POSTOPERATIVE PAIN MANAGEMENT IN ELDERLY PEOPLE.

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Abstract:

Post-operative care in elderly people is the application of suitable treatment on elderly persons' autonomy. Pain assessment and management is judged to be a priority thus, pain in older people of 75 years and over can be under recognized and unrelieved. It is important to identify factors in the practice context that enhance or inhibit effective pain management. This research study sought to determine how the post-operative care in elderly people is carried out in improving standards of service and is guided by the following research objectives: To identify ways and interventions used by nurses to relief pain and provide comfort to the elderly. The research will be guided by the following research questions:(1) What is the methods used by nurses to assess postoperative pain in elderly? (2) What factors/intervention can be used by nurses to manage postoperative pain in elderly? Systematic literature review is the method used in this research. The results of the study were described in 3 categories namely, Postoperative Pain Assessment. Pharmacological intervention and Non-pharmacological intervention. Under postoperative pain assessment, subcategories were pain assessment tools and observational approaches of assessing pain. Pharmacological intervention the subcategories were: multimodal Analgesia, Opioid Analgesia, Non-opioids Analgesia and Administration of Analgesia. In conclusion, the study found that pharmacological and non-pharmacological interventions were effective in managing postoperative pain in elderly. More knowledge and education is still required to manage pain in elderly.

Keywords:	Elderly, pain, postoperative pain, pain assessment tool, nursing intervention
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1 INTRODUCTION

Pain is an unpleasant sensory and emotional experience; it can affect an individual physically, psychologically, spiritually and emotionally. Pain prevalence increases with age, elderly people can have multiple types of pain and therefore there is a need to control the pain so as they would be comfortable and restore their physical, psychological and emotional functions. The means and interventions used to reduce and control pain in elderly should therefor be capable of managing multiple pains. Impact of pain such as reduced socialization, depression, sleep disturbances and isolation can be reduced through management of pain.

IASP defines pain as “an unpleasant sensory and emotional experience associated with actual or potential tissue damage”. Pain is a common and troubling symptom for many older people. It is a complex, subjective and emotional experience that is highly prevalent in older people. Despite this, it is not an inherent part of the ageing process. There is an ethical obligation to identify those with unrelieved pain, and even if disease cannot be cured, to relieve suffering and provide comfort. Persistent pain should be recognized as a disease in its own right and is optimally managed with a multidisciplinary approach. Older people with cognitive impairment or communication difficulties need particular attention in the assessment and management of pain. Effective postoperative pain management has a humanitarian role, but there are additional medical and economic benefits for rapid recovery and discharge from hospital. A number of factors contribute to effective postoperative pain management including a structured acute pain management team, patient education, regular staff training, use of balanced analgesia, regular pain assessment using specific assessment tools and adjustment of strategies to meet the needs of special patient groups, such as children and the elderly. Through the review of several articles collected, this article will aim at finding the answers to the research questions.

1.1 Problem of the statement

Post-operative care for elderly people has been considerably a historical practice indicated by scholars Beverley. (2000). With several in-patients, geriatric health services have proven effective in elderly persons. However, to live independently, the answer to population of aging calls for community intervention such as preventive home visits and comprehensive geriatric assessment. Globally, there are approximately three million people over 80, and this number could double by 2030. Research indicates that elderly people who have a higher pain threshold are more sensitive to the effects of analgesics and/or need fewer analgesics in the perioperative period. However, advancing age is associated with frailty that with a small insult can result in catastrophic loss of function Rockwood and Hubbard. (2004). There has been a great deal of public concern about both hospital nursing and the care of older people at home (Care Quality

Commission 2011; Abraham 2011; Equality and Human Rights Commission 2011) and inevitably, the summit concentrated on the problems and challenges in caring for older frail elderly people.

1.2 Aim and research questions

The general objective of this research is to describe the different methods nurses can use to provide comfort and manage pain in elderly after surgery.

The research questions are:

1. How do nurses assess postoperative pain in elderly people?
2. What is the methods/interventions nurse's use in managing the pain?

1.3 Justification of the Study

The number of elderly people is increasing each year. According to statistics Finland the Given that the elderly people undergo surgery more times than any other age group, there is an increasing importance of anesthesiologists to combat pain management resulting from surgeries. Treatment of postoperative pain requires good multi-disciplinary and multi-professional co-operation. Every care-providing unit where surgery is performed should provide a pain management team structured according to local needs. (WHO) guidelines suggest the objective to be to improve the quality of life and avoid unpleasant perception to the patient and thus relieving a client from pain and suffering is decreased. The communication between the nurse and the patient is important and when the drug intervention has caused severe side effects or non-responsive, non-drug intervention should be considered.

2 BACKGROUND

2.1 Pain Perceptions and Processing

Pain is a complex, subjective phenomenon and is more than just nociception. There are multiple degrees and levels of processing within the central nervous system that contribute to the pain experience. Factors such as operative techniques, method of sutures, patient's experiences and anxiety are some of the pain perceptions. There has been much interest in the literature in the possible changes that may occur to pain perception and processing with age and age-related diseases such as dementia. Recent research indicates that older people tend to have higher pain thresholds but lower tolerance for severe pain Helme RD & Gibson SJ. (2001). A meta-analysis of pain tolerance studies concluded that there is an age-related decline

in the ability to tolerate severe pain and an increased vulnerability to the development of persistent pain Gibson SJ. (2006). Some of these changes are thought to be secondary to reduced endogenous opioid production and reduced plasticity of the nociceptive system with increasing age Gagliese L & Farrell MJ. (2005). Other changes in pain perception have also been described with advancing age. Pain becomes a less frequent presenting symptom for a range of acute medical conditions.

2.1.1 Pain in elderly

Pain is a common problem among the elderly. The prevalence of pain complaints among the elderly of 65 years of age and above is as high as 67%-80% Medling PS. (1991). This is because of multiple physiological changes that occur in the body as it ages. Due to this changes managing pain in elderly becomes a challenge. Previous studies have shown that pain in elderly is untreated, undertreated and forgotten Bernabei. (1998). Poor pain management by caregivers is a bigger problem in this group even though pain has adverse effect on them. The study found 26% of elderly in nursing home have daily pain and do not receive any form of analgesia. There is no clear physiological evidence for a decrease in sensation and intensity of pain in elderly but pain still is believed to be less prevalence in this population thus underreported and undertreated Landi F,lattanzio F & Gambassi G. (1999). A study by Ferrell. (1990) Indicated that pain management strategies were limited among elderly at homes. Halley. (1998) found that even though pain was rated second most behavioral problem among elderly at home, caregivers did not show much interest in learning strategies to combat the pain. Pain in elderly is a serious problem that affects the body functions and independence. Pain experts agree that the combination of drug and non-drug therapies is the suitable way of managing pain.

