jamk.fi

Culture's effects on non-pharmacological pain management of children

Literature Review

Roosa Peltomäki

Bachelor's Thesis
November 2015
Degree Programme in Nursing
Social Services, Health and Sport

jamk.fi

Description

Author(s)	Type of publication	Date
Peltomäki, Roosa Maaria	Bachelor's thesis	16.11.2015
	Number of pages 54	Language of publication: English
		Permission for web publication: x

Title of publication

Culture's effects on non-pharmacological pain management of children

Literature review

Degree programme

Degree programme in Nursing, Bachelor of Health Care

Supervisor(s)

Ratinen, Pirkko & Sinivuo, Riikka

Assigned by

-

Description

Finland is becoming increasingly multicultural. Pain management is an essential part of nursing, and aspects of non-pharmacological pain management are easily undervalued. The pain management of children still needs development, and cultural sensitivity should be included in this process.

The aim of the study was to find out the cultural effects on the non-pharmacological pain management of children under 18 years old and the impact of nurses' backgrounds on their use of non-pharmacological methods. The purpose of the study was to offer nurses information on the non-pharmacological pain management of children in different cultures. This was attempted in order to develop multicultural pain management of paediatric patients based on research literature.

The method used in the thesis was a literature review. Data was searched and obtained from numerous article databases, such as Academic Search Elite, Cinahl, Cochrane Library, Elsevier ScienceDirect, Medic and PubMed. Due to the lack of relevant articles, a complementary search was conducted in the Academic Search Elite and Cinahl databases. A total of ten articles were reviewed. Thematic analysis was used to analyse the data.

A variety of non-pharmacological methods are used regardless of the cultural background. Children demand and receive fairly similar non-pharmacological interventions with pain. More variation was found when considering the impact of the nurses' and parents' cultural background on the extent and the methods used in non-pharmacological pain management. More educated, older and experienced nurses were more likely to use non-pharmacological methods to a greater extent.

Keywords (subjects)

Non-pharmacological, pain, pain management, children, culture

Miscellanous

jamk.fi

Kuvailulehti

Tekijä(t)	Julkaisun laji	Päivämäärä
Peltomäki, Roosa	Opinnäytetyö, AMK	16.11.2015
	Sivumäärä 54	Julkaisun kieli Englanti
		Verkkojulkaisulupa myönnetty: x

Työn nimi
Kulttuuri lasten ei lääkinnällisessä kivunhoidossa
Kirjallisuuskatsaus

Tutkinto-ohjelma
Degree Programme in Nursing, Bachelor of Health Care

Työn ohjaaja(t)
Ratinen, Pirkko & Sinivuo, Riikka

Toimeksiantaja(t)
-

Tiivistelmä

Suomi monikulttuuristuu jatkuvasti. Kivun hoito on elintärkeä osa hoitotyötä, ja ei-lääkinnällisen kivunhoidon osuus aliarvioidaan helposti. Lasten kivun hoito vaatii edelleen kehitystä ja kulttuurin huomiointi tulisi ottaa tähän prosessiin mukaan.

Opinnäytteen tavoitteena oli tutkia kulttuurin vaikutusta alle 18-vuotiaiden lasten ei-lääkinnällisessä kivun hoidossa ja hoitajien taustan vaikutusta heidän käyttämiinsä ei-lääkinnällisiin hoitomuotoihin. Opinnäytteen tarkoitus oli tarjota hoitajille informaatiota eri kulttuuritaustaisten lasten ei-lääkinnällisestä kivun hoidosta. Tämän tarkoituksena oli kehittää lapsipotilaiden monikulttuurista kivun hoitoa tutkittuun tietoon perustuen.

Käytetty tutkimusmenetelmä oli kirjallisuuskatsaus. Aineistoa etsittiin ja kerättiin useista eri artikkelitietokannoista mukaan lukien Academic Search Elite, Cinahl, Cochrane Library, Elsevier ScienceDirect, Medic ja PubMed. Sopivien artikkelien vähäisen määrän takia täydentävä haku suoritettiin Academic Search Elite- ja Cinahl-tietokantoihin. Kaikkiaan kymmenen artikkelia valittiin katsaukseen. Teemoittelua käytettiin analysointi metodina.

Laajaa kirjoa ei lääkinnällisiä keinoja käytetään kulttuuritaustasta huolimatta. Lapset vaativat ja saavat melko samanlaista ei lääkinnällistä kivunhoitoa. Enemmän vaihtelua löydettiin hoitajien ja vanhempien taustojen vaikutuksesta erilaisten ei lääkinnällisten keinojen käytössä. Koulutetummat, vanhemmat ja kokeneemmat hoitajat käyttävät muita todennäköisemmin useampia ei lääkinnällisiä keinoja.

Avainsanat (asiasanat)
ei-lääkinnällinen, kipu, kivunhoito, lapset, kulttuuri

Muut tiedot

Contents

Tables

Figures

1 INTRODUCTION

The world and Finland as well is constantly becoming more multicultural. Ever since 2000 the immigration has increased continuously. In the 1990s the immigrant amounts were around 13 000 in a year, as in the early 2010s the immigrant amounts were around 30 000 per year. (Väestöntutkimuslaitos.) Therefore it is important to have the knowledge of cultural aspects in differing care situations. The pain relief is a a right of children as well and therefore important to acknowledge. Nurses are being responsible of undermanaged pain of children, even though many pharmacological and non-pharmacological interventions exist (Olmstead, Scott, Mayan, Koop & Reid 2014, 163). A highly skillful and effective team will more likely achieve successful pain management (Baulch 2010, 35). The skills should include the knowledge of cultural effects on pain.

The biases of nurses can influence the pain assessment. Nurses and parents as well are at risk of overestimating the effect of analgesics and underestimating the pain of the child. Nurses should receive education in pain management and the importance of assessment and evaluation should be enhanced. (Baulch 2010, 39.) As the nurses are already in risk of underestimating child's pain, they are also in risk of conducting inefficient pain management to patients with differing cultural background (Briggs 2008, 469). It is essential to raise awareness of cultural competence in area of pain management and its importance in pediatric nursing.

The aim of the study is to find out the cultural effects on the non-pharmacological pain management of children under 18 years old and the impact of nurses' backgrounds on their use of non-pharmacological methods. The purpose of the study is to offer nurses information on the non-pharmacological pain management of children in different cultures. This is attempted in order to develop multicultural pain management of paediatric patients based on research literature.

2 CULTURE AND HEALTH

2.1 Defining Culture

Culture is a complicated subject to define. Culture is more than nationality or language (Howard, Andrade & Byrd 2001, 39). O'Hagan (1999, 270) sees Taylor's definition of culture as the best known one. It defines that "Culture or civilization is that complex whole which includes knowledge, beliefs, art, morals, law, custom and any other capabilities and habits acquired by man as a member of society." This definition has been detailed by the additions made by Helman "Culture is a set of guidelines (both explicit and implicit) which individuals inherit as members of a particular society, and which tell them how to view the world, how to experience it emotionally, and how to behave in it in relation to other people, to supernatural forces or Gods, and to the natural environment". What must be kept in mind is that only few societies are developed on only one culture. (O'Hagan 1999, 270.) Culture consists of origins, physical appearance, language, family structure, religious beliefs, politics, food, art, music, literature, attitudes towards the body, gender roles, clothing, education (O'Hagan 1999, 272).

O'Hagan's own definition of culture is stated as a distinctive way of life of the group an individual belongs to, for instance a race or nationality. It is consisted of values, ideas and perceptions that have evolved over time and these constitute into the way of life of the individual. These develop and personate in from environment of upbringing, language, institutions, social relationships, education, religion, customs, dress and diet and use of objects. These are all embraced by culture and they can be seen culturally significant. (O'Hagan 1999, 273.)

Culture is seen as an important factor in health care, affecting on diagnosis, treatment and illness. The researches have shown medical differences between culturally distinct groups, such as vulnerability to some diseases and ineffectiveness

to treatments. The definition of culture in medicine follows the definitions explained earlier. The complete background of individual's societies, and those beliefs need to be considered when treating a patient, because this affects how the person thinks about his own illness and how he thinks it should be treated. (O'Hagan 1999, 272.) The health care professional have their own culture. They are taught to behave and think in certain ways. They are trained to make certain assumptions. Cross-cultural experiences can help understand health care education in different areas. These can help recognize that cultural world is as complex as the hospital world, and the questions made or not made are based on professional's assumptions. (Howard et al. 2001, 47-48.)

The professionals need to be aware of cultural differences, be culturally sensitive (O'Hagan 1999, 273). In family care, health care professionals need to appreciate the cultural background of children and their families (O'Hagan 1999, 276). The culture and cultural identity is not seen significant enough in child care and it is ignored and misunderstood or misinterpreted (O'Hagan 1999, 278). The child care is determined by the child's culture. Culture is crucial in child's development, everyone's behavior is culturally based. There can be cultural conflicts between children and parents, especially during adolescence. (O'Hagan 1999, 277.) Campinha-Bacote reminds that the variation inside an ethnic group is greater than between ethnic groups (Campinha-Bacote 2002, 181).

2.2 Cultural Competency

Cultural competency has a long history, but gets a growing attention. Both the health care recipients and the providers are more diverse in their background. The cultural competence is defined as follows: "Cultural and linguistic competence is a set of congruent behaviors, attitudes, and policies that come together in a system, agency, or among professionals that enables effective work in cross cultural situations." (Howard et al. 2001, 37.) In here the culture refers as already stated to integrated

patterns of human behavior. Competence refers to a capacity of individuals and organizations to function correctly in the context of cultural beliefs, behaviors and needs a consumer might have. (Howard et al. 2001, 37.)

Cultural competency needs language skills. The nurse must not know all languages, as it is impossible, but to know to search for the correct interpret. One, who knows both languages, the recipient's and the contributor's, and is specialized in the hospital settings, knowing the relationship between physicians and clients. (Howard et al. 2001, 46-47.) The health care providers' cultural competence will lead to more effective and satisfied service providers, and the patients are more likely to commit to the treatment. Compassion within a cultural framework. (Howard et al. 2001, 47-48.)

