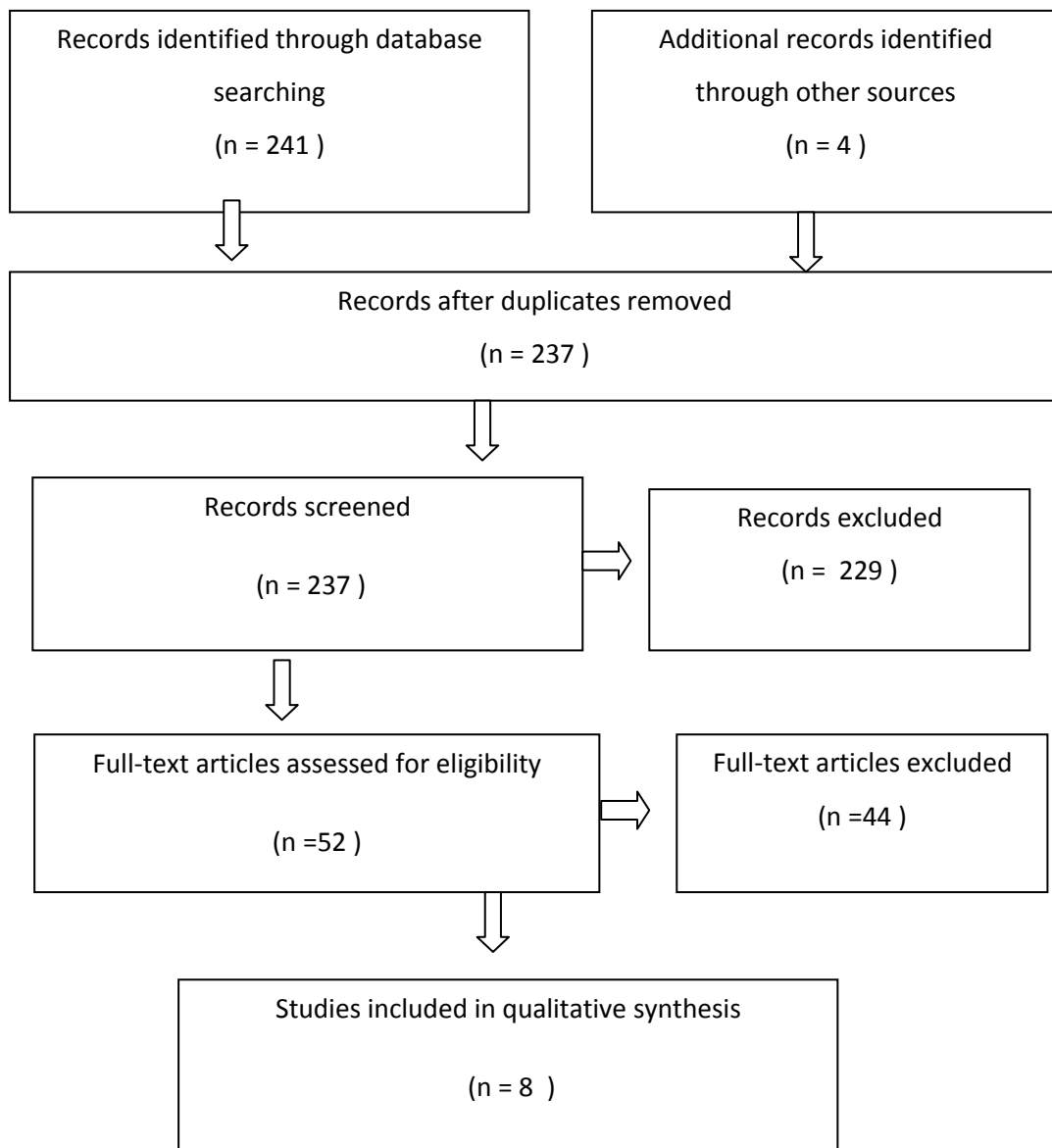


FIGURE 1. Prisma Flow Chart

7.2 Content analysis

Content analysis is a method that may be used both qualitative and quantitative data (Elo & Kyngäs 2008, 109). According to Krippendorf (1980) content analysis is a research method for making replicable and valid inferences from data to their context, with the purpose of providing knowledge, representation of facts, new insights, and a practical guide to action (Elo & Kyngäs, 2008, 108). Content analysis is designed to classify the words in the text into a few categories chosen due to their theoretical importance. The technique provides a systematic means of measuring frequency, order, intensity of occurrence of words, sentences or phrases. The researcher first selects a specific unit of analysis, which may be individual words, themes or word combinations. The unit of analysis is considered a symbolic entity and it usually is an indicator of an abstract content. (Burns & Grove 2001, 605.)