2.2 Treatment of pain in Elderly

2.2.1 Pharmacological

Unrelieved pain causes discomfort and the risk of cognitive failure. Aging causes physiological changes that alter the pharmacological effects of analgesia, by narrowing the therapeutic index and increasing the risks of toxicity and drug-interaction. They are more likely to have adverse effects to analgesia due to hepatic, renal and Central nerves system dynamic alterations. Analgesia is medicine that relieves pain, the two types of analgesics used to relive pain are: Opioids analgesics and non-opioids analgesics. Non-opioids analgesics are available over the counter and some by prescription. Non-opioids analgesics include nonsteroidal anti-

inflammatory drugs (NSAIDs) and paracetamol (acetaminophen). NSAIDs drugs are for treating inflammation and pain, higher doses of NSAIDs can increase side effect such as stomach upsets, bleeding in the stomach and stomach ulcers therefore should be used as prescribed. Elderly who have used NSAIDs for longer periods are at high risks of heart attack and stroke. Opioids analgesics such as morphine are prescribed to treat severe pain, opioids relieves pain through the central nerve's system and are known to be addictive. The hepatic functions are reduced by 30-40% in elderly Turner N. (1992) and this alteration makes the liver to increase oral availability of certain opioids by reducing the hepatic extraction. Aging is also associated with increased body fats, which increases the volume of distribution of absorbable medication thus delaying elimination and the onset of drug function. Compared with the younger people, the elderly have a reduced receptors sites leading to higher concentrations of drugs and delay of elimination of lipophilic medications. Therefore elderly patients may develop a higher manifestation of adverse drug reactions such as cognitive failure, loss of bladder or bowel control and anorexia Turner N. (1992). The basic Approaches of pharmacology in the elderly are by starting with low dosages and slow titration. The WHO three-step guideline was created to guide prescription. The WHO guidelines require administration of drugs immediately when pain occurs WHO. (1996). The ladder provides guidelines on administration of analgesia as pain occurs. The three-step ladder provides information on the right dose and right time of administering of the drugs. The pain ladder is inexpensive and 80-90% effective. Adjuvant analgesia is used to reduce the adverse effects of opioids and are the ones initiated prior to opioids. Opioid –sparing adjuvant analgesics allow for opioid reduction and can resolve confusion and delirium Davis & Srivastava. (2003). The type of pain, renal and hepatic functions alter the type of adjuvant analgesia and opioids to be administered.

2.2.2 WHO Analgesic Ladder

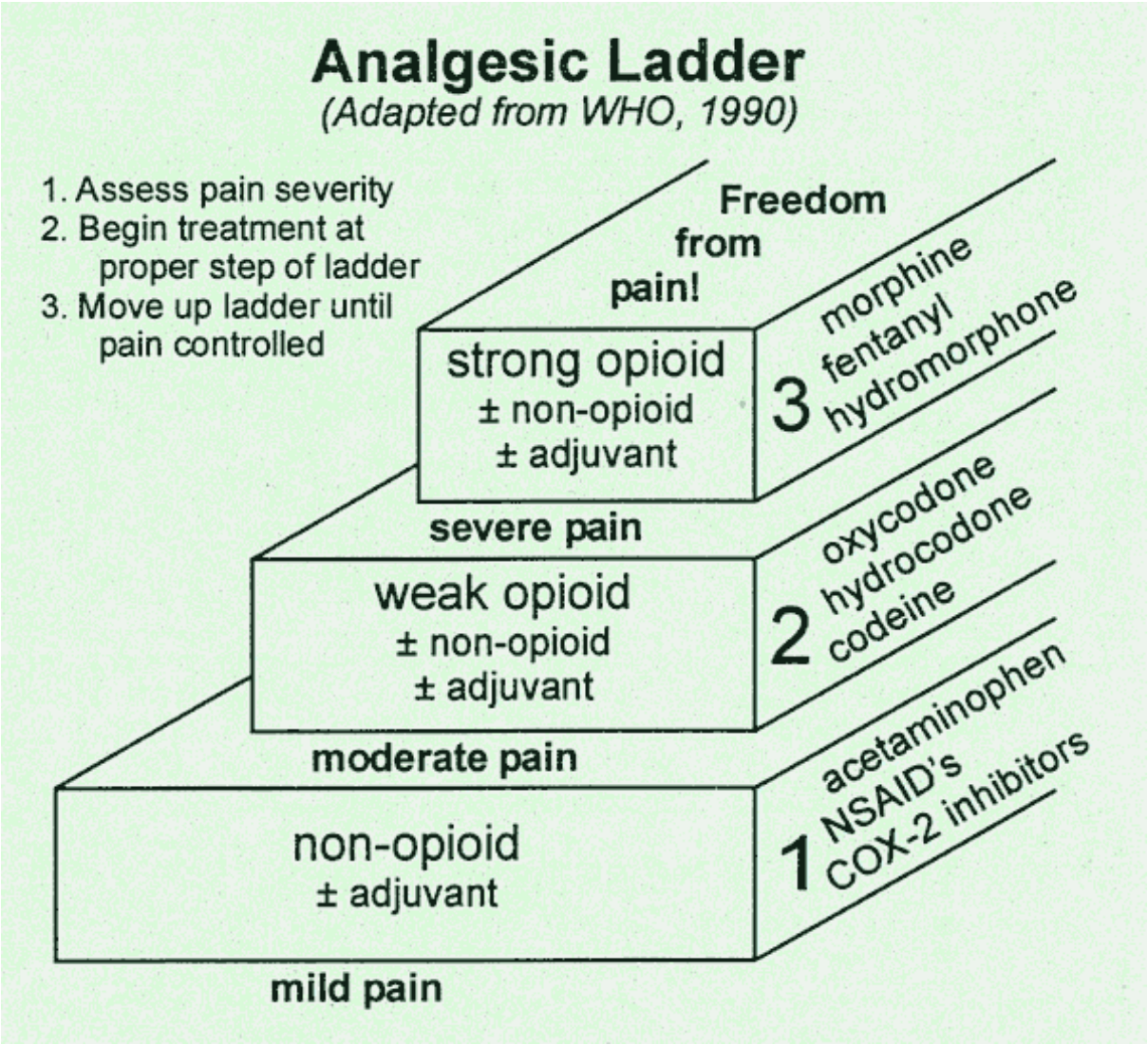

Diagram 1.Diagramme adopted from classes.kumc.edu.