Campinha-Bacote sees cultural competence as an ongoing process. Her developed model can be used as a framework for developing and implementing culturally aware care. Cultural competence is not an event but a process. It constructs of five parts: cultural awareness, cultural knowledge, cultural skill, cultural encounters and cultural desire. There is a direct relationship between the level of cultural competence of a health care professional and his ability to perform in a culturally aware way. Cultural competence is essential for competent care of culturally and ethnically diverse patients. (Campinha-Bacote 2002, 181.)

3 CHILD

3.1 Defining child

According to the United Nations Children's rights declaration a child is a person under 18 years old (YK:n yleissopimus lasten oikeuksista, 7). The child develops in physical, motoric, cognitive and psychosocial areas. These areas are in contact and

when one part develops, the other areas have changes as well. (Storvik-Sydänmaa, Talvensaari, Kaisvuo & Uotila 2012, 10.)

Children are classified into different developmental groups according to their age. Children under the age of 28 days are described as neonates. After that the child is called an infant, until the age of one year. Thereafter the child is a toddler until three years of age, preschooler from three to six years of age, school aged from 7 to 12 years and adolescent from 12 to 18 years. (Storvik-Sydänmaa et al. 2012, 11.) Childhood can also be divided into infancy, from birth to 1 year, early childhood, from 1 to 6 years, middle childhood, from 6 to 11 or 12 years and later childhood from 11 to 19 years (Hockenberry 2005, 81).

Piaget's theory of cognitive development is thought to be the best known on that area (Hockenberry 2005, 88). According to some researches child's understanding of pain and ability to describe it follows their cognitive development according to Piaget's theory, and in light of other studies, it does not (Esteve & Marquina-Aponte 2012, 441-442). This is the reason why the thesis introduces Piaget's cognitive development. Piaget suggest that intelligence enables individuals to adapt to the environment (Hockenberry 2005, 88). The age and maturational ability influence greatly on the child's view of life. When nurtured, child's intelligence will mature naturally. (Ball & Bindler 2008, 66.)

3.2 Cognitive development of a child

The fastest time of growth and development is during the infancy (Ball & Bindler 2008, 81). The brain cells maturate and this leads to development of a variety of functions (Ball & Bindler 2008, 82, 85). The psychological developments' main goal is to establish trust with caregivers, adults and other children. This leads to child becoming comfortable with other individuals outside the close family circle. The personality and temperament can already be seen, the child is born with a tendency

that leads the reactions. The temperature remains the same through childhood, but the reactions can be adapted according to the environment. This is an important factor in nursing, as the nurse can introduce ways to adjust the parents to child's temperament. (Ball & Bindler 2008, 86.)

An infant is unaware of the effects of an illness (Ball & Bindler 2008, 407). According to Piaget's theory, the child is at the sensorimotor stage. The world is learned by the senses and their motor actions. (Ball & Bindler 2008, 66.) Neonates and small children cry from pain (Baulch 2010, 36). The sensorimotor stage is ruled by simple learning that occurs from sensations. This progresses from simple repetitions to imitative behavior. Problem solving is based on trial and error. Cause and effect are learned via objects, such as certain movement makes noise in a toy and the permanence of them becomes clear towards the end stage. The child is experimental, and starts having a sense of self and can separate himself from the environment and caregivers and is able to use language and represent thoughts. (Hockenberry 2005, 89.)

Toddler displays independence and negativism, being proud of the accomplishments he achieves (Ball & Bindler 2008, 87). The toddler that is feeling safe in a trusting relationship, is learning to separate himself from the caregivers. (Ball & Bindler 2008, 89.) Preschoolers are in a new stage of initiative and independent time. Many important social skills are learned in day care and the language skills are developed so that the child understands and speaks well. (Ball & Bindler 2008, 90.)

The preoperational stage is from ages 2 to 7, so the age of toddlers and preschoolers. The early stage is characterized by egocentrism, an inability to put themselves in another person's place. The thoughts are concrete and generalizations cannot be made. Towards the end stage, the reasoning is intuitive, and transductive. Two things cause each other because they occur together, this can lead to child thinking that a sickness is caused by something he has done, for example a bad behavior (Ball &

Bindler 2008, 68.) The understanding of time and space is starting to develop (Hockenberry 2005, 89).

4 to 6 year olds are able to describe their earlier pain experience, those mainly being physical injuries or unpleasant body sensations. They see that the pain occurs spontaneously and see almost no psychological causes. They saw pain caused by injuries. (Baulch 2010, 36; Esteve & Marquina-Aponte 2012, 448.) During this stage the child thinks with words, but the logic is not yet developed. Cause and effect relationship is often unrealistic, such as thoughts make things happen. Animism (giving life to objects that move, make sound) occurs as well. (Ball & Bindler 2008, 68.) A toddler and a preschooler begin to understand illness, but not what causes it. He can understand illness as a punishment of a bad behavior, the events occurred before falling ill can be seen as the cause of the illness. (Ball & Bindler 2008, 407.)

School aged child needs to have useful work that is meaningful for them. This is most likely carried out with peers, they are seen as important factor in life. The achievements got from these experiences develop child's self-esteem and prevent sense of inferiority and poor self-worth. (Ball & Bindler 2008, 95.) School aged child knows how germs spread, and has an understanding of why an illness occurs (Ball & Bindler 2008, 407).

Concrete operational stage is from age 7 to 11 years. The understanding develops more accurate on cause and effect relationship. Reasoning can be done when the objects are clear. The concept of conservation is learned. (Ball & Bindler 2008, 68.) The thought is more logical and coherent (Hockenberry 2005, 89). Problems are solved in a systematic way, abstract thinking is still impossible (Hockenberry 2005, 89). Thinking is more socialized and the child can put himself in the position of others (Hockenberry 2005, 89). 7 to 11 year olds described pain as a sensation in one part of the body (Esteve & Marquina-Aponte 2012, 448).

Formal operational stage is developing from 11 years to adulthood. This leads to acquired fully intellectual thought making it possible to think in an abstractive manner and consider different alternatives and outcomes. (Ball & Bindler 2008, 68; Hockenberry 2005, 89.) An adolescent is aware of the psychological and physiological and behavioral reasons for an injury or illness, understands that symptoms can be related to body organs and that many processes of body can be affected. Adolescent has concerns on illnesses effects on body image. (Ball & Bindler 2008, 407.) 12 to 14 year olds can see pain due to psychological reasons (Esteve & Marquina-Aponte 2012, 448).

4 PAIN

4.1 Defining pain

International Association for the Study of Pain (IASP) defines pain as "an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage" (IASP Taxonomy Working Group 2012). Pain is thought to be a signal of danger, a defensive mechanism of the body. This fits the description of acute pain, but does not explain chronic pain, which can be obtained even without an active threat to organisms. Chronic and acute pain are seen as separate conditions. (Bussone, Grazzi & Panerai 2012, 98.)

The pain is a sensation that results of several modulatory physical and affective factors that are combined to perception (Bussone et al. 2012, 98). Last decades studies have shown that the pain reaction pathways are in touch with the areas of brain that are responsible of homeostasis, consciousness and behavior, fear and emotional responses. (Bussone et al. 2012, 99.) Speculations are made that chronic pain could be an emotional response to the disruption of homeostasis (Bussone et al. 2012, 100).

Treatment of pain can fail if the biopsychological approaches are not considered (Bussone et al. 2012, 100). Chronic pain is not acute pain that lasts for a long time. It is subjective, multidimensional and biopsychological syndrome. This can be recognized by physical, psychological and behavioral reactions and suffering is related to it. The chronic pain does not have a known purpose, nor does it have single explanation of symptoms. The biological, psychological and social aspects of chronic pain are inseparable. (Breen 2002, 56.)

The pain stimuli and the subjective feeling of pain have a series of complex electric and chemical reactions in between. Those are divided into four parts: transduction, transmission, modulation and perception. In transduction, the pain stimuli leads to electrochemical activation of nerve endings, the formation of action potential. In transmission the impulse moves along nerve cells to the central nervous system. Modulation is the alteration of the pain message in the nervous system. Perception is the subjective feeling that is caused by the activation of neurons that transmit pain. (Kalso, Haanpää & Vainio 2009, 76.)

Pain has multiple classification systems, most often divided into acute and chronic pain. Chronic pain is pain that lasts longer than the normal healing of that type of tissue. Commonly pain classifications are associated with the location of the pain, having an anatomical view. The cause of the pain also classifies it, being described as cancer or postoperative pain. (Kalso et al. 2009, 150.)

Pain can be also classified based on the mechanism of the pain. Nociceptive pain is caused by stimulus that can potentially damage tissues. In this situation the pain system itself is healthy and the pain comes from the tissue and its surroundings. Visceral pain is nociceptive pain that is caused by activated autonomous nerve cell's nerve filaments that innervates the viscera. In neuropathic pain, the pain mechanism is causing the pain. Nerve cells are sensitized to react on a stimulus that usually does not cause pain. Idiopathic pain is pain that cannot be explained with the tissue or

nerve damage. (Kalso et al. 2009, 155-156.) Psychological pain is defined by Meerwijk & Weiss as “a lasting, unsustainable, and unpleasant feeling resulting from negative appraisal of an inability or deficiency of the self” (Meerwijk & Shattell 2012, 263). This is seen as an insufficient to cover all parts of psychological pain and it applies as much to children as to adults. (Meerwijk & Shattell 2012, 263.)

4.2 Pain and Culture

In whatever country or ethnic group, the health care professional needs to consider the experience of pain, the effect on quality of life, and the patient and his subgroup’s perceptions of pain and suffering (Kalso et al. 2009, 32). Kalso and others (2009) see that the psychological, social and cultural aspects of pain are forgotten and therefore the treatment of pain can be insufficient (Kalso et al. 2009, 28). It must be acknowledged that a patient who comes to a clinic with pain, brings with him the earlier experiences and knowledge that has been influenced by various factors, including culture (Spencer & Burke 2011, 12).

A false assumption is, that individuals always blend into the new culture (Spencer & Burke 2011, 12). The cultural differences of a client and a health care professional can lead to misunderstandings in the care. The cultural background of a patient should be always considered and in a problematic situation, the culture might give sensible reasons to the behavior of the patient. The possible misunderstandings between cultures might come from different beliefs in medication, different ways of communication, different time perception. (Kalso et al. 2009, 32.)

