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PATIENTS' AND NURSES' PERCEPTION OF PAIN MANAGEMENT IN THE EMERGENCY DEPARTMENT

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Patients' and nurses' perception of pain management in the Emergency Department

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“True knowledge exists in knowing that you know nothing.”

Sokrates

ABSTRACT

Background: Pain is one of the most common reasons for patients to seek care in the Emergency Department (ED) and pain management should have a primary focus since effective pain management is associated with patient satisfaction, earlier mobilization and shortened hospital stays. Despite earlier knowledge, there are still barriers to pain management at the ED which increase the risk of oligoanalgesia for the patients seeking care. Several previous studies have evaluated actions aimed at improving pain management, but, without additional knowledge of the patients' and registered nurses (RNs') perspective, it may not be possible to further improve pain management in the ED. **Aim:** The overall aim of this thesis was to explore the patients' and nurses' perception of pain management in the ED. **Methods:** A quantitative approach was used for Studies I, II and III and, in Study IV, both qualitative and quantitative analyses were used. All studies were conducted in Swedish EDs and the study participants consisted of patients and RNs. **Results:** Study I, 77% of 647 patients seeking care stated that pain was present when they arrived at the ED and the odds of reporting pain was six times higher among patients <30 years old, compared to patients >60 years old. Thirty-three per cent had taken analgesic prior to admission. Study II, a total of 840 patients (medical records) with wrist/arm fractures or soft tissue injuries and who had received analgesics at the ED were analyzed. The results showed that mandatory pain assessment in the patient's computerized medical record was the only successful intervention to improve the frequency of documentation of pain assessment during care in the ED. However, no documentation of the reassessment of pain was found even though all patients received analgesics. Study III, a total of 160 patients answered a questionnaire and the results showed that more patients received analgesics and that there was a decrease in the intensity of pain in these patients at discharge after the implementation of mandatory documentary assessments of pain. No statistical differences were found regarding the satisfaction of the patients on pain management. Study IV, a total of 70 RNs answered a questionnairer and the results showed that RNs with >6 years of experience administered more analgesics according to the Nurse Initiated Pain Protocol (NIPP), compared to RNs with less experience. The findings also showed that the majority of the RNs thought that the NIPP provided adequate support to relieve the acute pain of patients in the ED. **Conclusion:** There needs to be a primary focus on pain management in the ED since more than 75% of the patient stated that pain was present when they arrived at the ED. The findings show that mandatory documentation of the assessment of pain in the patient's computerized medical record was a successful intervention to improve the frequency of the documentation of pain assessments in the ED. After the intervention, more patients received more analgesics and reported decreased intensities of pain at discharge from the ED. However,

the patients' own reported satisfaction regarding pain management during the ED visit was not significantly improved by implementing the mandatory documentary assessment of pain. The findings concerning the patient's own reported satisfaction regarding pain management may be attributable to the RNs own working experience and their use of NIPP, but further research is needed to explore the factors that affect the patient's own reported satisfaction regarding pain management during the ED visit.

LIST OF SCIENTIFIC PAPERS

I. **Sturesson L**, Ulfvarson J, Niemi-Murola L, Lindström V & Castrén M. Pain on arrival at the emergency department: A regional survey. *Nordic Journal of Nursing Research. 2017, Vol.37(1): 7-11* (first published on June 30, 2016)

II. **Sturesson L,** Lindström V, Castrén M, Niemi-Murola L & Falk A-C. Actions to improve documented pain assessment in adult patients with injury to the upper extremities at the Emergency Department – A cross-sectional study. *International Emergency Nursing. 2016 Mar;25:3-6. doi: 10.1016/j.ienj.2015.06.006.*

III. **Sturesson L**, Falk A-C, Castrén M, Niemi-Murola L & Lindström V. Mandatory documentation of pain in the emergency department increases analgetic administration but does not improve patients' satisfaction of pain management. *Scandinavian Journal of Pain. 2016 (13) 32-35*

IV. **Sturesson L**, Falk A-C, Ulfvarson J & Lindström V. Registered nurses' own experience of using a nurse-initiated pain protocol based on their working experience *(Submitted.)*

CONTENTS

LIST OF ABBREVIATIONS

APS	American Pain Society
CNS	Central Nervous System
ED	Emergency Department
IASP	International Association for the Study of Pain
ICN	International Council of Nurses
JCAHO	Joint Commission on Accreditation of Healthcare Organizations
NIPP	Nurse Initiated Pain Protocol
NPC	National Pharmaceutical Council
NRS	Numerical Rating Scale – a pain measurement scale
NSAID	Non-steroidal anti-inflammatory drug
OTC	Over the Counter analgesic – non-prescription drug
RN	Registered Nurse
SOSFS	Socialstyrelsens författningssamling (National Board of Health and Welfare Code of Statutes)
VAS	Visual Analogue Scale – here, a pain measurement scale

1 INTRODUCTION

When I started my current position as a manager in Nursing Development in the Emergency Department (ED) in 2001, I was given a new opportunity to take part in the quality work done in the ED. As part of my work, I received the results of patient surveys that the Stockholm County Council made of the patients who had sought care and treatment in the ED. The results in these surveys, which were completely new for me, showed that the ED had two predominant areas for improvement: information and pain management. The patients expressed their experiences of shortcomings in the pain management in the ED.

Södersjukhuset, an urban teaching hospital in the centre of Stockholm, has a clear policy regarding pain management in adult patients. The policy document states that all patients in pain receiving care in the hospital should be offered an individualized pain management. There is also a clear statement that the personnel should, as far as possible, inform and involve the patient in planning their own care, including pain management. The policy documents and the guidelines used also state that good pain management requires a good pain assessment and that the intensity of pain should be assessed and documented in the patient's medical record. The discrepancy between patients' experience in the ED concerning pain management and the hospital policy document and guidelines aroused my interest to explore why there was a divergence between the policy statements and the patients expressed experiences of the pain management in the ED. Along the way, it has become clear how complex the patient's pain experience can be in an ED, both for the patient and the caregivers. Nevertheless, it is my hope that my thesis can contribute to improving patients' experience of pain management in the ED since it is my opinion that pain assessment and documentation of the assessment conducted is a crucial step in the care given to relieve patients' pain.

2 BACKGROUND

Pain is a common reason for patients seeking care in the ED and previous studies have shown that between 40 and 78% of the patients presented with pain as a symptom on arrival at the ED (Cordell et al., 2002; Pletcher, Kertesz, Kohn, & Gonzales, 2008; Tanabe & Buschmann, 1999; Tcherny-Lessenot et al., 2003). It might not be so astonishing that patients are in pain when they attend the ED, but a clinical issue arises when studies show that the patients are not satisfied with the pain management they receive in the ED (Fallon, Fung, Rubal-Peace, & Patanwala, 2016; Kelly, 2000). Researchers around the world argue that pain management in the ED setting needs to have a primary focus since pain relief is a primary reason for patients to present at the ED (Fry, Ryan, & Alexander, 2004; Thomas, 2013). The American Pain Society (APS) and the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) stated in 1999 that pain should be '*the fifth vital sign'* emphasizing that pain assessment is as important as assessments of the four standard vital signs: heart rate, blood pressure, temperature and respiratory rate (NPC, 2001).

The reasons for prioritizing patients pain management in the ED are that acute pain may cause adverse physiological and psychological effects on patients (Abou-Setta et al., 2011) and effective pain management is associated with increased patient satisfaction, earlier mobilization and shortened hospital stays (Walid, Donahue, Darmohray, Hyer, & Robinson, 2008). An additional reason for prioritizing pain management is to alleviate patients' suffering (Eriksson, 2015). Patients who do not experience pain relief during their stay in the ED have an increased risk of distress and of developing chronic pain, and compliance with the physicians' recommendations may decrease (Downey & Zun, 2010). Still, and despite this knowledge, the patients are not satisfied with the pain management in the ED (Fallon et al., 2016; Kelly, 2000; Marinsek et al., 2007). Therefore, effective and timely delivery of analgesia for patients presenting at the ED with pain is a vital component of the quality of care (Jennings, Kansal, O'Reilly, Mitra, & Gardner, 2015).