In this content analysis, different phrases related to treatment of cancer-related pain in palliative care patients were retrieved from the eight research articles used in the systematic literature review. Different themes, categories and subcategories were formed. The table on the next page shows the phrases in their categories and subcategories.

THEME	PAIN MANAGEMENT OF CANCER			
CATEGORIES	OPIOIDS	NON-OPIOIDS	ADJUVANT ANALGESICS	NON-PHARMACOLOGICAL
SUBCATEGORIES	Morphine, codeine, oxycodone, fentanyl, tramadol, methadone	Non-steroidals, aspirin, acetaminophen	Bisphosphonates, corticosteroids, glucocorticoids, antidepressants, radiopharmaceuticals	Radiotherapy, massage, clinical pathways, hypnosis, distraction therapy acupuncture, aromatherapy, therapeutic touch, meditation, pet therapy, spiritual supports, humor therapy
CODES	<p>Opioids effective in the treatment of pain, there's no ceiling effect.</p> <p>Nurses need to be better educated about titration of opioids for dying patients.</p> <p>Morphine is a good drug of choice : multiple preparations and routes of administration.</p>	<p>NSAID'S are indicated for mild to moderate pain.</p> <p>Progression from non-opioids to opioids becomes necessary depending upon pain severity and disease progression.</p>	<p>Bisphosphonates decrease pain in prostate cancer by inhibiting osteoclast activity.</p> <p>Glucocorticoids can decrease bone pain in cancer.</p> <p>Strong evidence supports the use of radionuclides in the treatment of cancer pain</p>	<p>Radiation therapy can decrease pain in bladder cancer and bone tumors in prostate cancer.</p> <p>Relaxation and distraction, the identification of physical techniques or orthotics techniques can be used in activity-related pain</p> <p>Care pathways for the dying would help in obtaining better care</p> <p>Complementary</p>

				therapies like massage could offer an extra step to the analgesic ladder
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TABLE 3. Content analysis table

Four classes of pain management methods were formed based on the results of the eight research articles.

Opioids

Strong evidence supports treating cancer pain with opioids (Lorenz et al 2008, 147). Effective pain management in ovarian cancer begins with thorough evaluation of the location, character, severity, time course, etiology and mechanism of the pain. Regarding strong opioid analgesics, morphine remains the first drug of choice: multiple preparations and routes of administration are available, no opiate has been proven superior and opiates are available in many generic forms. The oral route of treatment is preferred. To maintain freedom from pain, drugs should be given on a schedule and on demand. (Radwany & Von Grueningen, 2012, 176-177.)

Oral opioids provide effective analgesia for cancer patients. Different formulations play an important role as availability of liquids and soluble tablets, as well as personal tastes, can affect the ease of administration and compliance. Traditionally, oral morphine has been most commonly used. Long-acting opioids are suitable for older patients once steady pain levels are achieved. Opioids that take a long time to reach a steady state are safe for

older people with steady pain levels if the patient is carefully monitored. Once achieved, controlled-release formulations of morphine, dimorphine, oxycodone and fentanyl can be used (Wrede-Seaman et al 2001, 97.)

A benefit of opioids is that they have no ceiling effect; thus their use is limited primarily by side effects and patient response. A variety of opioids are available in different durations of actions and formulations and strengths. A choice of opioids can be then utilized if one proves ineffective or patients cannot tolerate the side effects. (Wrede-Seaman et al 2001, 97.)

Despite improvements in pain management strategies and drug availability, in almost 10 % of patients complete relief is not achieved. It has been suggested that the N-methyl-D-aspartate receptor and opioid tolerance may have relevant roles to play in this poor response to opioid. (Dudgeon et al, 2007. See: Daud 2007, 204.) The management of symptoms using opioids varies among nurses. To improve patient outcomes, a better understanding is needed of the way nurses titrate opioid infuses and the criteria involved in the decisions to adjust opioid doses. (Barnett et al 2010, 81.)