The behavior, thoughts and reasons towards pain differs between cultures. Every patient within the same culture, does not necessarily act in a similar way, and that should not be assumed (Spencer & Burke 2011, 13). Culture effects on the pain perceptions and frequency and severity, threshold and tolerance of pain (Batista et al. 2012, 99). These reactions are learned during childhood, what is appropriate to

one's own culture and they might not correlate with the amount of pain. (Batista et al. 2012, 106; Kalso et al. 2009, 30-32.)

Some cultures see the pain and diseases as a result of relationships (Kalso et al. 2009, 28). The pain can be viewed as a will of God (Kalso et al. 2009, 32). Also the health can be seen as a balance of hot and cold, or balance of fluids and illnesses are caused by their imbalance (Kalso et al. 2009, 34). Male patients of some cultures may be reluctant to express pain to female care givers (Spencer & Burke 2011, 13). Western medical target of pain management is the removal of pain (Kalso et al. 2009, 30). The differences between contemplations in analgesia in cultures effects on the pain management and its effectiveness as well (Spencer & Burke 2011, 13).

Kalso and others (2009) state that in experimental pain research there is seen no difference in perception or tolerance of pain between different ethnic groups. However, the culture background and the research settings can effect on the tolerance and expression of pain. The painful rituals of some cultures make people wonder if the representatives of those cultures feel less pain than individuals from other cultures. (Kalso et al. 2009, 30-31.) Briggs (2008) presents that some studies conducted in controlled setting have had differences between the pain experiences of participants with different cultural backgrounds. These studies are at the same time criticized by her, as the study setting has not considered all the variables affecting pain experience. Researches done in clinical setting show that amount of pain medications received varies between ethnicity, as African-Americans and Hispanic receive less pain medication than native Americans. There is no knowledge on why the difference exists, is it due to medication givers attitudes or the patients request for medication. These studies also have limitations, as they are often conducted with small sample and in North America. (Briggs 2008, 469.)

There are structural obstacles in health care for a good pain management. One of these is a difficulty in communication between a health care professional and a

patient. According to culture, people have reflections of complaining of pain, is it suitable or not. Minority groups of people have less chances on getting to specialized care, such as pain policlinics, and their pain is measured and registered less and inadequate pain management is common. (Kalso et al. 2009, 34.)

4.3 Child's pain

The pain of children and especially neonates is difficult to assess, interpret and understand. The pain traces are developed in the weeks 20.-24. but the inhibitory system is developed later on. The stress reaction to pain can be lethal to neonates. The pain system of fetuses and neonates is developing and premature babies are unable to experience the pain in similar way to adults. The traces of any sensation grow stronger every time the same sensation is felt, so continuous pain or tissue damage should be avoided with neonates. This is shown to increase the pain reaction when pain is present. (Baulch 2010, 35-36; Kalso et al. 2009, 441, 445.)

Neonate neuropathic pain is associated with the higher concentration of receptors. This can give an argue to that neonates feel more pain than children or adults and if left untreated, it can lead to lower threshold to pain in later life. Then a child who does not have those experiences would feel less pain than a child with those experiences. (Baulch 2010, 36.)

Kalso and others (2009) see that usually the pain of child is acute, caused by for instance inflammations, traumas, post-operative pain, tooth ache and vaccinations. They see that child's chronic pain is more rarely neuropathic than with adults and is associated with the long term diseases. In their opinion the pain of long term diseases is not typically chronic pain, but pain from hospital visits and painful procedures. (Kalso et al. 2009, 443.) Bauch (2010) gives a differing opinion in that children's chronic pain is more common than has been thought and that it is caused by child being exposed to repeated surgeries and procedures and developmental

neuropathic conditions (Bauch 2010, 36). He states also that children as well can have chronic and neuropathic pain (Bauch 2010, 35). Wahlstrom expresses the importance of not separating the mind and body when discussed about child's chronic pain (Wahlstrom 2004, 135).

The painful procedures and not understanding the reasons to those and the fear of pain combines together to form pain, anxiety and fear. This means that a health care professional needs to be honest and emphatic towards the child. The best means of treating pain is pharmacological therapy combined with non-pharmacological methods. The treatment of pain needs to be addressed already in the beginning with diagnostic ways. (Kalso et al. 2009, 443.)

A child watches reactions of other persons in pain and learns from those (Briggs 2008, 468). A child with acute pain is likely to behave intensively, have fear and anxiety. A child with chronic pain is likely to show apathy, despair and low expectations. This can be misread as depression. One does not need to act as if they have pain to prove that they are suffering from pain. Believing that a child has pain and expressing it can make child willing to accept it. (Wahlstrom 2004, 136.) The pain is mirrored to the earlier experiences of person (Baulch 2010, 36; Kalso et al. 2009, 443). A younger child sees the pain as the most painful ever or just as mild pain, but the older the child gets, the more there will be pain "in between", as in milder and more severe variations of pain. Young and severely ill children need to also be assessed by the caregiver. The symptoms or behavior, posture, color and moisture of skin combined will tell something about the pain. (Kalso et al. 2009, 443.)

The best way to improve pain management of children is the evaluation and recording of the pain. The pain is a subjective feeling with children likesome to adults, and it can be assessed with the narrative of the child, the behavior of him and the physiological changes. These are affected by the age, gender, cognitive and linguistic development, earlier pain experiences, learning and the mood of the child.

The absence of parents, environment and understanding of the illness and procedures done effects to the experience of child's pain. There are multiple pain assessment tools for different aged children. The best way to assess pain is the patient's own feelings of pain and how he interprets him. This is problematic when the linguistics is a barrier, when a child is unable to speak due to the age development or developmental diseases. (Baulch 2010, 36; Esteve & Marquina-Aponte 2012, 442; Kalso et al. 2009, 442.)

The importance of child's personal experiences in his understanding of pain has been highlighted as well (Esteve & Marquina-Aponte 2012, 442). Children suffer more from pain than adults because of their developmental state. The pain is a sign of agony in the body, whether it is due to injury, illness or mind. A child remembers a painful experience and the fear of pain can limit life. The support from adults helps children confront pain. A traumatic experience affects to child's development and can lead to behavioral symptoms such as anxiety, fears and depression and regression of development at own age level. The repetitive and continuous pain leads to changes in pain reactions in later life. The pain experiences during childhood predisposes to adulthood chronic pain. A young child reacts with his body, when he does not have the means to cope. Children have psychosomatic symptoms, stomach ache, headache, that leads to visits to physicians. Parents' perceptions of pain affect to child's pain experiences and what is approved. (Kalso et al. 2009, 464-466.)

The best treatment of pain with children is to avoid the pain in the first hand. If this is not possible, the basis of treatment is to lower the pain, anxiety, fear and helplessness. This gives the child feelings of safety and control of own life. The child will be more compliant to care and co-operation. With chronic pain is important to manage and improve the performance in life and to find coping skills with the pain. Not only the child, but the parent should be considered as well, because the open and reliable relationship is a basis for successful pain management. If pain exists in

procedures one needs to be honest about it and the preparation to those helps child manage better. (Kalso et al. 2009, 466-467.)

Children have the right to optimal alleviation of pain (Olmstead et al. 2014, 162). Pain relief is a priority in care and should be truism for health care professionals when nursing a child with illness or injury (Baulch 2010, 35). The parents are responsible of the pain management in policlinic care and postoperative day surgery care. The adequate information need to be provided to them. (Kalso et al. 2009, 445.) Nurses are responsible to educate parents show that there is now neglect or suffering due to the lack of knowledge of pain managements (Baulch 2010, 39). Children's coping methods to pain become increasingly complex and flexible with the growing age (Esteve & Marquina-Aponte 2012, 442). This means that older children are more likely to for example engage in cognitive distraction of pain (Esteve & Marquina-Aponte 2012, 442).

The definition of pain having a physical injury versus having an emotional basis changed according to age. Until the age of 14, the pain was defined more to be cause by emotions than physical injury. The older a child gets the better he understands that pain can occur in the entire body. The younger a child is, the less he sees pain as an educative experience. Adolescents express pain non verbally unlike younger children and do not demand pain relief and asked for their friends help in emotional support to relieve pain. Youngest children sought help from parents. (Esteve & Marquina-Aponte 2012, 448.)

4.4 Non-pharmacological pain management

Non-pharmacological pain management means pain interrupted in not pharmacological ways. This gives a variety of interventions, loosely divided into physical, psychological and clinical methods. These do not cover all the non-pharmacological interventions, as there can be also for instance cultural

interventions. (Ballentyne, 2010, 1; Pölkki, Vehviläinen-Julkunen & Pietilä 2001, 484.) The non-pharmacological interventions are easily shadowed by pharmacological interventions, though there is plenty of evidence in literature of the effectiveness of non-pharmacological interventions. (Ballentyne 2010, 1.) Some examples on non-pharmacological interventions are acupuncture, massage, relaxation and education (Ballentyne 2010, 2). One of the most successful non-pharmacological intervention of children is distraction (Olmstead et al. 2014, 163).

Pharmacological interventions have commonly a precise mechanism of action, they have been designed to intervene at a specific point in the pain reaction. Non-pharmacological pain interventions mechanism of action is not fully understood. The medicinal pain management is given more continuously than the non-pharmacological pain management, which is more imprecise and episodic and therefore it is harder to identify its benefits. Pharmacological interventions are complex, a combined effect that works through known, and unknown, mechanisms. Complex interventions have several components. (Ballentyne 2010, 2.) Clinical outcomes are subjective in non-pharmacological pain management (Ballentyne 2010, 3). The non-pharmacological pain management, holding, rubbing, has been shown to decrease the stress in for instance blood sample procedures with neonates (Kalso et al. 2009, 446).

Physical strategies used as non-pharmacological pain relieving methods include massage, transcutaneous nerve stimulation, heat and cold applications, positioning and rubbing (Pölkki et al. 2001, 484). Cognitive-behavioral methods include imagery, hypnosis, distraction, relaxation, breathing technique and giving preparatory information (Kalso et al. 2009, 457, 463; Pölkki et al. 2001, 484).