2.2.3 Non-pharmacological Treatment of pain

A successful treatment of pain includes combination of pharmacological and no-pharmacological methods. Non-pharmacological methods aims to treat cognitive, behavioral and sociocultural dimension of pain. Non-pharmacological method is also more important to elderly since it does not have adverse reaction. The method can be classified as invasive or non-invasive methods. Some non-invasive methods include: Meditation, relaxation, music therapy, acupressure, cold and hot therapy, transcutaneous electrical nerve stimulation (TENS) and rhythmic respiration. The most common method of invasive is acupuncture. These therapies are suitable for treating pain by reducing stress and anxiety, reduce pain baviour through distracting the patient, and improve activity level and function capability. Patient and caregiver education is important as it provides information on the nature of pain, assessment instrument, management methods and coping strategies. Cognitive bevaioural treatment such as education, distraction and relaxation therapy aims at changing person's perception of pain and might not be suitable for cognitive impaired persons. It is always necessary to consider the elderly experience or knowledge about the non-pharmacological strategies before using them Wells,N,Pasero,C, & McCaffery,M. (2008). The contribution of physiotherapy and occupational therapy is of great assistance during postsurgical period, frequent visits by homecare services and ongoing rehabilitation for the elderly is vital to ensure maximum recovery following surgery. Effective rehabilitation program may reduce surgical stress, organ dysfunction, improved gastrointestinal motility for nutrition and early mobilization.

2.3 Barriers to pain management

Pain prevalence increase with age thus making the situation more complicated to deal with. The changes that come about with age can really influence on how the pain can be managed. Elderly people with dementia and cognitive impairments are more difficult to be assessed of pain. Cultural background also influences the way the pain will be reported to the caregiver, some elderly belief that pain medication is not necessary not until the pain is unbearable so they fail to report in time SE Ward. (1993). language barrier can also make it difficult to assess pain. Elderly people who have depression due to social isolation may also fail to report pain. Some elderly will also fail to report pain due to fear of loss of independence. Religious beliefs are also a barrier to pain management since some religions don't belief in medical treatment and will always try to avoid reporting their pain to the caregivers or refuse medication. Negative attitudes from the nurses towards the elderly may also make the patient not to report the pain. Failure by the nurses to assess pain fully and lack of knowledge or inexperienced

nurses can also be a major barrier to the management of pain in elderly CS Cleeland. (1998). Some nurses also are scared to administer analgesia because of fear of addiction or side effects.

2.4 Consequences of untreated pain in elderly

Poorly or untreated pain in geriatrics can cause complication and decline in functions. In postoperative settings untreated pain in elderly can lead to longer stay in hospital, promote delirium, postoperative complication and also can impair rehabilitation and recovery. Unrelieved pain can cause anxiety, which in turn can bring stress to the patient and later on causes depression. Depression will further interfere with activities of daily living, exercises and diet. Anxiety and depression can also interfere with normal sleeping pattern causing varying degree of insomnia Macintyre & Ready. (2001). Depression of the immune system can lead to wound infection, chest infection and pneumonia. Untreated pain can also results in distressing cognitive impairment such as disorientation, mental confusion and lack of concentration this is according to Wood. (2003). Unrelieved pain can cause respiratory dysfunction due to limitation of thoracic and abdominal muscles in a bid to relieve pain Macintyre and Ready. (2001). Untreated pain can cause immobility, and with prolonged bed rest, patient may develop pressure ulcers, decreased bone density, muscular weakness, and altered bladder and bowel function with retention and constipation. The UK National Confidential Enquiry into Postoperative Deaths. (1999) highlighted that the older the patient the greater the risk of morbidity and mortality after surgery thus undertreated pain increases the risk. Undertreated acute pain can also lead to the development of chronic pain syndromes that can be difficult to treat and can adversely affect the long-term quality of life Gloth. (2001). Medication, therapies, counseling and other pain management techniques are of importance in treating pain in elderly

3 THEORITICAL FRAMEWORK

Theoretical framework is normally used to prescribe and provide answers to research problems; in this case the author is going to use the comfort theory by Katharine kolcaba. Rautasala. (2004) Argues that by using nursing theoretical models, nurses find ways to analyze their own actions and decision-making process. Kolcaba describes comfort as an outcome of care. She has done an extensive review of literature about comfort. From the oxford English dictionary the first definition of comfort was “to strengthen greatly” she argues that this definition provided a wonderful rationale for nurses to provide comfort to patients so as the patient will feel better and the nurse will feel satisfied. From 1900-1929 nursing and medicine

provided comfort to patients because recovery was achieved, comfort was the first and the last option in providing treatment. Harmer. (1926) states that providing a "general atmosphere of comfort" concerned nursing care and care of patients was "happiness, comfort, ease, physical and mental". Emotional comfort was provided by physical comfort and modification of environment. From kolcabas argument, she states that comfort is positive and is achieved by the help of nurses. She uses three nursing theorists to derive three types of comfort: Relief which was derived from the work of Orlando 1961, Ease was derived from the work of Henderson 1966 who describe 13 basic functions of human beings to provide care and the third one is Transcendence that she derived from Zderad 1975 who said that patients could rise above their problems by being assisted by nurses. Kolcaba. (2003) Shows the four context of comfort: physical, psychospiritual, sociocultural and environmental.

3.1 Types of comfort

Relief: The state of patient in whom a specific need has been met. Kolcaba. (1991)

Ease: The state of calm.

Transcendence: The state in which one rises above his/her problems or pain.

Context in which comfort occurs are:

Physical: Pertaining to bodily sensations.

Psych spiritual: Pertaining to internal awareness of self, including esteem, concept, and sexuality and meaning in ones life; ones relationship to higher order of being.

Environmental: Pertaining to the external surroundings, conditions and influences.

Social: Pertaining to interpersonal, family and societal relationships.

3.2 Major Assumptions of Comfort

Katharine Kolcaba describe several major assumption of comfort, She states that human beings have holistic responses to complex stimuli, that comfort is a desirable outcome that is important in nursing. Enhanced comfort empowers patients to engage in health seeking behaviors of their choice. According to Kolcaba. (1997 & 2001), Institutional integrity is based on value system oriented to the recipients care and of equal importance, orientation to health promoting, holistic settings for families and care providers. The Encyclopedia of Nursing Research describes the importance of measurement of comfort as a nursing outcome. McCaffery & Good. (2000) describes comfort as a qualitative and holistic nursing strategy in postsurgical areas.

3.2.1 Theoretical Assertions

Kolcaba believes that nurses needs to provide comfort to patients by providing comforting care. A person in pain will always have a feeling of discomfort and the only important factor at that moment is pain relief. By relieving pain from a patient the act is normally comforting to the patient. The theory of comfort has three parts of assertions.

1. Effective comfort intervention results in increased comfort for the recipient and the provider. The interventions address basic human needs and treatment as holistic beings. The interventions are normally non-technical.
2. Increased comfort received by recipient's increases engagement in health seeking behaviors.
3. By increasing engagement in health behaviors, increased and improved quality of care is attained and thus benefiting the institution and its ability to gather evidence for best care for the recipients.

In order to provide better intervention for comfort, nurses must deliver the appropriate care and intervention and if the intervention doesn't work in the intentional and comforting manner, nurses then should consider other means or variables to explain why comfort management hasn't been attained, such variables include, financial difficulties, cognitive impairments and abusive homes.