In Sweden, registered nurses (RNs) often have the first contact with the patient seeking care in the ED. In the first encounter, the RNs have a responsibility to identify the patient's pain and, in some cases, independently initiate pain management aimed at alleviating the patient's pain. Therefore, it is of great importance that the RNs assess and document the patients' pain, as well as the other vital signs and thus may decrease the suffering of the patient seeking care at the ED. Relieving pain is, in all respects, both a medical and a caring intervention. Caring is believed to be more powerful when it is focused on the alleviation of the patients' pain, but as nurses say, 'Pain is a top priority for patient, but, unfortunately, it is not always the emergency

nurses' first priority.' (Bergman, 2012). Nevertheless, the basic aim of pain treatment is, according to the humanities and ethos philosophy, to reduce suffering (Werner, 2010). Failure to adequately treat acute pain in the ED may be considered to be a public health problem and it is well known that pain causes great suffering for the patient (Keating & Smith, 2011).

2.1 PAIN

The ability to experience pain is important and one of the strongest forces for human survival. Acute pain is a warning signal designed to protect us by activating reflexes that protect us from further injury (Norrbrink & Lundeberg, 2014). Pain is not only about physical responses to a risk of danger, it is also a personal and subjective experience and can be described in several ways. At present, there is no distinctive way to measure pain and therefore it is impossible to compare the experience of pain from one person to another (Norrbrink & Lundeberg, 2014). The International Association for the Study of Pain (IASP) has defined pain as 'an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage.' Pain is a sensation in a part or parts of the body, but it is also always unpleasant and therefore also an emotional experience (IASP, 2012). Another definition of pain is: 'Pain is whatever the experiencing person says it is, existing whenever the experiencing person says it does.' (McCaffery & Beebe, 1990).

Another way to describe pain is to classify it as acute or chronic/prolonged pain. In Sweden, the term chronic pain has been replaced with long-term pain (Werner, 2010). Acute pain often has a duration of hours, days or weeks, while chronic pain lasts for longer periods of months or years (Karlsten, 2014; Turk & Melzack, 2011). In the ED, acute pain is presented by a majority of patients (Keating & Smith, 2011). Chronic pain is also a reason for a patient to seek care in the ED, but not to the same extent as patients presenting with acute pain (Cordell et al., 2002). Acute pain is temporary and will subside after the injury has healed. A further classification of pain can be made according to its origin: nociceptive, neuropathic, psychogenic or idiopathic pain (Werner, 2010). The most common pain presented by the patients in the ED setting is nociceptive pain. Examples of nociceptive pain are wound pain after trauma or surgery and inflammatory pain, including arthritis and arthrosis (Karlsten, 2014).

2.1.1 Pain physiology

In the human body, there are different types of receptors that detect various physiological signals. One of these receptors is the nociceptor, a receptor that is involved in the body's pain response system. Nociceptors are found in skin, joints, bones, periosteum and muscles. They

are also found in visceral tissues. The nociceptive receptors can be divided into three main types: chemical, mechanical and thermal. The chemical nociceptive receptors are stimulated by external chemicals, such as a bee sting or when burned by a nettle. In the wound or burn tissue, chemical substances such as histamine and potassium ions will be released, causing, for example, such symptoms as itching and swelling. Mechanical nociceptive receptors respond to direct mechanical pressure by pinching or squeezing, as well as the pressure caused by oedema or inflammation of the tissue. The third group, thermal nociceptive receptors, reacts to extreme heat or cold (Hawthorn & Redmond, 1999).

Acute pain is well localized and fast component-mediated by A-delta nerve fibres and a more diffuse throbbing component mediated by the non-myelinated C-nerve fibres (Werner, 2010). When the nociceptors, directly or indirectly, are stimulated by impending or ongoing tissue injury, signals are led from the affected tissue using the primary neuron axon through the dorsal root ganglion in the spinal cord dorsal horn. Then there is a switch to the secondary neuron via spinothalamic pathways connected by a third neuron in the thalamus. From the thalamus, impulses are led further in the structures of the basal ganglia and the limbic system, which is probably responsible for the experience of the emotional component of pain. Finally, there are projected impulses to the cortical areas that are considered to be responsible for the experience of the sensory component of pain. It should be noted that age-related changes in nociceptive perception might lead to reduced pain sensitivity during senescence among elderly patients (Helme & Gibson, 2001). Acute pain also affects areas of the hypothalamus and brain stem through the activation of autonomic neuroendocrine reactions, which are manifested as vegetative reactions, such as nausea, rise in blood pressure and rapid heart rate (Werner, 2010). The body can react to pain before the pain impulse reaches the central nervous system (CNS) in the brain. This is the case when you burn your hand or foot on something hot. When the pain reaches the nociceptive receptors in the skin an impulse is sent to the spinal cord where, instead of only being diverted to the brain, it is also connected to the motor efferent nerves that cause the muscle to jerk the hand or foot away. When the signal reaches the brain, the hand has already been pulled away. This so-called reflex is innate and is called the withdrawal or pain reflex. This reflex is aimed at protecting the body from tissue injuries (Sand, 2004). In addition to the physiological explanations for pain, other factors may also influence the patient's experience of pain.

2.1.2 Factors affecting patients' experience of pain in the ED

Several factors presumed to affect the perception of pain are described in the literature. Such factors are the patients' religion, cultural origin (Hawthorn & Redmond, 1999) and age (Helme

& Gibson, 2001), sex hormones, genetic factors, gender roles, patients' pain coping (Bartley & Fillingim, 2013) and emotional factors such as anxiety (Craven et al. 2013) may be presumed to affect the patient's perception of pain. Sex differences in nociception may also have an effect on patients perceived pain with women perceiving or expressing more clinical and experimental pain than men (Pieretti et al., 2016). The extent to which all of these factors affect the patients' experience of pain in the ED is not well established, but Craven et al. (2013) report that 74.3% of patients presenting at the ED with pain had some form of anxiety. They also found that higher anxiety scores were related to higher pain scores. Similar findings have been reported by Oktay et al. (2008) and Tanasale et al. (2013).

Inadequate pain management that cause a delay in administering analgesia may lead to increased suffering, fear and anxiety, and this may theoretically lead to increased pain. In addition, inadequate or suboptimal pain management may result in patient frustration and aggression. In acute pain, the release of stress hormones that occurs can lead to circulatory and respiratory complications (Macleod et al., 2002). Providing the patient with analgesics reduces the stress and the risk seen in these complications (Werner, 2010). It is emphasized that acute pain and stress associated with trauma may cause increased mortality and morbidity and, considering this, regardless of which factors affect the patients' pain, the pain should be treated to reduce the individual's suffering (Miclescu, 2014).

Since pain is a complex phenomenon, a disabling accompaniment of many different medical conditions, and is affected by both neural mechanisms and the patient's sex, age and emotional experiences, it is therefore essential to assess the patients' pain before treatment and/or alleviation of the pain.

2.1.3 Assessment of the patient's acute pain

The cornerstone of optimal pain management is the assessment of the pain experienced by the patient (Fink, 2000). Pain should not only be measured with a valid, objective tool, but it should also be reassessed frequently to optimize pain management since the assessment of pain is crucial for optimizing pain management interventions (Stang, Hartling, Fera, Johnson, & Ali, 2014). The ability to quantify the intensity of pain is essential when assessing and evaluating the care for persons with acute pain (Hawthorn & Redmond, 1999). By using a pain rating scale in pain assessments, the likelihood of administering pain medication in the ED was increased (Silka, Roth, Moreno, Merrill, & Geiderman, 2004; Stalnikowicz, Mahamid, Kaspi, & Brezis, 2005).