Non-pharmacological interventions are a valuable part of child's pain management (Baulch 2010, 39). Oral sucrose is commonly used with procedural pain of neonates, with a good response. The older children may be distracted with music or TV, or they

can be taught breathing techniques. Hypnosis has also been shown to reduce the distress in procedural pain. The most successful pain management combines pharmacological and non-pharmacological components. (Baulch 2010, 39.) Non-pharmacological pain intervention methods taught to children, will help them feel more in control of their pain (Lux, Algren & Algren 1999, 42; Pölkki et al. 2001, 484). Lower anxiety levels enhance coping and reduce anxiety. (Lux et al. 1999, 42.)

5 AIM AND PURPOSE OF THE STUDY

The aim of the study is to find out the cultural effects on the non-pharmacological pain management of children under 18 years old and the impact of nurses' backgrounds on their use of non-pharmacological methods. The purpose of the study is to offer nurses information on the non-pharmacological pain management of children in different cultures. This is attempted in order to develop multicultural pain management of paediatric patients based on research literature.

Research questions:

- How does culture effect on the non-pharmacological pain management of children under 18 years old?
- Are there influences of nurses' background on their use of non-pharmacological pain management methods?

6 METHODS AND IMPLEMENTATION OF THE STUDY

6.1 Literature review

Literature review is a comprehensive study and interpretation of literature that is related to a specific topic (Aveyard 2010, 5-6; Cronin, Ryan & Coughlan 2008, 38; Saks & Allsop 2007, 33). Literature reviews try to identify the gaps in the information on the specific topic (Saks & Allsop 2007, 33). The study has research questions that

the used literature is aiming to answer and when these answers are collected together, new insight is given on the subject (Aveyard 2010, 5-6). Literature reviews summarize literature available in one topic. This leads to quick access on information related to that topic. This is important for the health care professionals, who have to educate themselves constantly but have a limited time to do so. (Aveyard 2010, 6.) For the literature review to be reliable, must is be undertaken in comprehensive, rigorous and systematic way. It must have clear search and selection strategy. (Aveyard 2010, 9-10; Cronin et al. 2008, 38.)

Literature reviews can be divided into narrative and systematic literature reviews. Narrative reviews are aiming on identifying key concepts in certain phenomena and the multiple theoretical approaches to them. The systematic review aims to contribute to the clinical practices of a certain phenomenon. (Saks & Allsop 2007, 33.) Undergraduate and postgraduate students are not expected to achieve a systematic review, but they are expected to apply the general principles and guidelines (Aveyard 2010, 16).

The narrative literature review is likely to be influenced by the researcher's background. The conceptual and theoretical approaches are explained mirrored to their own experiences. (Saks & Allsop 2007, 34.) There is a strict protocol that must be followed when conducting a systematic review (Gerrish & Lacey 2010, 289). In systematic literature review there is a frame for articles exclusion and inclusion criteria and a formulated research question (Cronin et al. 2008, 39). It strives to find all the published and unpublished article material concerning the researcher's topic (Aveyard 2010, 14-15; Cronin et al. 2008, 39). This literature review followed basic concepts of systematic review, trying to achieve the better reliability than narrative literature review, but not following the strict protocol, as earlier said it would be too much to expect from an unexperienced researcher.

A systematic approach is important in order to retrieve all the available topic related information (Aveyard 2010, 13). Doing a literature review in systematic manner, does not mean the researcher is applying the methods of Cochrane Collaboration, but following the principles (Aveyard 2010, 15). The literature review process consists of developing a research question, research designing and then presenting the results and discussion of those (Aveyard 2010, 22). A research protocol is written and during this the outline of purpose and methods are done, the literature is searched systematically, relevant studies are selected and their quality is assessed, key information is extracted and it is summarized interpreted and presented (Gerrish & Lacey 2010, 288).

A literature review as a research method was chosen due to specific reasons. The goal of this study is to find out culture's effects on non-pharmacological pain management of children. If the study had been done in one country setting, biases and misinformation might occur. Much information would be left acknowledged. Conducting a research including participants from various countries is time consuming and challenging, which makes it unsuitable for a Bachelor's Thesis.

6.2 Literature search

Inclusion criteria is logical to the research question, and covers all restrictions such as language and study design (Gerrish & Lacey 2010, 289). Any exclusion criteria must be clearly stated and reasoned (Gerrish & Lacey 2010, 289). In the following are the inclusion criteria for the study. The criteria was selected on attempt to find current, relevant and high quality research material. Lack of financial resources and knowledge in languages limited the search. The excluded articles were the ones not following inclusion criteria.

Table 1. Inclusion criteria

Inclusion criteria
Answers the research questions
Study in English or Finnish
Scientific publication
Peer reviewed
Free full text access
Studies of children under 18 years old

The data for the literature review was searched from numerous article databases of Academic Search Elite, Cinahl, Cochrane Library, Elsevier ScienceDirect, Medic and PubMed. Manual search was done through the reference lists of promising studies, and subjects. Different combinations of search key words were tested prior to the data search. The chosen key words were child, pain and culture/ethnic. Boolean search was used. Table 2 demonstrates the data search. The articles were first glanced through the topic and abstract and from the promising topics and abstracts the full text was read. The final decision was made based on the predetermined inclusion criteria.

Table 2. Data search

Database	***Key terms***	***Results***	***Chosen on the basis of title***	***Chosen on the basis of abstract***	***Relevant studies***
Academic Search Elite	child* AND pain* AND cultur*	225	21	2	0

Academic Search Elite	child* AND pain* AND ethnic*	72	8	8	0
Cinahl	child* AND pain* AND cultur*	111	34	5	3
Cinahl	child* AND pain* AND ethnic*	40	6	1	0
Cochrane Library	child* AND pain* AND cultur*	598	4	3	0
Cochrane Library	child* AND pain* AND ethnic*	116	3	3	0
Elsevier ScienceDirect	pain* and cultur* topic: child	115	0	0	0
Medic	lapsi AND kipu	264	3	3	0
PubMed	child* AND pain* AND cultur*	426	20	3	1

Duplicates are excluded from the table.

The data search was conducted during October 2015. Data search yielded four relevant scientific articles. A complementary data search was done after finding out the lack of relevant articles with the initial search, this is demonstrated in table 3. Altogether ten articles were reviewed. The studies reviewed were done in six different countries, three in the United States, two in Singapore, and one in each China, Morocco, Thailand and Turkey. This gives a small spectrum to the whole world, demanding more investigation to other countries as well. All the studies have been conducted in the 21st century, giving fairly new information on the situation. In

appendix a table, presents the chosen articles by their authors, titles, publishing times, aims, participants, data collection methods, analysis methods and key results.

Table 3. Complementary data search

Database	***Key terms***	***Results***	***Chosen on the basis of title***	***Chosen on the basis of abstract***	***Relevant studies***
Academic Search Elite	non pharmacologic* child* pain*	37	37	12	3
Academic Search Elite	nonpharmacologic* child* pain*	29	29	0	0
Cinahl	non pharmacologic* / child* pain*	34	34	8	1
Cinahl	nonpharmacologic* child* pain*	36	36	2	2

Duplicates excluded from the table

6.3 Data analysis

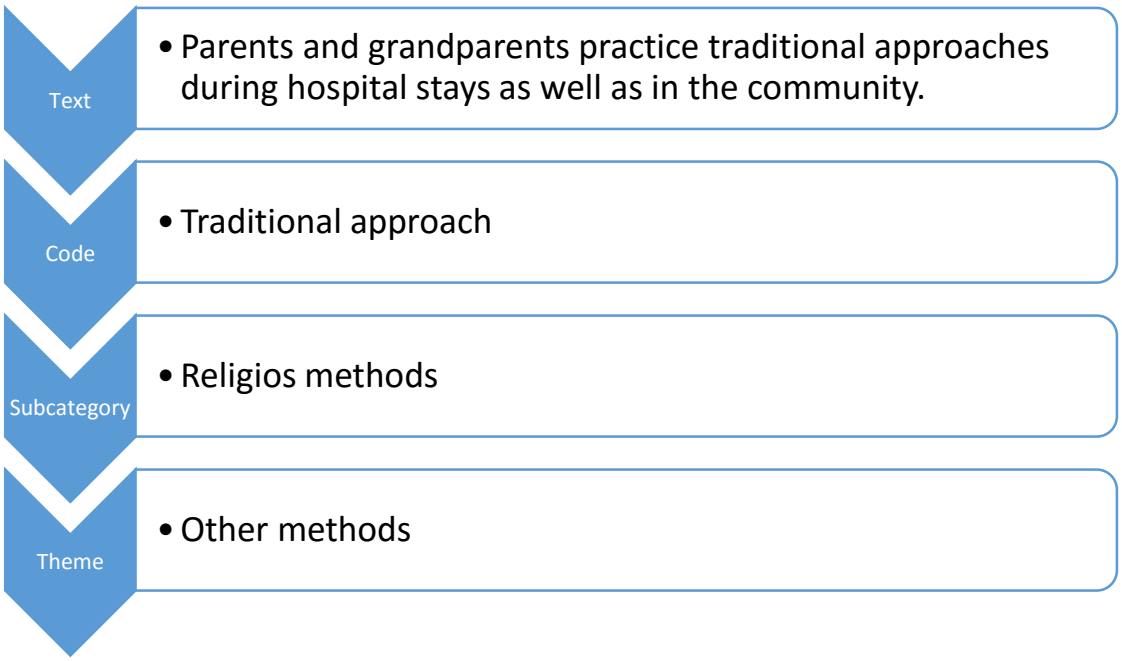
The aim of data analysis is to bring together the information of the chosen articles and summarize and interpret the results gathered. The meaning of this is to provide information that could not be perceived from the single original articles, but from the sum of them. (Aveyard 2010, 124, 128) Thematic analysis is the most used analysis method in qualitative research (Liamputtong 2013, 375-376). Themes are developed by assigning codes, which are summarizing the main point of the section undergone. These codes are found by careful reading and exploring of the chosen articles. The coding leads to developing themes by grouping the codes together and in the end, the codes have been divided into different themes and the themes have been named. Next the themes are explored, if the theme name fits all the codes, there are no sections left not coded. The coding is rechecked multiple times to ensure accuracy. (Aveyard 2010, 129-130; Kankkunen & Vehviläinen-Julkunen 2013, 164; Liamputtong 2013, 375-376.)