Opioids are the mainstay for moderate to severe pain in the treatment of bone pain related to prostate cancer. They can be used in combination with NSAID's or acetaminophen. Short-acting morphine is often used initially to treat bone pain (Joon-Ha 2005, 1178).

Non-opioids

Strong evidence supports treating cancer pain with non-steroidals (Lorenz et al 2008, 147). Non-steroidal anti-inflammatory drugs and acetaminophen are used for mild or moderate pain and are usually the first analgesics considered by doctors physicians for pain relief. They are considered less dangerous than more potent analgesics. Acetaminophen is associated with fewer adverse effects than are NSAID's and it remains the drug of choice for relieving mild to moderate musculoskeletal pain. (Wrede-Seaman, 2001, 97). When treating ovarian cancer, progression from non-opioids (aspirin and acetaminophen) to

opioids becomes necessary depending on pain severity and disease progression. (Radwany & Von Grueningen 2012, 177).

Treatment of bone pain related to prostate cancer should begin with oral acetaminophen or NSAID's (Joon-Ha et al 2005, 1178). NSAID's or acetaminophen can be used in combination with opioids to treat moderate to severe pain in bone pain related to prostate cancer (Joon-Ha et al 2005, 1178).

Adjuvant analgesics

When treating the pain related to ovarian cancer, adjuvant analgesics should be considered for any pain that is amenable to their use, and/or is uncontrolled. Adjuvant analgesics include antidepressants, corticosteroids, α_2 -adrenergic agonists, and neuroleptics whereas others are specific for neuropathic pain: local anesthetics, anticonvulsants and N-methyl-D-aspartate receptor agonists. Adjuvants used to treat bone pain are calcitonin, bisphosphonates and radiopharmaceuticals. Muscle relaxants are used to treat musculoskeletal pain related to ovarian cancer and octerotide and anticholinergics are used in pain related to bowel obstruction in ovarian cancer. (Radwany & Von Grueningen 2012, 177.)

Adjuvant analgesics used in chemotherapy induced peripheral neuropathy (CIPN) include corticosteroids, anticonvulsant agents, tricyclic antidepressants, local anesthetics, and anticancer therapies. Corticosteroids have efficacy in reducing neuropathic pain, but their anticholinergic and histaminergic side effects may limit use. Local anesthetics have demonstrated efficacy for several neuropathic syndromes. Gabapentine combined with nortriptyline have also been proven effective. (Radwany & Von Grueningen, 2012, 180.). Neuropathy is a cancer-related symptom which often coexists with nociceptive pain. The first-line treatment agents include tricyclic and serotonin-norepinephrine reuptake inhibitors, anti-depressants (nortriptyline and venlafaxine, respectively), calcium channel $\alpha_2\delta$ ligands (gabapentin and pregabalin) and topical lidocaine. Third-line agents include other anticonvulsants (such as valproate and

caramazepine), mexiletene, antidepressants including bupropion and citalopram, N-methyl-D-aspartate receptor antagonists such as dextromethorphan, and topical capsaicin. (Radwany & Von Grueningen, 2012, 180.) Strong evidence supports the use of radionuclides in the treatment of cancer pain (Lorenz et al 2008, 147).

Bone metastases in prostate cancer are treated with bisphosphonates that inhibit osteoclast activity and bone resorption. It is thought that the inhibition results in decreased pain (Joon-Ha et al 2001, 1178).

Non-pharmacological pain methods

Complementary therapies, such as massage, could even offer an extra step to WHO's analgesic ladder (Radwany & Von Grueningen, 2012, 177). Some studies address heterogeneous interventions for to treat fifth pain, for example reflexology, aromatherapy, massage and exercise. Mixed evidence supports clinical pathways, patient education and massage in the treatment of cancer pain. (Lorenz et al 2008, 150.)

Some strategies to treat activity-related pain are the use of relaxation and distraction and the identification of physical techniques or orthotics to support or guard the painful part or limit painful movements (Coyle et al 1990, 89).