3.2.2 Conceptual Framework for comfort Theory

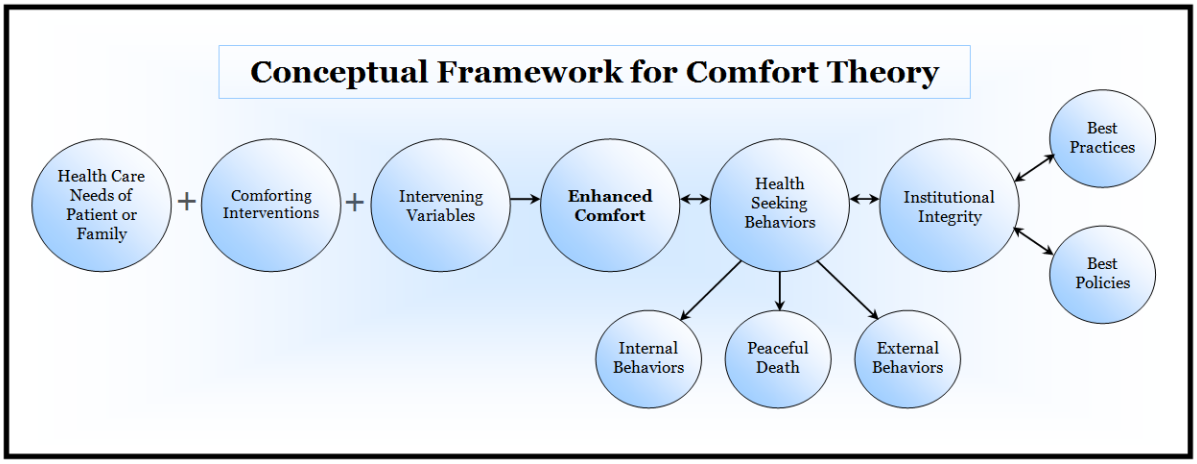

Diagram 2. http://comfortcareinnursing.blogspot.fi/p/comfort-theory-major-concepts.html

- Health care needs are the things identified by the patient or family member.

- Intervention variables are factors that cannot likely change and providers have no controlee over such as financial status, social support or prognosis.
- Comfort is the immediate desirable outcome of nursing care.
- Health seeking behaviors is the behavior of seeking help.
- Institutional integrity is the values, financial stability and wholeness of healthcare organization. Best policies are protocols and procedures developed by an institution. http://currentnursing.com/nursing_theory/comfort_theory_Kathy_Kolcaba.html.

4 METHODOLOGY

4.1 Systematic Literature Review

Methodology is the systematic and theoretical methods of analyzing a study. According to Taylor, Kermode & Roberts. (2006). Methodologies are particular sets of theoretical assumptions, which underlie the choice of data collection and analysis methods and process. The basic design to be used by the researcher is systematic literature review leading to a qualitative research. In literature review, the first step is to search for literature for relevant information that will answer the research question. A systematic literature review is adopted to control high volume of data in a consistent manner. It uses a logical review and method to find main points and analyze them in a functional form Calloghan & Waldock. (2006, p.344). In this research the author will such for literature from books, articles and journals. Qualitative method of research inquires about human conditions as it explores the meaning of human experiences and creates the possibilities of change through raised awareness and action (Bev Taylor & Karen Francis). The author will attempt to determine and answer the research questions of this research from the literature data collected. The main concern of the study will be to identify and describe the different methods used by nurses to manage pain in elderly people after surgery in order to provide comfort. It is expected that the data on identified determinants will provide some insight on the perception of nurses and elderly to control pain either by means of pharmacological or non-pharmacological means so as to make the patient`s life bearable and comfortable.

5 DATA COLLECTION

Data involves selecting subject and gathering information from them. The process involves data collection with regards to specific study and depending on the research method Burns &

Grove. (2005). In this research data was collected from different databases depending on the information needed. First different books were collected from Arcada library and online libraries of Helsinki. By use of Nelli portal, full text literatures, published academic journals,web pages and published books were used. The following databases were of importance and were used by the author: Academic Search Elite (EBSCO) and Sciences Direct. The author also used Google Scholar articles. The author first searched for the articles by using specific words. The words were: Geriatric or older adults or Elderly AND Postoperative AND Pain Management. Secondly the use of inclusion and exclusion criteria was included to minimize the search. The article selected should provide answers to the research questions. The author used the inclusion and exclusion criteria whereby the inclusion criteria was that:

1. The articles should be PDF full text.
2. Should be scholarly written articles.
3. The publication date period between 2004-2015
4. Should be free of charge.
5. The articles should be written in English.

While the exclusion criteria was that:

1. Articles that are not in full text.
2. Articles not written in English.
3. Articles not relevant to the topic.
4. Articles not free of charge.

5.1 Table 1: Search outcome

Databases	**Search words**	**Year**	**Results**	**Articles Used**
EBSCO	Geriatric OR older adults OR elderly	2004-2015	1,006	3
Science direct	Geriatric OR Older adults OR Elderly	2004-2015	2,881	7

Google scholar	Postoperative pain management in older adults	**2004-2015**	**21,900**	**1**

The articles were basically selected according to the relevance of the title to the research questions and the objective of the research. The year of publication was also taken to consideration and the origin of the article was not a limitation. Since the search was done at home, that is remote search portal was used, the number of hits was less compared to when the search is done in Arcada.From the database EBSCO, 10 articles were relevant but the author decided to use only 3 that were more specific to the research questions. Science Direct produced 12 articles that were relevant but only 7 were used. Google scholar 4 articles were selected but only one was used. At the end of the search 11 articles proved relevant and were the ones used to answer the research questions.

6 DATA ANALYSIS

Data will be analyzed using qualitative content analysis leading to inductive approach. The inductive approach will provide a clear and systematic set of procedures to analyze the qualitative data so as to provide reliable and valid results. Content Analysis is a research technique for making replicable and valid inferences from texts to contexts of their use.Klaus Kripperdorff. (2003). The content analysis was basically used since it can either use quantitative or qualitative methods of research. Content analysis allows the author to sift through large volume of data with ease. In qualitative data analysis, data is reduced to concepts that fit the research phenomena. By using qualitative data analysis, trustworthy is supported since it reports the process of content analysis accurately. Data collected from each article is thoroughly analyzed and reflected upon. Data was analyzed by reading thoroughly through the 11 articles to find necessary information. A summary of all the important ones was then aligned. The important concepts that would answers the research questions are then divided into several categories. The categories were, Pain assessment, pharmacological and non-pharmacological intervention. The author also had put more subcategories such as, Pain assessment tools in elderly, Behavioral tools, multimodal analgesia and administration of analgesia. The irrelevant information that is not coded will be left aside for further references when required.