The most important single parameter in pain assessment is probably the patient's self-reported level of pain intensity. Since feelings of pain and suffering are individual, so is the assessment of pain based upon the use of the patients' self-reports (Hawthorn & Redmond, 1999; Jensen & Karoly, 2011; Norrbrink, Lund, & Lundeberg, 2014; Werner, 2010). Professionals' assessment based on the patient's behavior is not generally reliable and the professionals' often underestimate the patient's pain (Guru & Dubinsky, 2000; Puntillo, Neighbor, O'Neil, & Nixon, 2003).

A common used way to measure the acute intensity of pain in adults in the clinical setting is to use pain rating scales. The most used scales in the ED setting are the Visual Analogue Scale (VAS) and the Numerical Rating Scale (NRS) (Miclescu, 2014). The VAS usually comprises a horizontal line, 100 mm in length, anchored by word descriptors at each end, i.e., 0, no pain – 100, very severe pain. Use of the VAS usually involves letting the patient move a cursor over the 100-mm scale. The NRS usually includes 11 points, from 0 to 10, where 0 means no pain and 10 means the worst possible pain. Patients rate the intensity of their pain by entering the number that best describes their pain (Norrbrink et al., 2014). The VAS and the NRS have both been evaluated for use in the ED (Bahreini, Jalili, & Moradi-Lakeh, 2015; Bijur, Latimer, & Gallagher, 2003; Bijur, Silver, & Gallagher, 2001; Göransson, Heilborn, & Djarv, 2016; Williamson & Hoggart, 2005). The NRS is easier to use since no equipment is needed and, therefore, it might be more suitable to use in the ED (Göransson et al., 2016; Williamson & Hoggart, 2005). The choice between the VAS and the NRS can therefore be based on subjective preferences (Breivik, Bjornsson, & Skovlund, 2000). The NRS has been used in the present studies.

In non-verbal children/adults and patients with impaired cognitive function, behavioral pain assessment instruments are used. Pictures or face scales, photographs or line drawings that illustrate facial expressions of persons experiencing different levels of pain can be useful when assessing pain in individuals who vary with respect to cognitive function (Jensen & Karoly, 2011). However, RNs may find it demanding to assess and manage pain in cognitively impaired patients, but with a specific pain scale for cognitively impaired patients, the RNs felt more secure when detecting, assessing and managing pain in these patients (Fry, Arendts, & Chenoweth, 2016). Nevertheless, the cognitively impaired patients have an increased risk of undertreated acute pain (Green & Bernoth, 2016; Morrison & Siu, 2000) if the acute pain assessment is not done with a patient-adjusted pain scale, such as the Cognitive Impairment Pain Assessment Scale (McCorkell, Harkin, McCrory, Lafferty, & Coates, 2017).

2.1.4 Oligoanalgesia

The term oligoanalgesia, defined as underuse of analgesics/inadequate treatment of pain, was highlighted in 1989 (Wilson & Pendleton, 1989), but as early as 1973, researchers reported on inadequate pain management in medical inpatients (Marks & Sachar, 1973); consequently, oligoanalgesia is not a new phenomenon. However, after these publications, numerous researchers in different settings have conducted studies with results indicating that patients are still at risk of oligoanalgesia (Arendts & Fry, 2006; Daoust, Paquet, Lavigne, Sanogo, & Chauny, 2014; Hwang, Richardson, Harris, & Morrison, 2010; Ko et al., 2016; Platts-Mills et al., 2012). Oligoanalgesia may also occur in the ED setting (Todd et al., 2007); trauma patients' ≥65 years of age are less likely to receive analgesia than younger patients (Quattromani et al., 2015; Taylor et al., 2017). Cognitively impaired patients have an increased risk of undertreated acute pain (Green & Bernoth, 2016; Morrison & Siu, 2000). Non-pregnant adult women with acute abdominal pain had to wait longer than men to receive analgesia (Chen et al., 2008). Language barriers may also cause oligoanalgesia due to a delay in the management of pain (Mitchell, Kelly, & Kerr, 2009). Demographic characteristics such as race, age and sex are known to cause inadequate pain management in the ED (Chen et al., 2008; Heins et al., 2006; Platts-Mills et al., 2012). However, in contrast to the risks of oligoanalgesia, another study shows similar analgesia and opioid administration for pain-related complains among geriatric and non-geriatric patients (Cinar et al., 2012) and there is also a trend indicating that the pain management for patients with acute fractures has been improved (Ritsema, Kelen, Pronovost, & Pham, 2007).

Nevertheless, poor pain management resulting in oligoanalgesia might lead to increased patient suffering (Bible, 2006) and there are several barriers to achieving optimal pain management.

2.1.5 Barriers in pain management

It is known that there are certain barriers to pain management in the ED setting (Duignan & Dunn, 2009; Rupp & Delaney, 2004; Tanabe & Buschmann, 2000). According to the Agency for Healthcare Research and Quality, three main areas, *healthcare- related, caregiver characteristics* and *patient-related ones,* can be used to distinguish these barriers (Duignan & Dunn, 2008a). A Dutch study from 2012 differentiated the barriers in a similar manner (Berben, Meijs, van Grunsven, Schoonhoven, & van Achterberg, 2012).

The *healthcare-related* barriers in pain management may be caused by such factors as a lack of time, RNs´ knowledge of pain, the management, and the clinical guidelines (Dale & Bjornsen, 2015; Duignan & Dunn, 2008a; Furjanic, Cooney, & McCarthy, 2016; Moceri &

Drevdahl, 2014). The second area causing barriers in pain management is the *caregiver characteristics*. These include staff attitudes, beliefs concerning analgesia and under-assessment of pain (Marinsek et al., 2007; Moceri & Drevdahl, 2014). Low congruence is found between RNs and patients regarding the assessment of the intensity of the patient's pain, thereby resulting in an underestimation (Duignan & Dunn, 2008b; Guru & Dubinsky, 2000). The last area concerns *patient-related* barriers. These barriers signify that there are factors in the individual patient which are an obstacle to the caregivers being able to provide adequate pain management. One reason for patients with painful conditions not wanting analgesics could be a feeling that the pain is tolerable (Singer, Garra, Chohan, Dalmedo, & Thode, 2008). Factors for not wanting analgesics also include a wish to identify the underlying cause of pain, taking analgesics at home before admission, a fear of side effects and pain tolerance (Allione et al., 2011; Nicol & Ashton-Cleary, 2003; Stalnikowicz et al., 2005). Another cause for the refusal of analgesics by the patients may be that they see suffering as something noble and have a fear of undesirable consequences, such as addiction and loss of control (Duignan & Dunn, 2008a; Hawthorn & Redmond, 1999).

Another barrier that might fit into the healthcare-related area of pain management in the ED is the complexity of crowding in the organization. Sometimes the term overcrowding is used, but the two terms crowding and overcrowding are often used to refer to the same situation. According to Moskop, Skar, Geiderman, Schears & Bookman (2009), the term crowding should be used when describing the situation in the ED setting. Furthermore, the authors consider the possibility that the phenomenon may also imply a moral hazard when activities involving confidentiality, privacy and person-centered care are compromised. There are several factors that contribute to ED crowding, e.g., increased numbers of patients who come to the ED, decreased inpatient beds and nursing staff shortages (Johnson & Winkelman, 2011). Furthermore, Johnson & Winkelman (2011) argue that the quality of care is impacted during crowding, resulting in delays in the administration of medication and reduced patient satisfaction. Crowding can also result in a long time in the ED and the patients tending to feel dissatisfaction and sometimes conceptualizing themselves as being marginalized (Frank, Asp, & Dahlberg, 2009b). Eriksson (2015) states that suffering from care is an unnecessary suffering that should be eliminated in every way. Barriers to pain management in the ED setting pose a risk of creating suffering from care. With regards to crowding in relation to pain management, several researchers have described how ED crowding seems to be associated with a poorer quality of such management (Bergman, 2012; Bernstein et al., 2009; Forero et al., 2008; Hwang et al., 2008; Hwang, Richardson, Sonuyi, & Morrison, 2006; Mills, Shofer, Chen, Hollander, & Pines, 2009; Pines & Hollander, 2008; Pines, Shofer, Isserman, Abbuhl, & Mills, 2010).