Although there is no survival advantage, radiation therapy can reduce the size of symptomatic tumours and it may allow the resection of left tumours. Tumour infarction by arterial embolization is another treatment option. For locally advanced and metastatic renal cell carcinoma, most aggressive treatment is palliative nephrectomy. (Joon-Ha et al 2005, 1180.) Strong evidence supports treating cancer pain with radiotherapy (Lorenz et al 2008, 147). Bone pain can be decreased using radiotherapy, decreasing tumour induced bone loss and using surgical stabilization of osteolytic weight bearing bones (Joon-Ha et al, 2005, 1178).

8 RELIABILITY AND VALIDITY

Reliability means the consistency of with which a tool measures what it is intended to measure. The nurse researcher has an interest in three measures of reliability that include the stability of the measure, and the internal consistency and equivalence. Criteria have been developed to establish the trustworthiness of qualitative research to include the the four key components of credibility, confirmability, dependability and transferability (Moule & Goodman, 2009, 191). A technique of measuring variables must be reliable if it gives the same result each time the same factor or situation is measured (Burns & Grove 2001, 227). The reliability of this research is high, because the results are consistent; the same pain management methods are talked about in many of the research articles and books. The results are also consistent over time; the research articles are from different years and the results are still similar.

Validity is a complex idea that is important to the researcher and the readers of the study who consider using the findings in his study. Critical analysis of research involves being able to think through threats to validity that have occurred and make judgments about how much these threats affect the integrity of the findings. Validity provides a major basis for making decisions about which findings are useful in patient care. (Burns & Grove 2001, 226.) According to Joppe (2000) validity determines whether the research truly measures what it was intended to measure or how truthful the research results are (See: Golafshani, 2003). The research was intended to discover different pain management methods to relieve cancer pain, and the research question was successfully answered, so the research can be considered valid.

Research syntheses are essential for putting studies in their scientific context and are increasingly common in public health, education and social welfare. A key criticism of systematic reviews is that they are often unable to provide specific guidance on effective or even ineffective interventions which is often because the primary studies that they include contain only few outcome evaluations. (Petticrew, 2003.) Systematic reviews do not replace judgment or compassionate reasoning and absence of clear evidence from systematic

reviews does not mean that inertia is the recommended action. (Mulrow & Cook, 1998, see Petticrew, 2003, 758.) Lack of clear evidence should not be a reason for inaction on health inequalities, rather we should be guided by our knowledge about the mechanism by which interventions might be expected to affect health (McIntyre, 2002. See Petticrew, 2003, 758). After all, at the core of evidence based learning, it is assumed that decisions may be guided by the best available research evidence (Petticrew, 2003, 758).

As a novice researcher the approach of the author of the thesis to the identification, critique and bringing together of the literature may not have been as thorough as that of a more experienced researcher. There were also resource and time limitations to this review. The author of the thesis did not have financial resources to purchase some of the articles so they had to be excluded. The study was also limited due to time restraints: there was a deadline that had to be met which created pressure. (Aveyard, 2010, 144.) Limitations could also be the small sample size as there were only eight articles. Also, the author of the thesis is interested in this field so she may have overlooked certain nuances and ambiguities of data. Familiarity with this subject obscures some ambiguous issues. (Roberts et al 2006).

This research was conducted to study ways to treat and alleviate pain in terminal cancer. The research question "How to manage pain of a cancer patient in palliative care?" was answered in this thesis. The results of this research are pretty consistent with the information presented in the background: opioid analgesics was the drug group most often mentioned out of all pain management methods. They were mentioned both in the books and most of the articles. Non-opioids and adjuvant analgesics as well as some of the nonpharmacological pain methods were spoken about both in the research articles and some of the books, but some of these methods, for example humor, respiratory and pet therapy were only mentioned in one of the articles, but not in any of the books.

The results of the research are essential when working in the field of health because without this knowledge a lot of cancer patients would experience

unnecessary pain and suffering. Pain and other unpleasant symptoms often experienced at the end of life cause physical suffering as well as interference with patients' quality of life. If unpleasant symptoms are severe, the suffering can affect the patient's cognitive and functional activities. Adequately relieving and minimizing these symptoms allows patients and family members to participate fully in life-closure tasks, which can contribute to a greater sense of comfort. (Barnett et al 2010, 83.)

The author of the thesis found it surprising how many different ways to alleviate cancer pain there are. Most of the nonpharmacological treatment methods were not known to her. Also, it was surprising and shocking to learn how undertreated cancer-related pain is and how easy it would be to ease it.