6.1 Table 2: Description of Selected Articles.

Title of the article and method used.	Author and year	Aim of the research	Results and conclusion
Article 1. Non-drug therapies for pain management among rural older adults. (Science Direct). Design and Sample method.	Judith M Fouladbafhsh,Susan Szczesny,Elizabeth S.Jenuwine,April H.Vallerand. 2011	To educate older adults appropriate nondrug treatment for pain and to inform nurses on the value of education for use of nondrug therapies combined with pharmacological ways of pain management.	The article proved that educational intervention administered by nurses promotes safe and effective means of using nondrug treatment of pain by the elderly in the community.
Article 2. Piloting Tailored Teaching on Non pharmacological Enhancement for Postoperative pain management in Older Adults. (Science Direct).	Susanne M.Tracy. 2009	To describe three nonpharmacological means/interventions of reducing and managing pain, namely: Music, self guided imagery and slow stroke massage.	The tailored pilot teaching of nonpharmacological interventions of pain to the patients improved their knowledge and attitudes about the strategies, high satisfaction after the use of the intervention methods and an increased number of users of the non-pharmacological interventions.

Article 3. Postoperative Pain: Nurses knowledge and Patients 'Experiences. (Science Direct).	Lavonia Francis, DNP, RN, NEA-BC and Joyce J.Fitzpatrick.phD, RN, FAAN. 2013	To determine Nurses knowledge and attitude on postsurgical pain and to identify patients' intensity of pain experiences.	There is still need for increase knowledge by nurses about pain management.
Article 4. Assessment and Treatment of Postoperative pain in older Adults. (Science Direct).	Barbara Rakel, PhD, RN, Keela Herr, PhD, RN, FAAN 2004.	To review strategies for assessing and treating pain in older adults	The research revealed that more pain management skills is needed for postoperative older adults so as to reduce advanced effects associated with high pain intensity for example impaired cognitive performance.
Article 5. Management of postoperative Analgesia in Elderly Patients.Review of literature. (Google Scholar).	Fredric Aubrum. 2005.	To explore factors that complicate Pain management in elderly people and to evaluate the use of analgesia in elderly.	Management of chronic and acute pain should be developed in elderly population where elderly are still undertreated of pain.
Article 6. A A Review of postoperative pain management and challenges. SCIENCE DIRECT.	Allison Taylor And Linda Stanburg.	To review some of the commonly used analgesia and look at the challenges in managing postoperative pain.	Pain management needs to be a priority and responsibilities needs to be shared in order to ensure improvement. There are many challenges still faced in our modern healthcare.
Article 7.	Closs SJ.2005	To investigate how relaxing techniques can	The results of the study

Assessment of pain in older people-The key to effective management.Science Direct.		affect pain and anxiety in older adults undergoing abdominal surgery.	indicated that relaxation techniques proved effective and can be incorporated as other means of pain management strategies in older adults.
Article 8. A literature review exploring how healthcare Professional contribute to the assessment and controle of postoperative pain in elderly people. (EBSCO)	By Donna Brown. 2004.	To identify how healthcare professionals contribute to the assessment and control of postoperative pain and to explore barriers to achieving advantageous pain control in elderly.	Pain should be assessed individually that is according to the patient own feelings; The article also cited a need for more education by clinicians on the basis of pain assessment and management in elderly. The intervention discussed in this literature proved to improve or reduce chronic pain in elderly.
Article 9. Nonpharmacological Approaches to the Management of chronic pain in community dwelling older adults: A Review of Empirical Evidence. (EBSCO)	By Juyoung Park,PhD and Anne K.Hughes,PhD. 2012.	To understand the importance and efficacy of nonpharmacological remedies to chronic pain in elderly living in the community. Basically physical and psychological interventions.	Appropriate approach to pain assessment such as questioning about pain intensity and location plus the use of appropriate scale leads to a rapid, improved and relief of pain in elderly.
Article 10. Pain Assessment In Elderly. Review of	Chiara catananti and Giovanni Gambassi. 2010	Managing pain through its assessment.	

literature. (Science direct) **Article 11** Postoperative pain in older people: A review of literature.EBSCO.	Morag Prouse. 2005	To explore factors that complicate the management of pain in older people,to inform future research,educate and nursing practice.	The findings concluded that managing pain well in older people involves understanding the influence of factors such as attitudes and beliefs,physiological aging process,pharmachological factors and the social construction of the older people in healthcare.

6.2 Ethical consideration.

Ethics is generally important in research because it provides rules and direction on how to conduct research without exceeding the ethical boundaries. According to Uwe Flick there are four principles for ethical theories namely: non-maleficence or avoiding harming participants, beneficence which means research on human should provide positive and identifiable benefits, Autonomy which is respecting participant's decisions and justice which means all people should be treated equally. Since this research did not require direct participation with human, most of these theories were not used apart from beneficence. The author when choosing the topic of the study observed Beneficence. The study was chosen after observing situations of pain during homecare and surgical practical training. By choosing this topic it will benefit nurses in improving their knowledge on how to manage pain in elderly at home and in hospital. The Research Governance Framework of Health and Social Care. (2001) provided standards for all institutions involved in research and in this case Arcada guidelines for scientific writing writing has been followed. Plagiarism is the use other peoples formulations without acknowledging them. Plagiarism has been clearly avoided by including a full list of references and by quoting authors when other people's words have been used. The author has also used more sources to develop arguments Uwe Flick 2011 p.42.

7 RESULTS

In this chapter, the author will be presenting the results as found from the selected articles. The results will be discussed in categories and subcategories: Postoperative Pain Assessment. Pharmacological methods and Non-pharmacological methods. Several subcategories are also going to be discussed under each category. Under postoperative pain assessment category, pain assessment tool and observational approaches of assessing pain are subcategories and under pharmacological intervention the subcategories are: multimodal Analgesia, Opioid Analgesia, Non-opioids Analgesia and Administration of Analgesia. Each category will be discussed as found in the article and will try to provide answers to the research question

7.1 Postoperative Pain Assessment

Articles 4, 5, 7, 8, 10 and 11 have mentioned assessment methods used by nurses to assess postoperative pain in elderly. The methods include the use of: Verbal Rating Scale (VRS), Visual Analogue Scale (VAS), Face Pain Scale, the McGill Questionnaire and Numeric rating scale (NRS). Effective pain management outcome depends on the assessment of the pain. The

assessment involves, pain quality, location, pattern, patient behavior, intensity and pain symptoms. The nurse role in the care of pain is providing relief from discomfort reported by the patient. The process of nursing involves, identifying, diagnosing, planning, implementing and evaluating. The nurses' responsibilities are to assess the state of the patients so as to provide care. The use of appropriate language, appropriate pain assessment scale and use of appropriate method of communication to non-verbal elderly are of importance during pain assessment in elderly. Article (4) has outlined the summery of recommendations to consider while assessing pain in elderly. The recommendations are: Consider the source of pain such as from the incision area, trauma, positioning, irritation infusions and recent surgery, attempt to obtain self-report of pain and intensity, for elderly who are unable to self-report, consider using observations and physical indicators, use of family members or caregivers identify changes in behaviors or activities that can suggest presents of pain, consider giving an analgesia dose and observe for changes, systematically assess and document at intervals and after intervention, use of the same pain scale or behavioral approaches each time while assessing the pain and record pain assessment data in accessible location for other healthcare providers (4).