2.1.6 Actions to reduce the risk of oligoanalgesia in the ED

Previous actions aimed at reducing the risk of oligoanalgesia in patients in the ED have been carried out and evaluated. One such conducted study shows that the documented pain assessment improved after implementing a quality standard for assessing pain (Ritsema et al., 2007). Education and implementation of guidelines lead to improved pain management, analgesia and increased patient satisfaction in the ED (Decosterd et al., 2007; Van Woerden et al., 2016). However, another study indicates that even if guidelines are present, caregivers have a tendency not to follow the guidelines (Scholten et al., 2015). By making pain assessments mandatory, the provision of initial analgesia became faster (Vazirani & Knott, 2012) and another way to improve the management of pain in the ED could be to use a nurse-initiated pain protocol (NIPP) (Pretorius, Searle, & Marshall, 2015; Stalnikowicz et al., 2005). Despite the above described actions aimed at reducing the risk of oligoanalgesia in the ED, study findings on the link between pain management and patient satisfaction with pain management in the ED have generated conflicting results (Downey & Zun, 2010; Finn et al., 2012; Kelly, 2000; Muntlin, Carlsson, Safwenberg, & Gunningberg, 2011).

2.1.7 Nurse-initiated pain protocol

A nurse-initiated pain protocol (NIPP) is defined as 'initiation of analgesia by an RN, using a predefined protocol, prior to the patient being assessed by a physician (Kelly, Brumby, & Barnes, 2005). In Sweden, the National Board of Health and Welfare (SOSFS 2000:1) states that the NIPP is the prescription of medicines relating to the patients under certain specified conditions, without a specific individual prescription needing to be given. It is also stated that the NIPP should provide clear indications and contraindications and dosages and that these should be issued restrictively (Socialstyrelsen, 2000). The analgesics in the NIPP used most frequently in the ED include such items as paracetamol, non-steroidal anti-inflammatory drugs (NSAIDs) and opioids (Finn et al., 2012; Pierik et al., 2016; Tanabe, Martinovich, Buckley, Schmelzer, & Paice, 2015). The NIPP is usually developed on the hospital level.

Using the NIPP have been shown to increase documentation on the patients scored pain (Finn et al., 2012) and to reduce the intensity of pain in patients with moderate pain (Fry et al., 2004). Time to use of analgesics has also been shown to be reduced by using the NIPP (Barksdale, Hackman, Williams, & Gratton, 2016; Campbell, Dennie, Dougherty, Iwaskiw, & Rollo, 2004; Dewhirst, Zhao, MacKenzie, Cwinn, & Vaillancourt, 2017; Douma, Drake, O'Dochartaigh, & Smith, 2016; Fosnocht & Swanson, 2007; Fry & Holdgate, 2002; Kelly, Brumby, & Barnes, 2005; Muntlin et al., 2011).

Increased analgesic administration has also been demonstrated in adults after implementation of the NIPP in the ED (Muntlin et al., 2011; Ridderikhof et al., 2016). The NIPP has a positive impact on patient satisfaction and the patients perceived improved quality of care and an increased likelihood of receiving analgesia (Cabilan & Boyde, 2017; Muntlin et al., 2011). The patients feel less ignored because they get the impression that something is being done with them (Seguin, 2004). Adequate analgesia is defined as being a reduction in the pain score of ≥2 and to a level <4, and this is associated with patient satisfaction (Shill et al., 2012). Despite these advantages of the NIPP, the patients are still not satisfied with the pain management in the ED (Finn et al., 2012).

2.1.8 Registered Nurses' perception of pain management in the ED

In most cases in Sweden, the RNs are the first professionals assessing a patient seeking care in the ED. Whether or not that initial assessment takes place at bedside or in the triage area, the RNs assess the severity of the patient's illness using a triage protocol and they make decisions about how quickly the patient needs to be examined by a physician. In the first encounter, the pain assessment is part of the RNs' decision making. As a result of this, it is the RNs who establish the pain assessment along with the patient and set the timeline for pain relief, and it is also the RNs' responsibility to make sure that the patients receive care while waiting (Bucknall, 2003) and receive alleviation for any suffering (Eriksson, 1992). In the assessment, it is not only identifying and knowing that the patient is in pain, but they must also genuinely care about older patients to provide good pain management and care in the ED (Kihlgren, Nilsson, & Sorlie, 2005), this applies to all patients attending the ED. However, according to the RNs' perceptions concerning pain management, a lack of teamwork may give rise to a barrier to ideal pain management (Bergman, 2012). The RNs perceptions about using objective assessments of the patient's pain rather than the patient's self-reported level of pain intensity (Bergman, 2012) may also reduce the possibility of delivering good pain management and care.

The RNs' perception of pain management in the ED is described as challenging (Gorawara-Bhat, Wong, Dale, & Hogan, 2017) and the ED environment as hindering the RNs from demonstrating caring when managing patients' acute pain (Bergman, 2012). In the National Board of Health and Welfare documents concerning competency for RNs, it is stated that the RNs should have the ability to communicate with patients and families in a sensitive, respectful and empathetic way. The RNs should also pay attention to the patient's suffering and, as far as possible, relieve the patient's experience of illness (Socialstyrelsen, 2005). The competences of the RN include an overall perspective of the patient's situation, including issues that concern, for example, pain.

The nurse is responsible for consulting with other members in the team, if necessary, and for supplementary skills, such as those regarding pain (Svensk sjuksköterskeförening, 2017). The perceptions of the RNs described by Bergman (2012) and in the National Board of Health and Welfare recommendations may constitute a paradox when the ED environment is described as a hindrance to caring. Nevertheless, the RN plays an important role in pain treatment and can affect the physician regarding the selection of analgesic. In some cases, the RN can also take an independent decision concerning which analgesics should be chosen and the dose to be administered, and it is therefore important that the RN has the required pharmacological knowledge. It is the perception of the RNs that they need to invent and use strategies emanating from their own professional knowledge, skills and lived experiences when assessing the patients' pain, instead of using previously validated assessment tools (Gorawara-Bhat et al., 2017). As mentioned earlier, pain is an individual and subjective experience. The cause of pain says nothing about how it will be perceived by the individual patient. It may have more than one physical dimension; it can also include an emotional component that should be considered if it is to be treated successfully. RNs who care for patients must remember that dialogue and interaction are crucial for successful care (Pytel, Fielden, Meyer, & Albert, 2009) and pain management (Hawthorn & Redmond, 1999). It is important that ED nurses listen closely and actively to the patient and not only to the words, but also to the meaning behind the words. When the patient's voice is heard, considerable patient participation exists. They are shown respect for their self-determination by being able to understand suffering. It is also important for the patients to be looked upon as human beings and for this to be the starting point for healthcare activities. To have the patient's needs in mind as a starting point for healthcare activities is to facilitate patient participation (Frank et al., 2009b). In addition to the caring aspects described above to achieve good pain management in the ED, it is the perception of the RNs that pain management protocols, courses and champions could enable improvement in pain management in the ED (Pretorius et al., 2015).