The thematic analysis consists of the content of the stories, organizing, labeling and grouping related data together in themes. It also consists of looking for variations and relations between the themes (Saks & Allsop 2007, 124). This tells what the studies say, rather than how the information is given, from whom, and to whom the information is meant. It is thought that this undervalues the context from which the data is collected and what might be needed to understand the data. (Gerrish & Lacey 2010, 195.)

The themes are found by first reading through. Impressions and thoughts are written up and initial codes are generated. Themes are searched by collating the chosen codes. Then all data concerning these themes is collected, and the themes are revised to make sure they fit the codes. Lastly themes are named and generated. (Liamputtong 2013, 376; Gerrish & Lacey 2010, 432; Saks & Allsop 2007, 124.)

Coding means rigorous and systematic analysis of data that results to concepts and categories that are found from the words within the data. This then culminates into development of models, exploratory themes. The codes founded are usually different words with same meaning. Categorizing data can be performed in multiple ways, preference of the researches. Whether it is cut and paste in traditional or computerized way, or highlighting words from the texts. (Saks & Allsop 2007, 80-81) The data analysis of this study begun with careful reading through the articles and writing down the arising themes. As reading through the articles words concerning the research questions were highlighted. These developed to be the codes made to arrange and create the themes. The methods inside themes were arranged into subcategories, shown in the results. Figure 1 is to represent the coding and theming method.

Figure 1. Process of data analysis



7 RESULTS

In the following table the results of the analysis are presented by their themes and subcategories. The themes include physical methods, cognitive-behavioral methods, emotional support methods, other methods and background factors. These are presented more carefully in the text following the table.

Table 4. Data analysis results

	How does culture effect on non-pharmacological pain management of children under 18 years old?				*How does background effect on non-pharmacological pain management?*
	Physical methods	**Cognitive-behavioral methods**	**Emotional support**	**Other methods**	**Background factors**
	Rest/Sleeping	Distraction/ imagery	Providing comfort and reassurance	Helping with daily activities	Variables in parents' chosen methods for pain relief
	Positioning	Positive reinforcement /Giving information	Touch	Creating a comfortable environment	Variables in nurses' chosen methods for pain relief
	Massage	Relaxation	Presence	Religious methods	
	Thermal regulation	Breathing techniques			

7.1 Physical methods

Rest/Sleeping

Singaporean children used themselves many physical methods in relieving pain, including sleeping (Sng, Taylor, Liam, Klainin-Yobas, Wang & He 2013, 961). The most commonly used methods for relieving pain by Chinese children included resting and sleeping (He, Vehviläinen-Julkunen, Pölkki & Pietilä 2007, 93-94). Of American parents 60% helped their children to sleep (Gorodzinsky, Bernacki, Davies, Drendel & Weisman 2012, 9).

Positioning

Positioning as a method for non-pharmacological pain management was often used by Singaporean nurses to relieve child's pain (He, Lee, Jahja, Sinnappan, Vehviläinen-Julkunen, Pölkki & Ang 2011, 31), and Singaporean children modified their physical position themselves as well and they hoped for nurses to be more aware of their positioning (Sng et al. 2013, 961, 964). Singaporean parents used often positioning, this being initiated sometimes by the children (Sng et al. 2013, 963). Chinese children used positioning as a major pain relief themselves (He et al. 2007, 93). The Chinese parents used positioning (He, Pölkki, Pietilä & Vehviläinen-Julkunen 2006, 5) and Chinese nurses most used non-pharmacological method was positioning (He et al. 2007, 94).

Massage

The Chinese parents used massage on their children (He et al. 2007, 94), providing massage more commonly to girls than boys (He et al. 2006, 5-7). Singaporean parents used often massaging, sometimes initiated by their children (Sng et al. 2013, 963). Thai parents massaged the area hurting (Jongudomkarn, Forgeron, Siripul & Finley 2012, 326). Massaging was used by American parents as one of the most common methods, mothers being more likely to provide it than fathers (Gorodzinsky

et al. 2012, 9). American nurses were given options on a survey on what non-pharmacological methods they would use, and those included massage (Griffin, Polit & Byrne 2007, 660).

Thermal regulation

Chinese children and nurses rarely used thermal regulation reported by the children themselves (He et al. 2007, 93, 94). Thai parents used thermal regulations to ease the pain (Jongudomkarn et al. 2012, 326). Moroccan nurses included applying cold to painful area for pain relief (McCarthy, Chammas, Wilimas, Alaoui & Harif 2004, 14). Applying ice was one of most commonly used methods by American parents, mothers using the technique more likely than fathers. Applying warmth was also used, but a little more rarely than applying cold. (Gorodzinsky et al. 2012, 9.) American nurses were given options on a survey on what non-pharmacological methods they would use, and those included thermal regulations (Griffin et al. 2007, 660).

7.2 Cognitive-behavioral methods

Distraction and imagery

One of the most commonly used cognitive-behavioral methods by Chinese children was distraction. Distraction styles were reading books and listening to music. (He et al. 2007, 93.) Chinese parents used distraction commonly as well (He et al. 2006, 5) and the Chinese children hoped for more distraction as a pain relief method from their parents and nurses (He et al. 2007, 95). Thai parents distracted the child by taking them for a walk or letting them play (Jongudomkarn et al. 2012, 326, 327). Turkish neonatal nurses used music to distract neonates when in procedural pain (Kostak, Inal, Efe, Yilmaz & Senel 2015, 528). Moroccan research participants relied mainly on medication to relieve children's cancer pain, but when pharmacological intervention was not available, nurses used other techniques to comfort child, and distraction was used. Distractive methods included playing and telling stories.

(McCarthy et al. 2004, 14.) American nurses were given options on a survey on what non-pharmacological methods they would use, and those included distraction via toys, children reading to themselves and watching television and guided imagery (Griffin et al. 2007, 660). Distraction was not a commonly used non-pharmacological pain relieving method within the American parents (Gorodzinsky et al. 2012, 12).

Singaporean parents used distraction, including engaging the child in activities such as watching television and reading. They advised on not thinking about the pain. (Sng et al. 2013, 962.) Singaporean nurses used distraction as well, distracting the child by talking to him and allowing children to watch television (Sng et al. 2013, 964). Distraction was most commonly used by Singaporean children as a pain relief. This involved electronic gadgets, games, music and internet surfing, reading comics and watching videos, reading books and magazines. (Sng et al. 2013, 961.) Singaporean children suggested their parents for using more distraction. This would include bringing videos, homework, books and food. The presence of parent in hospital was also wished. (Sng et al. 2013, 964.) Singaporean children hoped for nurses to use distraction, such as allowing to play. (Sng et al. 2013, 964.)

Imagery was used by the Singaporean children themselves. (Sng et al. 2013, 961.) American adolescents learned to cope with painful sickle cell disease occurrences with guided imagery (Schwartz, Radcliffe & Barakat 2007, 273). Imagery locations were chosen by the adolescents themselves, such as playing basketball and going to church events (Schwartz et al. 2007, 274). Chinese parent's the father used more frequently the non-pharmacological methods of imagery (He et al. 2006, 5-7).

Positive reinforcement and offering information

Singaporean parents and nurses used positive reinforcement to help reduce child's pain (He et al. 2011, 31; Sng et al. 2013, 962, 963). African American adolescents learned to cope with painful sickle cell disease occurrences with cognitive-behavioral components positive coping self-statements (Schwartz et al. 2007, 273). Chinese

fathers used more positive reinforcement than mothers as a method to relieve pain (He et al. 2006, 5-7). Chinese parents used this also more commonly with boys than girls (He et al. 2006, 5-7).

Singaporean parents gave preparatory information to help reduce their child's pain (Sng et al. 2013, 962). Singaporean children sought for other's help, meaning informing their parents of the pain (Sng et al. 2013, 961). 54% reported providing preparatory information to the children always or nearly always in Singapore. The nurses who had their own children were more likely to give some preparatory information. 58% talked openly about child's fear and anxiety. (He et al. 2011, 32, 34.)

Relaxation and breathing techniques

Singaporean nurses used relaxation and breathing techniques (He et al. 2011, 31; Sng et al. 2013, 963). African American adolescents learned to cope with painful sickle cell disease occurrences with cognitive-behavioral components, such as deep relaxation and deep breathing (Schwartz et al. 2007, 273). Chinese nurses used often relaxation, reported by Chinese pediatric patients (He et al. 2007, 94). American nurses were given options on a survey on what non-pharmacological methods they would use, and those included deep breathing (Griffin et al. 2007, 660).

7.3 Emotional support

Providing comfort and reassurance

Emotional support strategies Singaporean nurses used at least nearly always included comforting and reassurance (He et al. 2011, 31-32). Chinese parents used emotional support strategies very commonly including comforting. Nurses of this area used mostly only comforting. (He et al. 2007, 94-95) Singaporean parents provided comfort and reassurance (Sng et al. 2013, 963). Singaporean nurses used reassurance reminding children to relax, be calm and endure the pain (He et al. 2011,

32; Sng et al. 2013, 964). American parents used the most comforting a child in pain, mothers using it more likely than fathers (Gorodzinsky et al. 2012, 9). Moroccan nurses comforted patients in pain (McCarthy et al. 2004, 14). Turkish neonatal nurses used giving pacifier to comfort patients (Kostak et al. 2015, 528).

Touch

Emotional support strategies Singaporean nurses used at least nearly always included touch (He et al. 2011, 31-32). Thai parents hugged their child (Jongudomkarn et al. 2012, 326). Turkish neonatal nurses used skin touch, hugging and swaddling and clothing to reduce pain (Kostak et al. 2015, 528). Singaporean parents used methods including touching, holding, hugging, stroking, patting the children and this was seen comforting by the children. (Sng et al. 2013, 963.) Singaporean nurses used touch (He et al. 2011, 32; Sng et al. 2013, 964). Chinese parents used touch, reported by their children (He et al. 2007, 94). American nurses were given options on a survey on what non-pharmacological methods they would use, and those included touch (Griffin et al. 2007, 660).