7.1.1 Pain Assessment Tools

From articles 4, 5, 7,8,10 and 11 the self-report of pain was through the use of tools such as NRS, VDS, Pain Thermometers, Face Pain Scale and The McGill Pain Questionnaire.

When assessing pain, patients should be asked to describe how they feel. The nurse's role in pain management is to provide relief. The most commonly used tool in verbally able older adults is The Numeric Rating Scale. It has 0-10 numeral and is a valid tool used in measuring postoperative pain in elderly. Viewing or listening to the numbers the rating by number on how the pain feels whereby 0 is no pain and 10 is extreme pain has been successful in providing information about pain serenity (4,7,8,10). Visual Descriptors scale (VDS) is used when understanding NRS is difficult. In VDS or VRS originally by Melzack involves a five points where the patient is simply asked to describe how the pain is, whether no pain, mild, moderate, severe or extreme pain. Face Pain Scale (FPS) has also been found by several studies to provide information about pain in elderly (4, 7, 10, and 11). A study by stuppy found that FPS was more reliable by 53% compared to other scales (10). FPS consists of drawings of six faces whereby 0=No pain and 6= Maximum pain. The patient choses the most appropriate face that describe his or her pain (8).

Tools for more complicated pain measure were found to be, Brief Pain Inventory (BPI) and the McGill Pain Questionnaire (MPQ). The McGill Pain Questionnaire (MPQ) is a very useful measure of pain quality and provides a list of descriptors used to describe pain of which the

user can pick words that can later be collated into a sensory, affective and evaluative overall score. It involves detailed information such as pain location, quality, duration and factors affecting pain. The questioner takes about 15-30 minutes to complete and this might be a disadvantage to this method since most health organizations do not provide adequate time for nurses (8). This measure is well validated within many populations and translated into many languages for cross-cultural use. Once the pain scale has been validated, appropriate pain treatment will now be considered.

The Brief Pain Inventory (BPI) has been developed and tested in cancer patients. It is a 16-item instrument that gathers information on pain serenity and rates the level of interference on functions. It has been recently modified and demonstrated stable and valid assessment in older postoperative patients (10,8). Pain Disability Index (PDI) is also an instrument of 7-digits that measures interferences of pain on activities of daily living. The PDI has been successfully used to examine clinical presentations with chronic pain and response to treatment in older adults (10).

7.1.2 Observation Approaches of Assessing Pain

It was found that elderly people who cannot respond verbally could be assesses using alternative method such as the use of observing behaviors (4, 8, 11). Elderly with hearing and cognitive problems could be more difficult to assess. The use of observation assessment is considered in this group. Non-verbal behaviors such as bracing, rubbing the affected area, restlessness, loss of appetite, aggressive, sad expressions withdrawing from others and altered sleep, fatigue and anxiety are some of the behaviors that might indicate presents of pain in this group. Verbal responses such as groaning, moaning, crying, grunting, yelling, and verbal outburst are all indicators of pain (4,8). Autonomic responses such associated with acute pain such as diaphoresis, increased heart rate, blood pressure or respiratory rates may be observed to find out if there is pain (4). However the absence of these autonomic responses may not indicate absence of pain. It was important to increase the font size to at least 14-point for the elderly with impaired vision. Autonomic responses such as, Blood pressure, heart rate and respiratory rate are sometimes considered to be signs of acute pain. Nurses should ensure that hearing aid is in place and all the necessary noises have been put off. Adequate and enough time for assessment should be considered during the assessment of pain in elderly (7). The American Geriatric Association have reported 6 pain behaviors associated with pain that can be observed by nurses while assessing pain in elderly with dementia. The 6 are: facial expressions, body language, vocalization, changes in interaction behaviors, changes in activities and mental status (4). The Discomfort Scale for Patient with of the Alzheimer's Type

(DS-DAT) is a five minutes observation of people with advanced dementia of Alzheimer disease it was developed by (Hurly et al 1992) and it identified nine behavioral indicators of discomfort. The Indicators include: Noisy breathing, negative vocalization, body languages such as (tensed or relaxed), facial expressions (content/sad or frightened) and fidgeting (8). The behavioral pain assessment tool has been supported by a study by Simons and Malaba and indicated that when nurses interpreted the behaviors and administer analgesia the pain behavior changes positively (8).The diagram below describe some of the pain assessments scales.

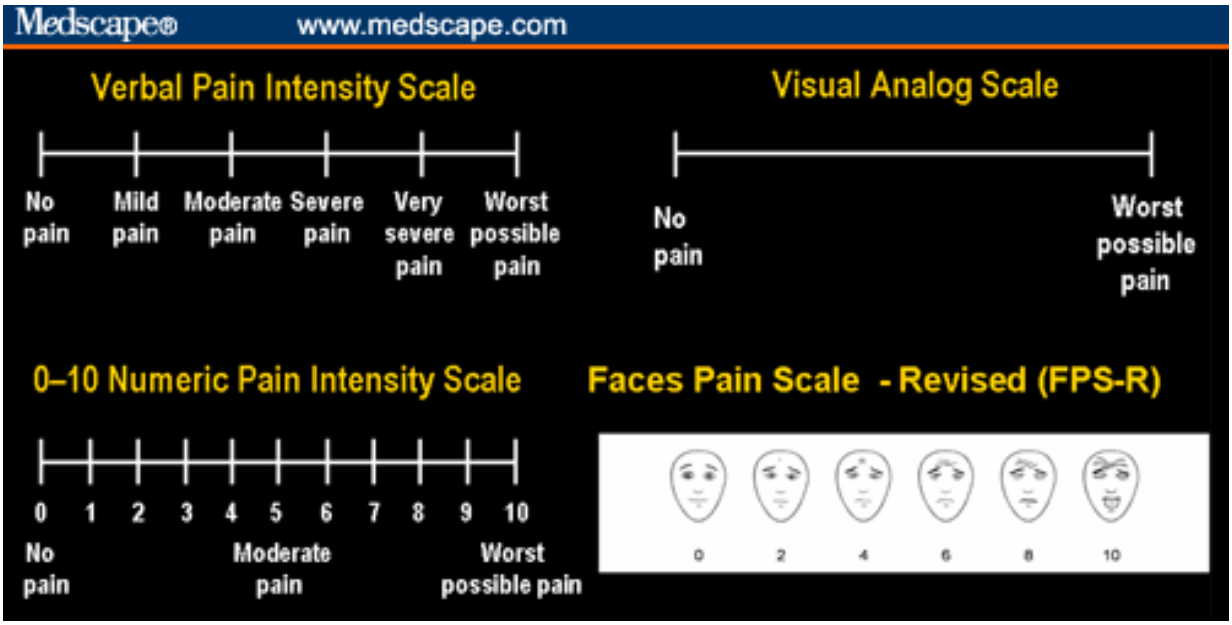

Diagram 3:Pain Assessment scale. http://www.img.medscape.com

7.2 Pharmacological Intervention

From the articles (4,5,6 and 10) read it was found that drugs commonly used after surgery include Treatment with Analgesics such as opioids analgesics, non-opioid analgesics, multimodal analgesics and adjuvants. These Analgesics are going to be discussed in this results part. Adjuvant has been discussed in the background.