2.2 RATIONALE FOR THE STUDY

Pain is the most common reason for patients to seek care in the ED and pain management needs to have a primary focus since effective pain management is associated with patient satisfaction, earlier mobilization and shortened hospital stays. Despite this knowledge, there are still barriers to pain management in the ED which cause an increased risk of oligoanalgesia for the patients seeking care in there. Several previous studies in the context of the ED have evaluated actions aimed at improving pain management, but without further knowledge from the patients and the RNs' perspective, it might not be possible to further improve pain management.

This statement and the rationale for the studies conducted here are based on the considerable amount of previous research on pain management in the ED and the fact that the patients are still not satisfied with the pain management or that their perceived needs are not being met.

3 AIMS

The overall aim was to explore patients' and nurses' perception of pain management in the Emergency Department.

Specific aims were:

Study I

The aim of this study was to describe acute pain from the patients' viewpoint and to consider their own pain medication prior to attending the Emergency Department.

Study II

The aim of this study was to describe the frequency of documented pain assessments in the Emergency Department.

Study III

The aim of this study was to explore the patients' satisfaction with pain management before and after the implementation of mandatory documentation of pain assessment in the Emergency Department.

Study IV

The aim of this study was to explore RNs' own experience of using the NIPP in the Emergency Department in relation to their working experience.

4 ETHICAL CONSIDERATIONS

Research is an important part of healthcare and community development. However, this must not be done by exposing patients or other individuals to harm, abuse or pressure of another form. The researcher should inform the study participants of the research purposes. Furthermore, they should be informed that participation is voluntary and that they have the right to withdraw their participation at any time. Patients included in the study should also be assured the utmost confidentiality and individual participants should not be identifiable by outsiders according to Good Research Practice (EPN, 2012). In the conduced studies, all study participants participated voluntarily and oral and written information about the studies was given. Informed consent was obtained from the participants in Studies I and III. Confidentiality was assured to all participants. These patients were seeking acute care at the ED, this may have involved an ethical risk since they could be vulnerable when seeking help in an acute situation. However, no patient was persuaded to participate and all patients were assured that participation or non-participation in the study would not affect the care delivered in the ED. The data obtained from the questionnaires were evaluated as making 'no emotional demand' on the patient and all patients asked to participate had the autonomy to decline participation. In Study III, the questions concerned the patient's experience of pain management in the ED and this can be regarded as sensitive if the patient is suffering and is not satisfied with the care delivered. Nevertheless, the short-term advantage/disadvantage of participating was assessed to be minor, if any at all, and the long-term advantage of participating in the studies was judged to be beneficial for acquiring knowledge concerning acute pain from the patients' viewpoint. All four studies were conducted in the researchers' own practices and therefore some specific ethical aspects need to be highlighted, especially concerning Study IV. To ensure anonymity, the participants' questionnaires were not coded and the anonymous questionnaire was put in a letter-box. By collecting data in this way, it was not possible for the researcher to identify the RNs and the participants' integrity, anonymity and confidentiality were assured.

According to the Declaration of Helsinki – Ethical Principles for Medical Research Involving Human Subjects, a research protocol must be submitted for consideration, comment, guidance and approval to the concerned research ethics committee before the study begins (World Medical Association, 2017). The present studies were approved by the Ethical Review Board in Stockholm, Sweden (Diary number 2008/991-31/3), and by the heads of the EDs.

5 MATERIALS AND METHODS

Both prospective and retrospective study designs were used to acquire knowledge about the patients' and the RNs' perceptions of pain management in the ED, as shown in Table 1.

5.1 STUDY DESIGN AND SETTING

Table 1. *An overview of the studies included in the thesis.*

Study	Design	Population	Data collection	Data analysis
I	Prospective survey	647 patients	Questionnaire	Descriptive statistics, logistic regressions
II	Cross-sectional study	840 patients	Medical record	Descriptive statistics
III	Observational pre-post intervention study	80/80, n = 160 patients	Questionnaire	Descriptive statistics, Fisher's exact test, Pearson's Chi-square test
IV	Cross-sectional study	70 RNs	Questionnaire	Descriptive statistics, Content analysis

In Study I, a prospective survey lasting 24 hours in all seven EDs for adults in Stockholm County Council was performed. The aim of using a prospective survey was to examine the prevalence of pain, pain localization, pain intensity and the number of patients taking pain medication before arrival at the ED. No referral is needed to seek care in a Swedish ED. The EDs participating in the study were located at a university hospital (n = 1), public suburban teaching hospitals (n = 3) and public urban teaching hospitals (n = 3). In 2016, the yearly visiting rates at the EDs varied between 23,157 and 114,901. In all seven EDs, the routine was as follows: if the patient needed pain medication, the triage nurse[1], or equivalent, could administer analgesics according to the local NIPP.

In Study II, a cross-sectional study design was used. A cross-sectional design makes it possible to acquire prevalence measures of exposure and outcome at a specific point in time. The study was conducted in patients (>15 years old) seeking care in the ED with wrist/arm fractures or soft tissue injuries at a public urban teaching hospital in Stockholm during 2006–2012. The

[1] A registered nurse who makes a first assessment on incoming patients to the emergency department. The author's comment.

patients were treated by orthopaedic surgeons or emergency physicians and by RNs with and without additional emergency care training. Before the study started, written information was delivered to the RNs concerning a new guideline and policy programme introduced in 2002. The guideline and policy programme clearly stated that all patients presenting with pain in the ED should have their pain assessed and documented. During the study period, interventions were carried out in the ED with the aim of improving the RNs' assessment and documentation of the patients' pain. The interventions were:

1. In 2006, a report on pain (Stockholms läns landsting, 2006) was published and made available to all personnel in the ED.
2. In September, 2007, a group of personnel with a special interest in and knowledge of pain was formed in the ED. The group consisted of six RNs and two nurse assistants, all working in the ED. The overall purpose of the group was to educate and facilitate the work of other personnel in the ED to increase pain assessment and documentation. The group communicated their message in various types of staff meetings.
3. Early in 2008, the manager of the ED stated that the NRS should be used as the primary pain rating scale in the ED. In addition to this statement about the use of the NRS, training in how to use the pain rating scale was given in the ED. The RNs were also instructed to document the NRS score in the patient's medical record when the patient arrived at the ED.
4. In May, 2008, a reminder concerning pain assessment and the use of the NRS was noted in the patients' medical records.
5. In January, 2009, the patients were informed about the pain rating by the triage nurse.
6. In October, 2010, the patient medical report was computerized and pain assessment became mandatory.

Study III was an observational pre-post intervention study. The reason for using a pre-post intervention study design was to investigate whether the intervention had an impact on the investigated population. The study was conducted on patients with such acute musculoskeletal injuries as soft tissue injury, back pain or wrist/arm/leg/foot fractures and treated in an ED at a public urban teaching hospital in Stockholm.

Study IV was a cross-sectional study. The aim of using this design was to provide knowledge about RNs' own experience of using the NIPP, based on their working experience. The study was undertaken in the EDs of two urban teaching hospitals in Stockholm.

Both hospitals served all adult patients with surgical, cardiological, orthopaedic and internal medicine requirements, and no referral was needed.

5.2 DATA COLLECTION

In Study I, data were collected over 24 hours from 7.00 a.m. on 18 May (Monday) until 7.00 a.m. on 19 May (Tuesday) 2009. Data were gathered from the patients via a questionnaire-based interview by the RN in connection with the first assessment of the patient's condition on arrival at the ED (Appendix I). Apart from demographic data, the patients were asked:

1. if they were in pain or not – yes or no;
2. if they had taken any analgesics to alleviate the pain before arriving at the ED and, if so, what kind of analgesic;
3. to rate the severity of their pain between 0 and 10, using the NRS;
4. to mark the location of their pain on a drawing depicting a human being.