Presence

One of the most used non-pharmacological pain relieving methods by Chinese children was presence of their parents (He et al. 2007, 93-94) and Chinese parents gave the presence (He et al. 2007, 94-95). Singaporean parents used presence as well and this especially was appreciated by the children (Sng et al. 2013, 963). The presence of parent in hospital was also wished by the Singaporean children (Sng et al. 2013, 964). For nurses Chinese children gave suggestions for more presence to relieve their pain (He et al. 2007, 95). American nurses were given options on a survey on what non-pharmacological methods they would use including presence (Griffin et al. 2007, 660).

7.4 Other methods

Helping with daily activities

Other methods used by Chinese parents were helping with daily activities (He et al. 2007, 94-95). Singaporean nurses helped with daily activities (He et al. 2011, 32; Sng et al. 2013, 964). American parents 57 % would help by giving a bath to a child (Gorodzinsky et al. 2012, 9)**.** Singaporean children drank fluids to relieve pain (Sng et al. 2013, 961). Turkish neonatal nurses used feeding, giving sucrose to help reduce pain (Kostak et al. 2015, 528).

Creating a comfortable environment

Chinese nurses used creating a comfortable environment to relieve children's pain (He et al. 2007, 94-95). Singaporean nurses also created a comfortable environment for the child by minimizing noise and adjusting lighting and temperature (He et al. 2011, 32). Singaporean children felt that nurses treated them well (Sng et al. 2013, 964). For nurses Chinese children gave suggestions of non-pharmacological pain management such as creating comfortable environment (He et al. 2007, 95). From Chinese parents the father more frequently created a comfortable environment (He et al. 2006, 5-7).

Religious methods

Moroccan religious beliefs or cultural aspects are not seen as a barrier to pain management, and even though some people see illness-related pain and suffering normal, most of the study participants that pain should not be tolerated. Restrictions to pharmacological pain management are seen, but non-pharmacological pain management restrictions are not stated. (McCarthy 2004, 14-15.) Thai parents used traditional approaches to treat pain, these grounded into Isan culture and Buddhism. These were for example ceremony of Sorn Khwan, bringing back the soul or spirit to the body. This is that by uniting the soul back to body person's pain ceases. These methods are practiced both in hospitals and communities. Other methods are

hanging an image of Buddha on child's neck to protect from supernatural harm, or blowing sticky rice to the child to pull out the pain. (Jongudomkarn et al. 2012, 326.) Supporting ethnic pride and spirituality is important in African-Americans pain management (Schwartz et al. 2007, 275-276).

7.5 Background influences

Variables in parents' chosen methods for pain relief

From Chinese parent's the father used more frequently the following non-pharmacological methods: imagery, positive reinforcement and creating comfortable environment (He et al. 2006, 5-7). From the American parents the mothers used more non-pharmacological methods, especially providing comfort, massage, ice, bath, liquids, attention, and helping the child breathe through the pain. (Gorodzinsky et al. 2012, 10.)

Chinese parents used massage more often with girls than boys, positive reinforcement more commonly with boys (He et al. 2006, 5-7). The American parents had minor preferences in the use of non-pharmacological methods based on child's gender. Of thirteen methods only two were used slightly more with girls than boys, being helped to sleep and being distracted. (Gorodzinsky et al. 2012, 10.) Gender does not influence the chosen methods for Thai parents (Jongudomkarn et al. 2012, 327). 98% of American parents reported using at least one non-pharmacological pain relieving method to alleviate their child's pain (Gorodzinsky et al. 2012, 7-8). American parent's used significantly more non-pharmacological methods for children between the ages 6 and 11 compared to ages 2 to 5 and 12 to 17 (Gorodzinsky et al. 2012, 10, 11).

The Chinese parent's use of some non-pharmacological methods was also indicated more by their age, education level and employment status. These resulted in more

use of different methods, in more educated and employed ones. The age mattered on a level that older parents used presence and giving information more often than younger parents, but younger parents used imagery more likely. (He et al 2006, 6.) Thai parents see pain as a cause of karma and due to their religious beliefs they do not want to disturb nurses to ask for pain relief for their child (Jongudomkarn et al. 2012, 325-326, 327).

Variables in nurses' chosen methods for pain relief

Older Singaporean nurses used some non-pharmacological methods more frequently compared to youngest nurses. Singaporean nurses with higher education, longer working experience and/or own children were more likely to use some non-pharmacological methods. There is also differences between staff nurses and more senior nurses, senior nurses using some non-pharmacological methods more frequently. (He et al. 2011, 32-34.) The level of education of Turkish nurses was associated with the use of non-pharmacological methods, resulting in more educated nurses using some non-pharmacological methods more. Also nurses working in University Hospitals compared to State Hospitals used more often some non-pharmacological methods. Nurses having less than 5 years working experience used more pacifier to relieve pain. (Kostak et al. 2015, 529.) Nurses' education level was found unrelated to their use of nonpharmacological methods use in American nurses (Griffin et al. 2007, 664).

Nurses used a variety of non-pharmacological methods with children in pain in United States, giving highest variety of non-pharmacological methods to a child most in pain. These nurses used the same amount of non-pharmacological methods to girls and boys. The similar amount of non-pharmacological pain relieving methods were also used to children from different ethnic groups. This pattern stayed the same as the attractiveness of children was explored. No evidence of differences in the amount of nurses' use of non-pharmacological methods was shown due to child's gender, race or attractiveness. Some differences between the types of non-

pharmacological methods was though shown with gender and race differences. Boys were more encouraged to distract themselves via television, videos or electronic games, when girls were more encouraged to read to themselves. Girls were also more likely to get swaddled or rocked by nurses. Nurses were more likely to use toys to distract an African-American child compared to an American child. (Griffin et al. 2007, 661-662.)

7.6 Culture's impact

The most used non-pharmacological methods are presented by the nationality in the following table 5. The methods used were quite similar, and almost always at least two categorical methods were used from physical, cognitive-behavioral, emotional and other methods. These results are just the most used, other methods were presented in the analysis.

Table 5. Most used non-pharmacological methods

NATIONALITY	*PHYSICAL*	*COGNITIVE-BEHAVIORAL*	*EMOTIONAL*	*OTHER METHODS*
AMERICAN PARENTS	Massage Thermal regulations		Comfort	
THAI PARENTS		Distraction	Touch	Traditional methods
TURKISH NURSES			Touch Giving a pacifier	
MOROCCAN NURSES	Thermal regulations		Comfort Presence	

CHINESE CHILDREN	Rest/sleeping Positioning		Presence of parents	
CHINESE PARENTS			All methods	Helping with daily activities
CHINESE NURSES	Positioning		Comfort	
SINGAPOREAN CHILDREN		Distraction		
SINGAPOREAN PARENTS	Massage	Distraction	All methods	
SINGAPOREAN NURSES	Positioning	Positive reinforcement Distraction Breathing techniques		Helping with daily activities

8 DISCUSSION

8.1 Ethical considerations, validity and reliability

Main ethical considerations in studies involve respecting the participants, responding to the needs of vulnerable groups, consents from the participants and maintaining confidentiality. Respecting participants highlights that every individual matters and should be treated with respect and thus respecting their decisions, such as not participating a study. Being aware of the vulnerable groups involves children, and respecting and receiving their consent to researches is as well important. (Gerrish & Lacey 2010, 27-29.) As literature review is based on already conducted researches, the ethical principles of researches should be acquired already in the researches

reviewed. The thoughts of original authors are clearly presented in this thesis, avoiding misunderstandings in whose thoughts are described. In the used literature ethical considerations were taken into account. In the studies were children were interviewed themselves, the consent was asked from the parents and the child. In other studies involving hospitalized children, the parents were reassured that declining to participate to the study would in no way influence the child's care.

In social research, one cannot say that all the possible sources of error have been eliminated, but the quality of the study must be judged (Gerrish & Lacey 2010, 24). Different measures are available, most commonly used are validity and reliability. In some qualitative studies these are referred to as credibility, trustworthiness and transparency to avoid the assumption that research can be entirely unbiased. (Gerrish & Lacey 2010, 24-25; Liamputtong 2013, 16.) The validity and reliability of the undertaken study is considered.

Validity concerns to what extent the study is unbiased and what is the integrity of the results. Validity can be effected if the participants are in differing positions, whether the methods used are suitable for the study and if the study is generalizable to other research settings. (Gerrish & Lacey 2010, 24-25; Liambuttong 2013, 16.) In other terms this is credibility, the fit between the results and participants views. This is to raise questions on if the findings can be regarded as truthful. Transferability means if and to what amount the findings are generalizable. (Gerrish & Lacey 2010, 139; Liamputtong 2013, 17.)

The studies reviewed were done in 6 different countries, three in the United States, two in Singapore, and one in each China, Morocco, Thailand and Turkey. All the studies are written in English. This gives a small spectrum to the whole world, leaving many areas uncovered. There is not that much information on the subject found from the databases. The results do not necessarily apply to the situations in different countries, and mainly they just point out what might be seen and kept in mind in

taking care of culturally diverse pediatric patients. Four out of nine studies considered pain management of postoperative pediatric patients. One examined the non-pharmacological methods implemented at homes, these pain situations caused mostly by pain in head or stomach. One was focusing on neonates' procedural pain, such as venipuncture, and one on adolescents' sickle cell disease pain occurrences. One study had vignettes of three kinds of pain, fracture, appendicitis and cancer and one study was of children with cancer. This leads to a stress on the postoperative and acute pain management. The results are then not applicable to chronic pain without further study.

Three studies concerned of school aged children's pain, two studies concerning all aged children, in which one of these the children were mainly school aged. One study was about children aged from 2 to 17, and one was studying neonates and one adolescents. This makes the children concerned in the review mainly school aged, and suitability to especially neonates and adolescents cannot be assured. He and others (2006), He and others (2007), He and others (2011) and Sng and others (2013) had some same authors in their studies and used similar frameworks and methods in their studies. This makes them more comparable to each other, but also might affect the validity of the review.

Reliability is about consistency of measurement and stability of the findings. The same work needs to be able to be taken in the same manner and same results should be acquired by a different researcher. (Gerrish & Lacey 2010, 24-25; Liambuttong 2013, 16.) Dependability is about the transparency of the research process, whether the findings are likely to apply at other times. (Gerrish & Lacey 2010, 139; Liamputtong 2013, 17). The research process was written carefully to make it possible to be followed and redone. Numerous databases were searched to obtain all relevant data, making the study more reliable. The fact that this thesis had only one researcher, who is a novice one and completing a research for the first time, may

have affected the results and the reliability of the study, even it was undertaken in a rigorous matter.