Palliative care includes disease directed treatment as well as functional, psychological and spiritual support. Disease directed therapy and palliative therapy should be provided simultaneously throughout the illness. Instead of curative therapy ending when palliative care begins, there should be a smooth transition from curative therapy to palliative therapy. (Joon-Ha et al 2005, 1181.)

The management of multiple symptoms in patients with advanced cancer is one of the most challenging aspects of care. The frequency, intensity and impact of symptoms vary remarkably. The persistence of symptoms and the fluctuation in their severity and impact on patient and his or her family require continuity of care with adjusts to treatment and ongoing monitoring. (Coyle et al 1990, 91.)

Patients face the end of their life better when their functional status has been maintained, helping them retain some control over the course of events. Only the patient can define his or her quality of life. Experts believe that time preceding death can be comfortable if people die without pain, with dignity and in their own ways. Given current analgesic options, psychological and spiritual interventions and an effective health care system all these goals can be achieved. (Wrede-Seaman et al, 2011, 89.)

Many factors prevent the health care professionals from providing high-quality pain management at the end of life. According to Daud (2007) high quality

evidence on pharmacotherapy remains weak which leads to inconclusive information and lack of consensus regarding drug doses, benefits and side effects. This problem should be solved by conducting new studies so that more valuable information on drugs could be discovered and less people dying of cancer would be suffering from unnecessary pain. Also, more researches should be carried out on the use of pathways for care of patients in palliative care. New pathways would help significantly in obtaining better quality information and would become a useful tool with which to register, monitor and improve the quality of care provided to patients with a terminal illness. (Daud 2007, 203.)

9 REFERENCES

- Adams, M.P. Holland, L.N. & Urban, C.Q. 2011. Pharmacology for nurses. A Pathophysiologic approach. 3rd edition. Pearson, USA. 219, 211
- American Pain Foundation, 2010a. Breakthrough Cancer Pain. Mending the break in the continuum of care. <http://www.painfoundation.org/learn/publications/files/breakthrough-cancer-pain-report.pdf> Consulted March 24, 2012. 2, 5, 7
- American Pain Foundation, 2010b. A reporter's guide: Covering Pain and Its Management. <http://www.painfoundation.org/learn/publications/files/reporters-guide.pdf> Consulted March 25, 2012. 4-7, 9
- Aveyard, H. 2010. Doing a Literature review in Health and Social Care: A Practical Guide. 2nd edition. Open University Press, United Kingdom. 2, 47, 144
<http://site.ebrary.com.ezproxy.turkuamk.fi/lib/turkuamk/docDetail.action?docID=10413319&p00=doing%20literature%20review%20health%20social%20care.%20practical%20guide>. Consulted March 28, 2012. 2
- Barnett, M. Mulvenon, C. Dalrymple, P. & Connelly, L. 2010. Nurses' Knowledge, Attitudes, and Practice Patterns Regarding Titration of Opioid Infusions at the End of Life. *Journal of Hospice and Palliative Care Nursing*. Vol. 12, No.2, 2010. 81, 83
http://ovidsp.tx.ovid.com.ezproxy.utu.fi:2048/sp-3.5.1a/ovidweb.cgi?&S=OKILFPDFNHDELBNCALNHDCCKBGPAA00&Link+Set=S.sh.15.16.19.22|4|sl_10 Consulted February 15, 2012.
- Bennett, M. Forbes, K. & Faull, C. 2005. The Principles of Pain Management. In: Faull, C. Carter, Y. & Daniels, L. 2006. *Handbook of Palliative Care*. 2nd edition. Blackwell Publishing Ltd. United Kingdom. 114, 120-121, 123-124, 126, 128-131
- Berenson, S. 2006. Complementary and Alternative Therapies in Palliative Care. Edit. In: Ferrell, B.R. & Coyle, N. 2006. *Textbook of Palliative Nursing*. 2nd edition. Oxford University Press, Inc. USA. 493
- Burke, K.M. Mohn-Brown, E.L. & Eby, L. 2011. *Medical Surgical Nursing Care*. 3rd edition. Pearson: USA. 133, 151, 153, 181, 265, 267-268, 281, 303
- Burns, N. & Grove, S. 2001. *The practice of Nursing research: Conduct, critique & utilization*. 4th edition. W.B. Saunders company, United States. 226-227, 591, 605
- Colby, W.H. 2006. *Unplugged. Reclaiming Our Right to Die in America*. Amazon, USA. 202, 204-205
- Coluzzi, P.H. 1998. Cancer pain management: Newer perspectives on opioids and episodic pain. *American Journal of Hospice and Palliative Care*. Vol 15 No. 1, 13-22
<http://ajh.sagepub.com.ezproxy.utu.fi:2048/content/15/1/13.full.pdf+html> Consulted March 2, 2012.
- Connor, S.C. 2009. *Hospice and Palliative Care. The essential guide*. 2nd edition. Taylor & Francis Group, LLC. United Kingdom. 2
- Coyle, N. Adelhardt, J. Foley, K.M. & Portenoy, R.K. 1990. Character of Terminal illness in the Advanced Cancer Patient: Pain and Other Symptoms During the Last Four Weeks of Life. *Journal of Pain and Symptom Management*. Vol 5 No.2 April 1990