A pain illustration was used to let the patients mark the location of their pain. Pain drawings are frequently used for clinical assessments of patients with pain (Barbero et al., 2015). Regarding the question concerning pain intensity, the patients were asked to put a mark on a scale (0–10) on the questionnaire where 0 meant *no pain* and 10 meant *worst possible pain*. Both the VAS and the NRS are valuated to measure pain in the ED setting (Göransson et al., 2016). A pilot test of the developed questionnaire was done in the surveyed patient group before the survey was conducted. According to Polit & Beck (2006), it is useful to run a pilot study to determine whether the questionnaire is generating the desired information and if the participants understand the questions. The questions used were developed out of the research questions aimed at investigating the prevalence of acute pain from the patients' view point and their own pain medication prior to attending the ED. There was a gap of knowledge in Sweden regarding these issues. The inclusion criteria were: Age >15 years, Swedish-speaking and having given consent to participate in the study. Exclusion criteria were: Patients having an acute life-threatening condition were excluded. The RN conducted the data collection and completed the questionnaire, guided by the answers given by the patient during the first assessment.

In Study II, the patients' medical records were used for data collection to assess the frequencies of pain ratings over time. Medical records were used since the research question was raised based on how often a pain assessment was documented in the patient's journal.

The inclusion requirements were: the first ten patients' medical records in the admission system of the ED for adult patients (≥15 years old or older) every month during 2006–2012 (= 120 patients/year) with wrist/arm fractures or soft tissue injuries on the upper extremities. After exploring the frequency of documentation regarding the pain assessment, the patients included needed to have received analgesics. Patients with wrist/arm fractures or soft tissue injuries on the upper extremities were selected because they are a common group of patients in the ED (Court-Brown and Caesar 2006). Patients with fractures can also be easily identified by the triage nurse. According to the local guidelines implemented in 2002, the RN can administer oral and/or intravenous pain medication, using the NIPP. The NIPP at the hospital states that the RN should assess the patients' pain using the NRS, including pain assessment documentation before and after administering analgesics. The patients' medical records were reviewed and the collected variables consisted of pain ratings according to the NRS, reassessment of the pain rating (yes or no), and such demographic characteristics as gender and age. All collected variables were manually entered in Excel.

In Study III, a questionnaire containing eight questions was used for data collection (Appendix II). Three questions concerned experiences of the patient, including satisfaction with the pain management in the ED. These three questions are the same as the questions used in the IC Quality National Patient Survey. The national patient survey is co-ordinated by the Swedish Association of Local Authorities and Regions and all county councils in Sweden have used the National Patient Survey regarding patient-perceived quality and experience of health care since 2009. The questionnaire also consisted of two demographic questions (age and gender), one question asking if the patient had been taken any analgesics prior to attending the ED (yes or no) and two questions about the intensity of pain, using the NRS. The questionnaire was pilot-tested for content and face validity by asking 11 patients to answer and reflect on the questions. Small changes were made in the questionnaire after the pilot testing. The changes consisted of clarification of the vocabulary, adding a question regarding pain medication at home and another regarding pain intensity in connection with discharge. The questionnaire was filled in by a triage nurse when interviewing the patient at admission and discharge from the ED. The number of patients considered to be sufficient to detect a 30% change in pain management was calculated to be 55 with a power of >80% and with a p-value of 0.05. Patients with such acute musculoskeletal injuries as soft tissue injury, back pain or wrist/arm/leg/foot fractures and who understood Swedish were included in the study. Patients having an acute life-threatening condition were excluded. The patients were included as a convenience sample due to the availability and the easy access.

The pre-intervention data collection started on 1 March, 2010, seven months before implementation of the mandatory documentation of pain assessment in the ED, and it ended on the 11 March when 80 patients had answered the questionnaire. The post-intervention started on the 1 November and ended when 80 patients had answered the questionnaire.

Study IV was a cross-sectional study using a questionnaire for data collection (Appendix III). The questionnaire consisted of 12 questions covering the RNs' age, gender, work experience at the ED, educational level and questions concerning the RNs' experience of using the NIPP. The questions were closed-ended, but the RNs had the opportunity to respond to five of the questions concerning the extent to which they used NIPP; hindrances to using the NIPP; whether they administered less analgesics compared to the NIPP; whether they administered more analgesics compared to the NIPP; and whether the NIPP was adequate to relieve pain in patients cared for in the ED. The questionnaire was validated by face validity, using a group of experienced RNs to read and comment on it. The researchers made minor changes in the questionnaire to clarify the purpose of the questions. A total of 165 questionnaires were distributed and one reminder was sent out to all the RNs.

5.3 DATA ANALYSIS

Data based on a quantitative analysis of the research questions were used in Studies I, II and III. In Study IV, a qualitative analysis of the RNs' written comments in the questionnaire was performed in addition to the quantitative analysis.

5.3.1 Quantitative analysis

Descriptive statistics were calculated for all variables in Studies I, II, III and IV. Descriptive statistics were used to describe the distribution of the collected variables. In addition to the descriptive statistics in Study I, univariate and multivariate binary logistic regressions were used to determine the association between pain and the variables sex, age and taking analgesics prior to the visit. P-values of less than 0.05 were considered statistically significant, which is the most common standard (Billhult, 2012).

In Study II, medical records were examined regarding documentation of initial pain assessments and reassessments post analgesia from 2006 to 2012. During the study period, various actions were introduced separately to increase the frequency of documented pain assessments (see page 24). The patients' medical records were examined to determine whether the various actions had affected the frequency of documented pain assessments.

In Study III, the data on patients' satisfaction with the pain management in the ED were dichotomized as yes/no. The intensity of pain was analysed as a continuous variable (0–10). The categorical variables were compared using Fisher's exact two-tailed test and Pearson's Chi-square tests, depending on the used level of data. P-values of less than 0.05 were considered to be statistically significant also in Study III.

In Study IV, data such as age, gender, working experience and previous education are presented using descriptive statistics. To compare the impact of working experience, the variable working experience was dichotomized into 1 = 0-5 years and 2 = >6 years, based on a theory that experience will make a change in RNs' knowledge (Benner, 1984; Blegen, Vaughn, & Goode, 2001; Clarke, Rockett, Sloane, & Aiken, 2002). The RNs were asked to specify their additional training (specialist training on an advanced level and/or additional training in pain management), and this was also dichotomized into the categories yes or no. The RNs' reflections on using the NIPP were dichotomized as 1 = always, 2 = never. Answers to the questions concerning always giving more or less than the stated dosage in the NIPP were dichotomized into yes/no. Dichotomized variables were compared using Pearson Chi-square tests; p-values less than 0.05 were considered statistically significant.

All statistical data were analyzed using SPSS version 20.0 and 23.0 (IBM Corporation, Somer, NY, USA).

5.3.2 Qualitative analysis

In Study IV, the analysis of the RNs' responses to questions in the questionnaire was inspired by summative content analysis as described by (Hsieh & Shannon, 2005). Content analysis is a method that enables a systematic categorization of data collected from verbal, visual or written text. The analyses of the data can range from a manifest to a latent level, from a concrete to an abstract level (Graneheim & Lundman, 2004). When using content analyses it is also possible to quantify specific phenomena (Hsieh & Shannon, 2005; Krippendorff, 2004). In Study IV, a manifest analysis was conducted and the comments written by the RNs were quantified based on their working experience. The first step in the qualitative analysis consisted of transferring all RNs' responses onto an electronic record sheet. The responses from RNs with experience 0-5 five years (n = 31) were marked with yellow and the responses from RNs with an experience of > 6 years (n = 32) were marked with green. The purpose of colouring all responses was to make it possible to follow the less and more experienced RNs' responses throughout the analysis. The next step consisted of coding the response pertaining to the RNs'

use of the NIPP. Codes with a similar content were then transformed into categories. During the analysis, there was a constant movement forward and backward between the RNs' written responses, codes and categories to preserve the core of the RNs' responses concerning their use of the NIPP.