8.2 Discussion of the results

The aim of this study was to find out the cultural effects on non-pharmacological pain management of children under 18 years old, and the nurses' background effects on their use of non-pharmacological methods. This was to offer nurses information on the non-pharmacological pain management of children. The results show no significant differences between cultures in children's non-pharmacological pain management. The children are given and demanding similar kind of methods. The variety used is large.

Distraction as a pain relieving method was greatly used. Eight studies out of ten mentioned distraction as a pain relief method. American parents did not use as much distraction to ease their children's pain, which is interesting in the light that distraction is one of the most successful non-pharmacological way of pain relief (Olmstead et al. 2014, 163). The same result was shown in a study of immunizing American children, where parents used rarely distraction as a pain relieving method (Megel, Hesel & Matthews 2002, 159-160). The varying use of distraction might be due to numerous reasons, the child's age for instance. The used non-pharmacological methods might also vary according the type and origin of the pain child is experiencing.

Differences were found between which of the parents conducts the most non-pharmacological methods to their children. In China, the father was more likely to use certain sets of non-pharmacological methods. In the United States, mother was more likely to use more certain non-pharmacological methods. The difference might come from the culture, and the roles of parents' in family but also from the study

settings, understanding the terms and questions being asked. JWT Asia Pacific surveyed 1500 Singaporean, Chinese and Malaysian men and women to find out shifts in male roles during August 2013 (Thompson, 2013). This report showed that 53% of Chinese fathers saw taking children to hospital as their duty, whereas 25% of Chinese mothers saw it as father's responsibility (JWT Sonar 2013, 25). As the fathers are considering hospital visits as their responsibility, they might be more eager to imply non-pharmacological pain relieving methods. The differences between the use of methods may be also caused by the research settings. The research on Chinese parents was conducted in hospital, and on American parents at home. The age, education and employment also affected the use of Chinese parent's non-pharmacological methods, but these factors could not be supported by other studies, as it did not come up in those.

The nurses' background was also affecting their use of non-pharmacological pain management methods. This was found in studies in Turkey and Singapore, but not in the United States. Singaporean and Turkish results are in line with a Finnish and a Chinese researches, were nurses age, education and background of own children had effects on their use of non-pharmacological methods, with longer experience of work, education and age indicating larger variety in use of non-pharmacological pain management (Pölkki et al. 2001, 490; He, Pölkki, Vehviläinen-Julkunen & Pietilä 2005, 341). The reason for this not transferring to Americans might be due to cultural and educational differences, or the differing research settings.

In He and others (2007) study the children suggested pain relieving methods to be used by their parents and nurses, and these included rather non-pharmacological pain relieving methods than pharmacological methods (He et al. 2007, 96). Kostak and others (2015) noticed that nurses are lacking in knowledge of non-pharmacological methods. 80% of Singaporean nurses reported that their ward had instructions for other than pharmacological pain relief methods (He et al. 2011, 31). Children see that the use of non-pharmacological methods is uncommon by nurses

which is controversial to studies made for nurses and the reasons behind this were suggested by the authors to be due to nurses presenting themselves better and children not noticing nurses' routine work (Sng et al. 2013, 965). This implies that nurses need more education on the use of non-pharmacological methods, and that the children want them to apply those methods more often. The methods presented in this thesis can be used in everyday nursing.

Schwartz and others (2007) gave instructions to culturally sensitive pain interventions for African-American adolescents. Emphasizing the role of family, making sure to include the extended family as well and giving culturally sensitive assessment materials would help the intervention. The help seeking behavior should be reinforced in groups tending to not seek help and trust between these kinds of groups should be concentrated on. (Schwartz et al. 2007, 275-276.) The differences with the non-pharmacological methods used came more from the backgrounds of parents and nurses. For example the differences between Chinese and American parents and with the gender and age of the child. The methods were varying within all cultural groups, but usually methods from all these four categories, physical, cognitive-behavioral, emotional and other methods, were used. For nurses pain management practices this mainly means that they can use a large variety of non-pharmacological methods regardless on the child's cultural background. Culturally sensitive care may improve effective implementation (Schwartz et al. 2007, 277). Cultural sensitivity in pain practices is important but it must be beared in mind that the people with same cultural background can still react very differently (Jongudomkarn et al. 2012, 329). In imagery/distraction settings the methods should be culturally sensitive. The approach taken by Schwartz and others (2007, 278) suggested that with this kind of manner the interventions are seen from moderately to extremely helpful, interesting and enjoyable (Schwartz et al. 2007, 278).

The results of the study imply that the children are excepting similar types of non-pharmacological methods despite their cultural background. More use of non-

pharmacological methods is wished for. Important is to consider the parent's part and role in the pain management, and how it effects to the pain management. The culture of the child must be considered even though this study showed no significant differences between the groups. The nurses need to be more aware and active in their non-pharmacological pain management and acknowledge how their own background might affect the use of non-pharmacological methods. This means that the education of nurses should also cover the variety of non-pharmacological pain management.

Surprising fact was that there was no more available studies of culture's influences on non-pharmacological pain management of children. The researches are more concentrated on culture's effects on the pain perceptions and culturally suitable pain assessment tools rather than the non-pharmacological pain management sections. Suggestions for further studies include the more focused study for background effects on nurses' use and choice of non-pharmacological pain relieving methods. This would be crucial to improve the pain management of children and education of nurses. The same research would be suitable for the parents as well, to ensure and educate them correctly about their child's non-pharmacological pain management. It would be beneficial as well to find out if the cause of the pain affects to the chosen non-pharmacological pain relieving methods, to educate the proper use of methods.

REFERENCES

Aveyard, H. 2010. Doing a Literature Review in Health and Social Care: A Practical Guide. 2nd Edition. Open University Press. England. McGraw-Hill Companies.

Ball, J. W. & Bindler, R. C. 2008. Pediatric Nursing – Caring for Children. 4th Edition. 66. – 407. p. Pearson Education Inc. New Jersey. Pearson Prentice Hall.

Ballentyne, J. C. 2010. Methodological Issues in Nonpharmacological Trials for Chronic Pain. May 2010. p. 1-3. Vol XVIII, Issue 2. IASP. Accessed on 22nd September 2015. Retrieved from http://iasp.files.cms-plus.com/Content/ContentFolders/Publications2/PainClinicalUpdates/Archives/PCU_2010_May_Web_5-11-2010_1390261377657_7.pdf

Batista, M., Fortier, M., Maurer, E., Tan, E., Huszti, H. & Kain, Z. Exploring the Impact of Cultural Background on Parental Perceptions of Children's Pain. Children's Health Care 41 2012. 97. – 110. p. Taylor & Francis Group, LLC.

Baulch, I. 2010. Assessment and management of pain in the paediatric patient. Nursing Standard. 2010 November. 35. – 40. p. RCN Publishing Company.

Bussone, G., Grazzi, L. & Panerai, A. E. 2012. Pain, Emotion, Headache. Headache: The Journal of Head & Face Pain. October 2012. 98. – 101. p. American Headache Society. Wiley and Blackwell.

Breen, J. 2002. Transitions in the Concept of Chronic Pain. Advances in Nursing Science. 2002 June. 48. – 59. p. Aspen Publishers, Inc.

Briggs, E. 2008. Cultural perspectives on pain management. Journal of Perioperative Practice. November 2008 Volume 18 Issue 11. 468. – 471. p. Association for Perioperative Practice.

Campinha-Bacote, J. 2002. The Process of cultural competence in the delivery of healthcare services: A model of care. 181. – 184. p. Journal of Transcultural Nursing 13th March 2002.

Cronin, P., Ryan, F. & Coughlan, M. 2008. Undertaking a literature review a step-by-step approach. British Journal of Nursing 2008 January. 38. – 43.p. Mar Allen Publishing Ltd.

Esteve, R. & Marquina-Aponte, V. 2012. Children's pain perspectives. Child: Care, Health & Development. 2012 May. 441. – 452. p. Wiley & Blackwell.

Gerrish, K. & Lacey, A. 2010. The Research Process in Nursing. 6th Edition. 24. – 432. p. Blackwell Publishing Ltd.

Gorodzinsky, A., Bernacki, J., Davies, W., Drendel, A. & Weisman, S. 2012. Community Parents' Use of Non-Pharmacological Techniques for Childhood Pain Management. Children's Health Care 41:1-15, 2012. p. 1. – 15. Taylor & Francis Group.

Griffin, R., Polit, D. & Byrne, M. 2007. Stereotyping and Nurses' Recommendations for Treating Pain in Hospitalized Children. Research in Nursing & Health 2007, 30. p. 655 – 666. p. Wiley Periodicals, Inc.

He, H-G., Lee, T-L., Jahja, R., Sinnappan, R. Vehviläinen-Julkunen, K., Pölkki, T. & Ang, N. 2011. The use of nonpharmacological methods for children's postoperative pain relief: Singapore nurses' perspectives. Journal for Specialists in Pediatric Nursing, 16 2011. 27. – 38. p. Wiley Periodicals, Inc.

He, H-G., Vehviläinen-Julkunen, K., Pölkki, T. & Pietilä, A-M. 2007. Children's perceptions on the implementation of methods for their postoperative pain alleviation: An interview study. International Journal of Nursing Practise 2007, 13. 89. – 99. p. Blackwell Publishing.

He, H-G., Pölkki, T., Pietilä, A-M. & Vehviläinen-Julkunen, K. 2006. Chinese parent's use of nonpharmacological methods in children's postoperative pain relief. Nordic Collage of Caring Science 2006, 20. 2. – 9. p. Blackwell Publishing Ltd.

He, H-G., Vehviläinen-Julkunen, K., Pölkki, T. & Pietilä, A-M. 2005. Chinese nurses' use of non-pharmacological methods in children's postoperative pain relief. Journal of Advanced Nursing 51 (4). 335. – 342. p. Blackwell Publishing Ltd.

Hockenberry, M. J. 2005. Wong's Essentials of Pediatric Nursing. 7th Edition. 81.-89. p. Mosby Inc. United States of America.