<http://www.sciencedirect.com.ezproxy.utu.fi:2048/science/article/pii/S0885392405800211>
 Consulted February 15, 2012. 89, 91

Daud, M. 2007. Drug management of terminal symptoms in advanced cancer patients. *Current Opinion In Supportive And Palliative Care*. Vol.1 No. 3.
http://ovidsp.tx.ovid.com.ezproxy.utu.fi:2048/sp-3.5.1a/ovidweb.cgi?&S=LDMDFPLNIIDDOKFANCALKBGCNKFBAA00&Link+Set=S.sh.15.16.19.22%7c9%7csl_10 Consulted March 2, 2012. 203, 204

Dudgeon, D. Bruera, E. Gagnon, B. Watanabe, S.M. Allan, S.J. Warr, D.G. MacDonald, S.M. Savage, C. Tu, D. & Pater, J.L. 2006. A phase III randomized, double-blind placebo-controlled study evaluating dextromethorphan plus slow release morphine for chronic cancer pain relief in terminally ill patients. *Journal of Pain and Symptom Management*. Vol 33, issue 4, 2007. 365-371. <http://www.sciencedirect.com.ezproxy.utu.fi:2048/science/article/pii/S0885392407000267>
 Consulted February 28, 2012.

Ellershaw, J. Smith, C. Overill, S. Walker, S.E. & Aldridge, J. Care of the Dying: Setting Standards for Symptom Management Control in the Last 48 Hours of Life. 17
<http://www.sciencedirect.com.ezproxy.utu.fi:2048/science/article/pii/S0885392400002402>
 Consulted February 16, 2012.

Elo, S. & Kyngäs, H. 2008. The qualitative content analysis process. *Journal of Advanced Nursing*. Vol 62 N.o 1.
<http://academic.csuohio.edu/kneuendorf/c63309/ArticlesFromClassMembers/Amy.pdf>
 Consulted May 17, 2012. 108

Faull, C. Carter, Y. & Daniels, L. 2005. *Handbook of Palliative Care*. 2nd edition. Blackwell publishing Ltd: Australia. 2

Fink, R. & Gates, R. 2006. Pain Assessment. Edit. In: Ferrell, B.R. & Coyle, N. 2006. *Textbook of Palliative Nursing*. 2nd Edition. Oxford Press Inc. USA. 99, 102, 106, 110

Golafshani, N. 2003. Understandig reliability and validity in qualitative research.
<http://peoplelearn.homestead.com/MEdHOME/QUALITATIVE/Reliab.VALIDITY.pdf> Consulted October 9, 2012.

International Association for Hospice and Palliative Care. Opioid analgesics.
<http://www.hospicecare.com/manual/pain3.html> Consulted March 24, 2012.

International Association for Hospice and Palliative care. III Pain Con't.
<http://www.hospicecare.com/manual/pain4.html> Consulted May 14, 2012.

Joon-Ha, O.K. Meyers, F.J. & Evans, P.C. 2005. Medical and surgical palliative care of patient with urological malignancies. *The Journal of Urology*. Vol 174, N.o 4, 1178, 1180, 1181.
<http://www.sciencedirect.com.ezproxy.utu.fi:2048/science/article/pii/S0022534701685707>
 Consulted February 17, 2012.