6 RESULTS

6.1 STUDY I

The aim of Study I was to describe acute pain from the patients' viewpoint and for them to consider their own pain medication prior to attending the ED. Six-hundred and forty-seven of 1344 patients participated. Out of the 647 enrolled patients, 500 (262 female and 238 male) patients (77%) stated that pain was present when they arrived at the ED. In the group of patients with reported pain, 69% reported moderate to severe pain (NRS ≥5) and 30% had a pain intensity of 8 or more. The mean severity of pain among the patients with pain was 5 (SD = 2.9) on the NRS. There was no statistically significant association between reported pain and gender. Differences in age in relation to reported pain were found with an inverse association between pain and age, with the odds of having pain nearly six times higher for a person <30 years old, compared with a person >60 year old. The most common locations of pain reported by the patients were: abdomen/genitals (25%), lower extremity (25%) and chest/thorax (25%).

The aim was also to investigate the patients' own pain medication prior to attending the ED. Out of the 500 patients with reported pain, 336 patients (67%) had not taken any pain medication prior to attending the ED. There was no significant difference between gender and whether they had taken any pain medication prior to attending the ED. The two most common analgesics used by the patients prior to attending the ED were paracetamol and NSAIDs.

6.2 STUDY II

The aim of Study II was to describe the frequency of documented pain assessments in the ED among patients with wrist/arm fractures or soft tissue injuries in the upper extremities and who had received analgesics at the ED during years 2006–2012. During the study period, the number of patients with wrist/arm fractures or soft tissue injuries increased from 1353 to 1657. A total of 840 patient medical records were reviewed. The included patients were predominantly females (66%). The median age of the women was 61 and, of the men, 35.5.

During 2006, the guidelines concerning the assessment and documentation of pain were implemented in the ED, but adherence was poor. In September, 2007, a group of personnel with a special interest in pain was put together with the aim of facilitating pain management and the frequency of documented assessed pain increased from 0 to 47.5% (mean) for a short period from 31 August, 2007, to 1 January, 2008. Regardless of various actions, there was no sustained effect until the documentation became mandatory and computerized during 2010. Between the years 2004 and 2009, the average percentage of documented pain assessments was 24% and, from October, 2010, to September, 2012, the average was 86%. Even though all

patients received pain medication, no documentation of the reassessment of pain was found in their medical records.

6.3 STUDY III

The aim of Study III was to explore the patients' satisfaction with pain management before and after the implementation of mandatory documentation of pain assessments in the ED. The questionnaire used was answered by 160 (80/80) patients and there was a gender balance in the group. Over 90% in both groups reported pain during their stay in the ED. In both groups, 52.5/46.8% had taken analgesics prior to the ED visit. A significant difference was found during the post-intervention period, with more patients (68%) receiving analgesics compared to 41% in the pre-intervention group (Chi^2 =11.73, df =2, p = 0.003). A significant decline in the patients' own reported pain intensity at discharge was found between the groups (Chi^2 = 8.64, df = 3, p = 0.03). The patients' pain intensity according to the NRS decreased from admission to discharge in both the pre-intervention group (5.8 vs 4.6) and the post-intervention group (6.1 vs 4.3). The patients' own reported satisfaction with pain management in the ED showed that 65% were satisfied in the post-intervention group, compared to 51% in the pre-intervention group, but the difference was not significant. Six patients in the pre-intervention group and three in the post-intervention group reported a 10 in pain intensity at discharge according to the NRS.

6.4 STUDY IV

The aim of the study was to explore RNs' own experience of using the NIPP based on their working experience. Forty-two per cent (n=70) responded to the distributed questionnaire; demographics on the participation RNs are decribed in Table 2. Sixty-one per cent (n = 43) of them considered the NIPP to be adequate for relieveing patient´s acute pain in the ED. No significant difference was found between the two groups (working experience 0–5 years and >6 years) and how the RNs used the NIPP. A non-significant (p = .09) difference indicated that RNs with longer experience may administer more pain mediciation than described in the NIPP. The qualitative analysis of the RNs' own comments resulted in three categories: *The RNs adapt the NIPP based on the patients' needs*; *the NIPP does not cover all patients' needs of pain relief;* and *the RNs use the NIPP based on their own abilities and the context*. The quotes in the following sections are aimed at shedding light on the identifyed categories.

Table 2. *Descriptions of participants (n = 70) answering the questionnaire concerning use of nurse-initiated pain protocols.*

Age, years	n	%
20–30	27	39
31–40	17	24
41–50	16	23
51–60	10	14
Gender	n	%
Male	19	27
Female	51	73
Working experience -ED	n	%
0–5	38	54
>6	32	46
Education on advanced level	n	%
Yes	15	21
No	54	77
Missing	1	2

The RNs adapt the NIPP based on the patients' needs

The more experienced RNs (>6 years) described how they took into account the patients' medical status, such as weight, age and previous illnesses in the selection and adjustment of the dosage and analgesics in the NIPP, and the adjustment of dosages included both higher and lower doses of analgesics, compared to the NIPP: '*If the patients take strong painkillers at home, such as Dolcontin® (morphine sulphate pentahydrate), they may need more analgesics than described in the nurse-initiated pain protocol.*' The less experienced RNs (0–5 years) also adjusted the analgesic dosages on the basis of the patients' needs, but only when they assessed a lower dosage than described in the NIPP; when a higher dosage of analgesic was needed, the RNs with less experience asked for a prescription from the physician; '*some illnesses like shoulder dislocation need more analgesics than prescribed in the protocol and then I just ask the physicians for more.'*

The NIPP does not cover all patients' needs of pain relief

Several of the nurses felt that the NIPP was insufficient in patients with acute abdominal pain: '*All patients with abdominal pain also need pain relief, but we are not allowed to give it to them according to the protocol.'* The RNs also wrote that the protocol was insufficient since there was a lack of different analgesics to choose from when patients needed analgesics: *'The*

dosages are too low in the protocol, patients get better pain relief by the ambulance personnel.' Again, it was found that the more experienced RNs (>6 years) did not think that the NIPP took into account the patients' individual needs.

The RNs use the NIPP based on their own abilities and the context

The RNs described how they became stressed when there was crowding and lack of time at the ED and how the stress become a barrier to administering pain relief in accordance with the NIPP: *'I would give more analgesic if I had the time.'* The more experienced RNs (>6 years) chose to use tablets or lower dosages of injections when the ED became crowded: '*I give low doses of morphine since there is no time to monitor the patients.*' The RNs with less experience (0–5 years) noted that administration of pain relief decreased when the ED become crowded: *'I don't have any knowledge of some of the analgesics and I don't have time to read the protocol.*'

7 DISCUSSION

The overall aim in this thesis was to explore patients' and nurses' perception of pain management in the ED and, overall, the results show that, despite advancements, there still room for improvement on pain management in the ED setting.