Howard C. A., Andrade S. J. & Byrd T. 2001. The ethical dimensions of cultural competence in border health care settings Family & Community Health. 2001, Jan 23. 36-49. Aspen Publishers, Inc.

IASP Taxonomy Working Group. 2012. IASP Taxonomy. Pain Terms. IASP Publications. Accessed on 22nd September, 2015. Retrieved from http://www.iasp-pain.org/Education/Content.aspx?ItemNumber=1698&navItemNumber=576

Jongudomkarn, D., Forgeron, P., Siripul, P. & Finley, A. 2012. My Child You Must Have Patience and Kreng Jai: Thai Parents and Child Pain. Journal of Nursing Scholarship, 2012, 44:4. 323. – 331. p. Sigma Theta Tau International. Wiley Blackwell.

JWT Sonar. 2013. 2013 State of Asian Men Study (Malaysia, China, Singapore). p. 25. Accessed on 14th October 2015. Retrieved from https://d3ftitl17j4lal.cloudfront.net/3119ee4b-bd0f-46d3-a27f-c27e50f1b891-documents_snapshots.pdf

Kalso, E., Haanpää, M. & Vainio, A. 2009. Kipu. 28. – 467. p. Helsinki: Kustannus Oy Duodecim.

Kankkunen, P. & Vehviläinen-Julkunen, K. 2013. Tutkimus hoitotieteessä. 3rd Edition. 164. p. SanomaPro Oy.

Kostak, M., Inal, S., Efe, E., Yilmaz, H. & Senel, Z. 2015. Determination of methods used by the neonatal care unit nurses for management of procedural pain in Turkey. J Pak Med Assoc. 2015 May 65(5). 526. – 531. p.

Liamputtong, P. 2013. Research Methods in Health - Foundations for evidence-based practice. 2nd Edition. 16. – 376. p. Oxford University Press Australia.

Lux, M., Algren, C. & Algren, J. 1999. Management Strategies for Ensuring Adequate Analgesia in Children. Dis Manage Health Outcomes 1999, July 6 (1). 37. – 47. p. Adis International Limited.

McCarthy, P., Chammas, G., Wilimas, J., Alaoui, F. & Harif, M. 2004. Managing Children's Cancer Pain in Morocco. Journal of Nursing Scholarship 2004, 36:1. 11. – 15. p. Blackwell Publishing Limited.

Meerwijk, E. L & Shattell, M. M. 2012. We Need to Talk About Psychological Pain. Issues in Mental Health Nursing. 2012, April. 263. – 265. p. Taylor & Francis Ltd.

Megel, M., Heser, R. & Matthews, K. 2002. Parent's assistance to children having immunizations. Issues in Comprehensive Pediatric Nursing, July- September Vol. 25 Issue 3. 151. – 165. p. Taylor & Francis HealthSciences.

O'Hagan, Kieran. 1999. Culture, cultural identity, and cultural sensitivity in child and family social work. Child and Family Social Work 4. 1999 November. p 269 – 281. Wiley Blackwell. Blackwell Science LTD.

Olmstead, D., Scott, S. Mayan, M. Koop, P. & Reid, K. 2014. Influences shaping nurses' use of distraction for children's procedural pain. Journal for Specialists in Pediatric Nursing. 2014 April. 162. – 172. p. Wiley & Blackwell.

Pölkki, T., Vehviläinen-Julkunen, K. & Pietilä, A-M. 2001. Nonpharmacological methods in relieving children's postoperative pain: a survey on hospital nurses in Finland. Journal of Advanced Nursing, 34(4). 483. – 492. Blackwell Science Ltd.

Saks, M. & Allsop, J. 2007. Researching Health Qualitative, Quantitative and Mixed Methods. 30. – 124. p. Sage Publications.

Sng, Q., Taylor, B., Liam, J., Klainin-Yobas, P., Wang, W. & He, H-G. 2013. Postoperative pain management experiences among school-aged children: a qualitative study. Journal of Clinical Nursing, 2013, 22. 958. – 968. p. Blackwell Publishing Ltd.

Spencer, C. & Burke, P. 2011. The impact of culture on pain management. Med-Surg Matters. 2011 July – August. p. 12-15. Academy of Medical Surgical Nursing.

Storvik-Sydänmaa, S., Talvensaari, H., Kaisvuo, T. & Uotila, N. 2012. Lapsen ja nuoren hoitotyö. p. 10. – 11. Sanoma Pro Oy Helsinki.

Schwartz, L., Radcliffe, J. & Barakat, L. 2007. The Development of a Culturally Sensitive Pediatric Pain Management Intervention for African American Adolescents With Sickle Cell Disease. Children's Healthcare, 36(3). 267. – 283. p. Lawrence Erlbaum Associates, Inc.

Thompson, W. J. 2013. What shifts in male roles and attitudes means to advertisers. Accessed on 14th November, 2015. Retrieved from https://www.jwt.com/en/singapore/thinking/whatshiftsinmalerolesandattitudesmeanstoadvertisers/

Unicef. YK:n yleissopimus lasten oikeuksista. Accessed on 22nd September 2015. Retrieved from https://unicef.studio.crasman.fi/pub/public/pdf/LOS_A5fi.pdf

Väestöntutkimuslaitos. Miettinen, A & Pelkonen, I. Maahanmuuttajien määrä. Väestöliitto Accessed on 16th November, 2015. Retrieved from http://www.vaestoliitto.fi/tieto_ja_tutkimus/vaestontutkimuslaitos/tilastoja-ja-linkkeja/tilastotietoa/maahanmuuttajat/maahanmuuttajien-maara/

Wahlstrom, J. 2004. Ask the expert. The child with chronic pain. Journal for Specialists in Pediatric Nursing. 2004 Oct-Dec. 135. – 138. p. Wiley Blackwell.

Appendices

Appendix 1

Table 6

N.o	Authors, time and place of study	Title	Aim	Participants, sample size	Data collection and analysis	Key results
1	Gorodzinsky, A., Bernacki, J., Davies, W., Drendel, A. & Weisman, S. 2012 United States of America	Community Parents' Use of Non-Pharmacological Techniques for Childhood Pain Management	Explore community parents' use of non-pharmacological techniques for pain management at home.	834 participants	Anonymous online survey Statistical Package for the Social Sciences Version 17.0 Descriptive statistics	The most common non-pharmacological method was comforting child. Mothers are more likely to use a variety of methods.
2	Griffin, R., Polit, D. & Byrne, M. 2007 United States of America	Stereotyping and Nurses' Recommendations for Treating Pain in Hospitalized Children	Examine whether nurses' recommendations for managing children's pain were influenced by stereotypes.	663 sample size, 334 participants	Cross-sectional survey Descriptive statistics and analysis of covariance	No evidence of nurses' clinical recommendations were affected by stereotypes based on sex, race or physical attractiveness.

3	He, H-G., Lee, T-L., Jahja, R., Sinnappan, R. Vehviläinen-Julkunen, K., Pölkki, T. & Ang, N. 2010 Singapore	The use of nonpharmacological methods for children's postoperative pain relief: Singapore nurses' perspectives	Examine nurses' use of non-pharmacological methods for school-aged children's postoperative pain management.	151 nurses sample size of which 134 registered nurses records analyzed.	Descriptive questionnaire survey SPSS software Descriptive statistics.	High percentage of Singapore nurses use a variety of non-pharmacological methods.
4	He, H-G., Pölkki, T., Pietilä, A-M. & Vehviläinen-Julkunen, K. 2006 China	Chinese parent's use of nonpharmacological methods in children's postoperative pain relief	Describe what nonpharmacological methods parents use to relieve their child's postoperative pain and factors related to this	206 parents	Questionnaire SPSS 11,5 software Descriptive statistics	Most commonly used methods were emotional support strategies, helping with daily activities, distraction and imagery. Fathers and older parents used more pain relief methods.
5	He, H-G., Vehviläinen-Julkunen, K.,	Children's perceptions on the implementation of methods for their	Reveal the 8-12 year old children's perceptions on the use of methods for	59 children.	Face-to-face structured interview	Children use variety of non-pharmacological methods

	Pölkki, T. & Pietilä, A-M. 2007 China	postoperative pain alleviation: An interview study	postoperative pain alleviation by themselves, their parents and nurses		Content analysis and descriptive statistics.	themselves, and suggest more non-pharmacological methods for their parents and nurses.
6	Jongudomkarn, D., Forgeron, P., Siripul, P. & Finley, A. 2012 Thai Isan	My Child You Must Have Patience and Kreng Jai: Thai Parents and Child Pain	Explore the experiences of parents providing care for their hospitalized child's acute pain.	45 parents	In-depth interviews Thematic analysis	Pain is a normal consequence of life and traditional remedies are used in addition to medicine.
7	Kostak, M., Inal, S., Efe, E., Yilmaz, H. & Senel, Z. 2015 Turkey	Determination of methods used by the neonatal care unit nurses for management of procedural pain in Turkey	Determine the pain management methods used by neonatal intensive care unit nurses to reduce procedural pain.	486 nurses	Cross-sectional study, questionnaire SPSS 15	Very little pain management was used for invasive procedures.
8	McCarthy, P., Chammas, G., Wilimas, J., Alaoui, F. & Harif, M.	Managing Children's Cancer Pain in Morocco	Identify issues in pain management of children with cancer in Morocco.	14 nurses, 11 physicians	Focus groups Focus group data analysis	Children's cancer pain is a concern of health care providers in Morocco, training

	2004 Morocco					and resources are lacking.
9	Sng, Q., Taylor, B., Liam, J., Klainin-Yobas, P., Wang, W. & He, H-G. 2013 Singapore	Postoperative pain management experiences among school-aged children: a qualitative study.	Explore postoperative pain management experiences among school-aged children.	15 school-aged children	In-depth interviews Thematic analysis	Children, their parents and nurses used various methods of pain relief.
10	Schwartz, L., Radcliffe, J. & Barakat, L. 2007 United States of America	The Development of a Culturally Sensitive Pediatric Pain Management Intervention for African American Adolescents With Sickle Cell Disease	Describe a pediatric cognitive-behavioral pain management with particular emphasis on the cultural sensitivity of the intervention.	25 participants	Pain management interventions and sessions, literature review on cultural components.	Most participants responded well to intervention that is culturally sensitive.