Kalso, E. & Vainio, A. 1993. *Kipu*. Duodecim: Helsinki. 197, 198

Käypä hoito recommendations. Palliative (symptomatic) care of (imminently) dying patients.
<http://www.kaypahoito.fi/web/kh/suositukset/naytaartikkeli/tunnus/ccs00037?hacusana=cancer+pain> Consulted March 26, 2012.

Lesage, P. & Portenoy, R.K. Trends in Cancer Pain Management. *Cancer Control; Journal of the Moffitt Cancer Center*. Vol. 6, No 2. 1999.
<http://www.moffitt.org/moffitapps/ccj/v6n2/article2.htm> Consulted March 24, 2012.

Lorenz, K.A. Lynn, J. Dy, S.M. Shugarman, L.R. Wilkinson, A. Mularski, R.A. Morton, S.C. Hughes, R.G. Hilton, L.K. Maglione, M. Rhodes, S.L. Rolon, C. Sun, V.C. & Shekelle, P.G. 2008. Evidence for improving Palliative Care at the End of Life. *Ann Intern Med*; 148: 147-159. 150
http://ovidsp.tx.ovid.com.ezproxy.utu.fi:2048/sp-3.5.1a/ovidweb.cgi?&S=JKMLFPEFKLDDELEONCALAAOBMGDNAA00&Link+Set=S.sh.41|1|sl_10 Consulted February 18, 2012. 147, 150

McCaffery, M. & Beebe, A. 1989. *Pain. Clinical Manual for Nursing Practice* The C.V. Mosby Company, USA. 1, 4, 19, 20, 47, 172, 188-190, 212

Medical Center of McKinney, 2012. Therapeutic touch.
<http://medicalcenterofmckinney.ehcstaging.com/your-health/index.dot?id=37411&lang=English&db=hlit&ebSCOType=healthindex&widgetTitle=EBSCO%20Health%20Library%20Index> Consulted October 7, 2012.

Moule, P. & Goodman, M. 2009. *Nursing research. An introduction*. Sage Publications Ltd, United Kingdom. 184, 191, 261

Parker, J. & Aranda, S. 2000. *Palliative Care. Explorations and Challenges*. McLennan & Petty Pty Limited, Australia. 23

Petticrew, M. 2003. Why certain systematic reviews reach uncertain conclusions. *BMJ* 326:756. http://ovidsp.tx.ovid.com.ezproxy.utu.fi:2048/sp-3.5.1a/ovidweb.cgi?&S=CHAHFPECCLDDLEJMNICALPHIBNJMDAA00&Link+Set=S.sh.14|1|sl_10 May 17, 2012. 758

Radwany, S.M. & Von Grueningen, V.E. 2012. Palliative and End-of-Life Care For Patients With Ovarian Cancer. *Clinical Obstetrics and Gynecology*. Vol. 55, N.o.1.
<http://www.ncbi.nlm.nih.gov/pubmed/22343236> Consulted on May 17, 2012. 176-177, 180

Roberts P. Priest, H. & Traynor, M. 2006. *Reliability and Validity in Research*.
<http://nursingstandard.rcnpublishing.co.uk/archive/article-reliability-and-validity-in-research> Consulted on October 2, 2012.

The British Pain Society. 2010. *Cancer Pain Management*.
http://www.britishpainsociety.org/book_cancer_pain.pdf 75 Consulted October 2, 2012. 5-6, 75

The World Health Organization. *Cancer*. <http://www.who.int/mediacentre/factsheets/fs297/en/> Consulted March 24, 2012.

Thomas, E.M. & Weiss, S.M. Nonpharmacological Interventions with Chronic Cancer Patient in Adults. *Cancer Control* Vol. 7 N.o 2, 2000. <http://moffittstore.org/CCJRoot/v7n2/pdf/article6.pdf> Consulted March 26, 2012.

Watson, M. Lucas, C. & Hoy, A. 2005. *The Oxford Handbook of Palliative Care*. Oxford Univesity Press, USA. 27, 81

Woodruff, R. 2004. *Palliative medicine. Evidence-based symptomatic and supportive care for patients with advanced cancer*. 4th edition. United Kingdom: Oxford. 54, 69, 73, 74, 76, 78

World health organization Expert Committee: *Cancer pain relief and palliative care*, 1990.