7.2.1 Multimodal Analgesia

Multimodal analgesia means the use of two or more analgesia. Addition of paracetamol and NSAID to IV PCA provided an opioids effect, whereby the morphine effect of paracetamol 20% less, COX-2 was 25%, while NSAID 40% as discussed in article 6.Itravenous paracetamol has been widely accepted because of its quick onset of effect and can considerably provide more sparing opioid effect. NSAID are effective in postoperative pain but has adverse effect that affects and limit their use. It was found that it interferes with renal function, gastric functions and platelet function. When used in conjunction with PCA,it reduces vomiting, sedation and nausea. Patient controlled analgesia involves a number of routes and drugs. There are several routes such as oral, subcutaneous, transdermal, epidural and intravenous. IV PCA have been widely used and accepted (4,5,6) it has been found to provide patient satisfaction and reduction of pulmonary complications. Challenges to effective PCA include: Patient should be able understand it and be able to use it independently, patients must be ensured of safety of using it and experiencing side effects such as nausea and vomiting may limit the patients use. For PCA to be effective, effective communication and patient education should be provided (6). Regional analgesia and local anesthetic can be administered to patients through local wound infiltration, perineal injection, spinals or epidural. Wound infiltration reduces pain score and need for opioids. Perineal analgesic also reduces the use of more opioids and provided satisfaction to patients. Epidural involves a lot of risks even though it has proved more effective. It is still being reexamined for use.

7.2.2 Opioid Analgesic

Opioids are used to treat acute pain. Opioids such as morphine and fentanyl are commonly used for older adults after surgery (4, 11). Opioids are normally administered through intravenous or epidural. Common administration routes of opioids in elderly after surgery are through bolus doses, IV PCA or epidural until the patient is capable of taking them orally (4). IV bolus doses are administered at scheduled time for at least 24 hours after the surgery. IV

PCA can be used when the patient has the physical and cognitive ability to use the equipment or family or nurse can assist them. Epidural administration of opioid and local anesthesia has been proven to provide superior pain relief after surgery. Epidural administration of opioids is advantageous to other means of administration because doses are much smaller compared to those in parenteral rout thus benefiting cognitive function (4). Continuous infusions are avoided in older adults because of risks of drug accumulation and toxicity (4, 5). Elderly people have been found to be sensitive to opioids especially when they have never used them before (11). Intramuscular (IM)) opioid administration is less efficient because of muscle mass decrease in elderly and less fatty tissue that results in slowed absorption of the analgesia.

7.2.3 Non-Opioid Analgesia

Non-opioid analgesia commonly used in acute pain treatment is acetaminophen, non-steroidal anti-inflammatory drugs (NSAIDs) and COX-2 selective NSAIDS.Acetaminophen is commonly used operatively and is relatively safe for elderly. It is found in combine formulation of opioids. Non-steroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen and ketorolac, naproxen are avoided due to higher risk of adverse effect of gastric ulcers, bleeding and renal toxicity (4, 5, and 11). The COX-2 selective NSAIDs are safe in terms of pain relief and less GI toxicity, ulceration and bleeding but can cause renal impairment (4). Important characteristics of selective NSAIDs are that it decreases platelet aggregation thus effective for patient with bleeding after surgery.

7.2.4 Administering Analgesia

Administering of analgesia especially in elderly might be a challenge due to attitudes, lack of education and fear of side effects by the nurse or the patient. It is important to consider the administering route after the pain has been assessed accurately. It is important also for the nurse to have a clear knowledge of the analgesia risk, side effects and addiction so he or she can educate the patient at hand (6,4). Caregivers should use the current information and equianalgesic charts when selecting and administering opioids (4). Poor pain management was found to be mainly caused by lack of education. It has been discussed in (5,6) that pre-registration training for pain management is crucial and important for nurses and post-educational outcome have proved successful. Education only has not provided enough knowledge and Innovative approaches such as multiproffessional education, cognitive

restructuring, change theory and service changes are being implemented. Morphine is commonly used in elderly because it has a short half-life and fast acting. The only contraindication of morphine is that it can cause allergic reaction to some patients. According research (4) there was no tolerance or adverse effects when administered per kilogrammes.55 patients of 70 years or less was found to be the best predictors of the requirement of morphine during the first 24 hours. Adverse effects of opioids such as constipation, vomiting and nausea are common in elderly and frequent monitoring of sedation and respiration after every 2 hours is important and reducing the dose when sedation is detected.

7.3 Non-Pharmacological methods

Non-pharmacological interventions such as TENS, Massage, Heat, Cold, Relaxation, Music and guided imagery have been found effective in reducing pain in elderly from the selected articles. A number of researches have provided evidence that non-pharmacological intervention can be used and be effective in managing postoperative pain in elderly. By combining pharmacological and non-pharmacological intervention, effective result has been found in several studies. (1,2,4,9). Cutaneous stimulation technique such as transcutaneous electrical nerve stimulation (TENS). This involves stimulation of skin and tissues to moderate the pain transmission and reduce pain. TENS and opioids analgesic combined together is effective than using the opioids alone. Some characteristics of patients such as being obese, long term use of opioids and neuroticism affects the effectiveness of TENS. Evidence has shown that by applying TENS while walking and breathing deeply reduces pain. When using TENS, dry skin should be creamed or hydrated to reduce discomfort and provide better effects. Electrodes should be put in different skin areas to avoid breakage and skin irritation. Massage is soft tissue slow touch using hands or mechanical appliances. Message therapy has been used to reduce edema and improve blood circulation. It can be done directly over affected areas to reduce pain. For relaxation and soothing, massage can be applied on the hands, feet, shoulders, scalps, back or neck.

Heat therapy is normally used to provide comfort. It is usually performed by chemical gel pack, heating pads and lambs or with wet warm towels. Or simply by taking hot bath or shower. There has been evidence of application of cold therapy in managing pain, it has been proven that cold can relieve pain more than heat and its effects last longer. Cold therapy is applied by wet cold cloth, icepack and chemical gel pack. Relaxation techniques such as deep breathing, yawning, muscle relaxation and meditation can be used to manage pain in elderly. The technique requires cooperation between the nurse and the patient. A study in the US recommended that nurses and physicians should encourage relaxation and other non-

pharmacological technics with analgesia before and after surgery. Music therapy is also widely and effectively used to manage pain in elderly and have proved effective in reducing and providing comfort. Listening to music provides distraction from fear and anxiety and also enable patient to feel comfortable in an unfamiliar environment. Patients are given opportunities to select music that they like to listen to. In elderly slow and easy music is preferable. Guided imagery just like music has been helpful in managing pain. In elderly patients, they are asked to recall past memories or experiences. It has been proven that guided imagery can reduce hospital stay, consumption of medicine and outcome expectancy of cancer patients. Non-drug therapies were found to be cheap and accessible to patients in pain and can be used by rural community dwellers. The therapies do not require frequent dose monitoring and multiple instructions. Educational intervention was required in heat therapy, cold and relaxation techniques (1). Patient education is important to elderly since some of them may not realize the importance of aggressive treatment of pain (4). Preparing elderly patient before surgery by teaching postoperative experiences can help reduce the outcome of pain. Explaining to patients and family on the adverse side effects of certain analgesia, withdrawal symptoms, decreasing effects of drugs and availability of non-pharmacological options when required is necessary. Older people may be more receptive to terms like pain medication or pain medicine and therefore words such as narcotics or drugs that may contribute to fears about drug addiction (4).

8 DISCUSSION

From the results of this study age added complexity in the effectiveness of pain management in elderly and it remain a major problem in public health (11). From the literatures, Effective treatment of postoperative pain should be achievable for all patients; Aggressive pain relief is needed for the elderly to reduce the adverse effect associated with pain. Nurses were found to be professionally responsible in providing relief to the patient by assessing, pain, administering analgesia, prescribing analgesia and evaluating the quality of relief. The main approach and effective way in managing pain in this group is the combination of analgesia and supplements in addition to non-pharmacological interventions. The author found that nursing interventions were able to provide relief to pain when pain was clearly assessed even though older people had different ways and means of giving out information concerning pain (2). The first step in treating pain is observation and in this study it was pain assessment. Pain should be ideally assessed both before and after treatment. Even though in some studies it was found that time

was not well provided while assessing pain in elderly. Pain if regularly and frequently assessed and adjustment of delivery methods and doses should be made based on individual responses (4). Pain score are to be documented for future references. In this study the documented pain score and report from the caregiver determined whether the patient would need opioids or not. The documented information has a clear impact on the administration of analgesia. Nurses played clear roles of administering and monitoring the analgesia. Early discharge from hospitals after surgery required more supervision at home because postoperative pain was found to affect the patient functions. Factors such as preoperative information, education and guidance were importance on the patients' recovery after surgery. Pain assessment, evaluation of treatment efficacy and analgesic side effects should be monitored (5). From this study it was found that a lot of elderly prefer self-treatment of pain including physical and cognitive approaches. Nurses can promote and lead research initiatives that can ensure elderly voices are heard (11). Research and education on pain management should be one of main priorities in medicines worldwide (5). Other Non-drug therapies and alternative approaches should be studied in order to assist in self-management of pain at home (1).

9 RELATING RESULTS TO COMFORT THEORY

Kolcaba (2003) describe three categories of comfort:

1. Standard Comfort intervention that maintains homeostasis and control pain.
2. Coaching to relieve anxiety, provide information, give hope, reassurance, listen and assist in recovery plan.
3. Comfort, the particular things nurses do to patients that make them feel cared for such as massage and guided imagery.

Kolcaba has further described pain in three categories namely: Relief, ease and transcendence. In this study the use of comfort intervention is natural to a nurse since she/he always assesses patient in order reduce discomfort. From this study, the use of pharmacological and non-pharmacological interventions such as music, guided imagery and massage provided comforting feeling and helped relief the pain. By administering prescribed analgesic as discussed in the results to patient in order to reduce pain, a patient would be relief when the pain gone or reduced. Ease was found in relaxation technics such as meditation (4), deep breathing, and yawning and muscle relaxation. Meditation Music can provide a soothing and

calming feeling therefore reducing discomfort. Music and guided imagery provides transcendent by enabling the patient to think positively or spiritually.

Application of comfort theory in this study is further explained in the table 3 bellow even though couldn't find enough information to support environment.

9.1 Table 3: Application of comfort theory

	Relief	**Ease**	**Transcendence**
Physical	Pain	Administration of Analgesia to ease pain (5,6). Relaxation techniques to ease pain and use of TENS. (4)	Comfort reported after the use of combination of analgesic and nonpharmacholigical intervention such as TENS (4,5,6)
Psych spiritual	Anxiety, depression	Use of psychologist and social worker for social difficulties (8). Music, Prayers and meditation (2)	Patient reported feeling of ease after listening to music, use of guided imagery and meditation (2,4,8)
Environmental			
Social cultural	Family, Culture	Providing music that is culturally acceptable and familiar to the patient (4)	Information provided to the patient and family through patient education on pharmacological and nonpharmachological techniques (1,2,4,8)

10 CONCLUSION AND RECCOMENDATION

Treatment of postoperative pain requires multidisciplinary and multiproffessional cooperation. Nurses are expected to deliver clinically effective care based on best evidence available and to make responsible decision in accordance to individual needs of the patient. Archiving these goals by implementing change and improving the quality of patient care. Factors that contributed to effective postoperative pain management were found to be patient education, regular staff training, use of balanced analgesia and regular pain assessment. Postoperative pain management in elderly should be further researched as the number of elderly people is increasing and many challenges faced. Pain management should be put as a priority especially in elderly. From this study combination of pharmacological and non-pharmacological intervention was effective in reducing the postoperative pain and therefore nurses should be more educated in order to have enough knowledge to provide effective postoperative care to the elderly.

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12 LIST OF ABBREVIATIONS

- IASP--------International Association for the Study of Pain.
- WHO--------World Health Organization.
- NSAID-------Nonsteroidal Anti-inflammatory Drug.
- TENS--------Transcutaneous Electrical Nerve Stimulation.
- VAS----------Visual Analogue Scale.
- NRS----------Numeric Rating Scale
- VRS----------Verbal Rating Scale
- VDS----------Visual Descriptors Scale
- MPQ----------McGill Pain Questionnaire.
- BPI----------Brief Pain Inventory.
- FPS----------Facial Pain Scale.
- PDI----------Pain Disability Index.

- DS-DAT------Discomfort Scale for patient with Dementia of Alzheimer Type.
- PCA----------Patient Control Analgesia.
- COX-2--------Cyclooxyge