Wrede-Seaman, L. 2001. Treatment options to manage pain at the end of life. American Journal of Hospice and Palliative Care. Vol. 18 No. 2. 2001.
<http://ajh.sagepub.com.ezproxy.utu.fi:2048/content/18/2/89.full.pdf+html> Consulted March 2, 2012. 89, 97, 106

Picture1. Visual Analog Scale.

<http://images.search.conduit.com/ImagePreview/?q=VAS+scale&ctid=CT2786678&SearchSource=3&FollowOn=true&PageSource=Results&SSPV=&start=0&pos=0> Consulted April 13, 2012.

Picture 2. WHO analgesic ladder.

<http://images.search.conduit.com/ImagePreview/?q=who%20analgesic%20ladder&ctid=CT2786678&searchsource=3&start=0&pos=3> Consulted April 14, 2012.

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Asiakkaan ohjaus/Juniorinetti	Lapsiin kohdistuva perhe-väkivalta	Miina Launiainen ja Em-mi Laiho	STHS09
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6.10.2011
Päiväys

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OPINNÄYTETYÖN TOIMEKSIANTOSOPIMUS

2

OPINNÄYTETYÖN SOPIMUSEHDOT

OHJAUS JA VASTUUT

Vastuu opinnäytetyön tekemisestä ja tuloksista on opiskelijalla. Turun ammattikorkeakoulu vastaa opinnäytetyön ohjauksesta. Toimeksiantaja sitoutuu antamaan opiskelijan käyttöön kaikki opinnäytetyön tekemisessä tarvittavat tiedot ja aineistot sekä ohjaamaan opinnäytetyötä toimeksiantajaorganisaation näkökulmasta.

OIKEUDET

Opinnäytetyön tekijänoikeus kuuluu tekijälle eli opiskelijalle. Tekijänoikeuden lisäksi myös muiden immateriaalioikeuksien osalta noudatetaan kulloinkin voimassa olevaa kyseessä olevaa oikeutta koskevaa lainsäädäntöä.

TULOSTEN JULKISTAMINEN JA LUOTTAMUKSELLISUUS

Opinnäytetyöstä laaditaan Turun ammattikorkeakoulun ohjeen mukainen kirjallinen raportti. Kirjallinen raportti luovutetaan toimeksiantajalle ja asetetaan kirjaston kokoelmiin tai julkaistaan elektronisessa muodossa verkkokirjastossa.

Julkaistava opinnäytetyöraportti on laadittava niin, ettei se sisällä liike- tai ammattisalaisuuksia tai muita julkisuuslaissa (laki viranomaisten toiminnan julkisuudesta) salassa pidettäväksi määritettyjä tietoja, vaan ne jätetään työn tausta-aineistoon. Opinnäytetyön arvioinnissa otetaan huomioon sekä julkaistava että salassa pidettävä osa.

Opinnäytetyön toimeksiantaja ja opiskelija sitoutuvat pitämään salassa kaikki opinnäytetyön tekemisessä sitä edeltävissä tai sen jälkeisissä neuvotteluissa esiin tulevat luottamukselliset tiedot ja asiakirjat.

Toimeksiantajan edustajalle varataan mahdollisuus tutustua opinnäytetyöraporttiin viimeistään neljätoista (14) päivää ennen aiotua julkaisemista. Toimeksiantajalla on oikeus määritellä salassa pidettävä osuus, jota ei julkaista. Toimeksiantaja antaa työstä ennen edellä mainittua julkaisemisajankohtaa lausunnon, jossa toteaa, että opinnäytetyöraportti voidaan julkaista kokonaisuudessaan tai määrittelee, mikä osuus työstä on salassa pidettävää.

TYÖSUHDE JA KUSTANNUKSET

Mahdollisesta työsuhteesta, työstä maksettavasta palkkiosta ja työstä mahdollisesti aiheutuvien kustannusten korvaamisesta toimeksiantaja ja opinnäytetyön tekijä sopivat erikseen.

OLEMME YHTEISESTI SOPINEET OPINNÄYTETYÖN TOTEUTUKSESTA YLLÄ ESITETTYLLÄ TAVALLA

6.10.2011

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