7.1 PATIENT REPORTED PAIN WHEN ATTENDING THE ED

That pain is a common reason and symptom for patients to seek aid and care in the ED was shown in our Study I with 77% of the patients reporting pain on arrival. Our results are in line with previous international studies which also describe a large proportion of patients with painful symptoms seeking care in the ED (Cordell et al., 2002; Karwowski-Soulie et al., 2006; Tanabe & Buschmann, 1999; Todd et al., 2007; Wheeler et al., 2010). Despite severe intensity of pain among the adult patients visiting the ED, only 33% had taken an analgesic prior to attending the ED. In previous studies, only 19% and 30%, respectively, of the patients took analgesics prior to attending the ED (Fullarton, 2002; Tasdemir & Celik, 2016). This may indicate that the patients in Stockholm take analgesics to a greater extent prior to attending the ED, compared to patients seeking ED care in Scotland (Fullarton, 2002) and in Turkey (Tasdemir & Celik, 2016). The causes of the differences in the number of patients taking analgesic prior attending the ED are not known, but, theoretically, the differences could have been affected by the amount of knowledge in the population or differences in the sample caused by different health care systems. Regardless of this, the findings in Study I could constitute something positive, but still, only one third of the patients took over-the-counter (OTC) analgesics prior to visiting the ED. The reasons why or why not patients take OTC analgesics prior to seeking care are not answered in our study, but certain questions about RNs' role in pain management prior to visits to the ED arise. Perhaps the RNs should encourage patients to take OTC analgesics prior to attending the ED (Corbally & Gallagher, 2006). Highlighting of recommendations to take an OTC analgesic to the advice given by the RNs on the telephone or by information given to the patients via a website may encourage the patients to administer self-care to a greater extent before visiting the ED. There might, however, be reasons why the patients did not take OTC analgesics prior to attending the ED, some of which are a lack of opportunity or they wish to prevent identification of the source of pain and maybe obscure the diagnosis (Allione et al., 2011), they may have a fear of addiction (Tanabe & Buschmann, 1999) or they simply do not like to take tablets (Nicol & Ashton-Cleary, 2003). In relation to our findings, these previous findings may indicate that the population needs to learn more about the general principles of pain and pain management and self-care, but, undoubtedly, further studies are needed.

In Study I, younger patients assessed the intensity of their pain higher than older ones did. There is a similar reported result that indicates that younger patients with acute pain tend to estimate their pain as being more painful than older patients (Cinar et al., 2012; Marco, Nagel, Klink, & Baehren, 2012). The reasons why younger patients with acute pain give higher estimates of their pain is not fully clear, but one assumption might be that the older patients may have experienced more painful conditions than those who have lived fewer years (Li, Greenwald, Gennis, Bijur, & Gallagher, 2001) or a cognitive failure may occur (Porter et al., 1996). Another explanation could be that age-related changes in the nociceptive perception might lead to reduced pain sensitivity among the elderly patients (Helme & Gibson, 2001). The credibility of the results indicating that younger patients assess the intensity of their pain higher than older ones could be discussed in accordance with the age classification used in Study I. The findings are, however, similar to those in studies conducted after Study I (Cinar et al., 2012; Marco et al., 2012) and therefore one assumption is that the age classification used may not have affected the results. There were no significant gender differences in reported pain in the ED (Study I). This contrasts with other studies which have reported that men were less sensitive and less willing to report pain than women (Defrin, Eli, & Pud, 2011; Grenman, Niemi-Murola, & Kalso, 2008; Raftery, Smith-Coggins, & Chen, 1995). The reasons for no gender differences in our study are not clear, but a reasonable cause of the differences between Stockholm and other study settings might be the selection bias or that other factors possible affecting the patients' expression of pain (Bartley & Fillingim, 2013; Craven, Cinar, & Madsen, 2013; Hawthorn & Redmond, 1999; Helme & Gibson, 2001; Pieretti et al., 2016) were not investigated in Study I.

7.2 MANDATORY DOCUMENTATION OF PAIN ASSESSMENT

In Study II, the findings show how mandatory pain assessments in the patients' computerized medical record became a successful intervention for improving the frequency of documented pain assessments in the ED. The improvement was maintained for almost two years before a slight decline in the frequency of the documentation. This finding is consistent with the findings reported by Vazirani and Knott (2012) concerning the long-term effect of different interventions to improve pain assessment. The findings in Study II showing a decreased frequency of documented pain assessments may indicate that the RNs have found a way to 'work around' the mandatory pain assessment documentation. One assumption, based on clinical knowledge, may be that the RNs have started by documenting that 'it is not possible to assess pain,' instead of assessing and documenting the intensity of the patients' pain according to the NRS. If the decreased frequency of documented pain assessments is caused by a 'work-

around' technique, it may indicate crowding or a lack of knowledge. Another possible cause could be that the RNs assessed the intensity of pain, but did not document the result. Whatever the cause of a decrease in documented pain assessments, further work on improving pain assessment and pain management is needed among RNs in the ED. A remarkable finding in Study II was that there was no re-evaluation of the pain assessment documented in the patient's medical record although pain medication was given. In a large earlier-mentioned multicentre study from the United States and Canada assessing pain management practice, the findings also showed that noted reassessments were uncommon (Todd et al., 2007).

Several attempts using interventions aimed at increasing documented pain assessments were made and evaluated in Study II, but the interventions, like the implementation of guidelines or education, did not have a sustained effect on the documentation of the patients' intensity of pain. These findings differ from studies that showed a positive effect regarding education and the implementation of guidelines (Decosterd et al., 2007; Hogan, Howell, Cursio, Wong, & Dale, 2016). Educational interventions may have an effect, but not always as expected. A Danish study with the purpose of evaluating the effect of a two-hour educational intervention regarding improved pain treatment in the ED detected an increased knowledge of pain management after the educational intervention, but it was not transferred into clinical practice (Friesgaard, Paltved, & Nikolajsen, 2016), interpreted as that the patients did not receive better pain management despite the increased knowledge. This finding may indicate that other factors than knowledge affect pain management in the ED or that the RNs need to become proactive in increasing and using their own knowledge regarding the management of pain (Pretorius et al., 2015).

After the intervention requiring mandatory documentation of the patient's intensity of pain (Study II), there was an increased administration of analgesics, but the intervention did not significantly affect the patients' satisfaction with the pain management (Study III). The amount of analgesics increased in the intervention group and the intensity of their pain, measured on the NRS, improved at discharge from the ED, but there was no significant improvement regarding patient satisfaction. This finding contrasts with other studies where patients receiving analgesic treatment at the ED reported a high degree of satisfaction (Allione et al., 2011; Fallon et al., 2016). It is not clear from the Study III findings why the patients did not become more satisfied after the increased administration of analgesics. One assumption is that there were other circumstances, such as anxiety, that may have affected their satisfaction with the pain management in the ED.

Higher anxiety scores may be related to a higher pain score (Craven et al. 2013; Oktay et al. 2008; Tanasale et al. 2013), but whether higher anxiety scores in combination with pain are related to patient satisfaction is not clear. However, one way to reduce the patients' anxiety and influence their satisfaction during their stay in the ED might be through communication between the patient and the RN (Ekwall, 2013). It is also possible that the ED professionals' care and patient paticipation in the pain management may affect patient satisfaction.

7.3 REGISTERED NURSES' ROLE IN PAIN MANAGEMENT IN THE ED AND THEIR USE OF NIPP

The RNs' first encounter with the patient in the ED is not just about identifying and knowing that the patient is in pain; it is also about making decision about how to triage, initiate pain management and plan for further care of the patient. When an RN in the ED you play a vital and decisive role in providing care. Assessing the intensity of pain is important to the patients' further care and whether they should receive analgesics (Muntlin Athlin, Carlsson, & Gunningberg, 2015). The findings in Study IV indicate that RNs with more experience administer more pain relief according to the NIPP compared to RNs with less experience. One explanation could be that the RNs with less experience did not have the experience of including professional reflections in their decision-making process (Forsberg, 2016). The RNs with more experience might also use their experience of pain management to a higher extent, which could be a reflection on autonomy in their profession. These findings may be intepreted as being in line with the opinion of Cabilan (2016), who stated that not only RNs' knowledge but also patient needs, nursing practice and context have an impact on the frequency of using the NIPP (Cabilan, Eley, Hughes, & Sinnott, 2016). The RNs must also genuinely care about all patients in order to provide good pain management and care in the ED and specially for the older patients (Kihlgren et al., 2005). An RN expert may read a situation and shift the perspective on the whole situation (Benner, Tanner, & Chelsa, 2009). According to the findings in study IV, the experienced RNs used the patients' previous medical history and administered pain relief based on the patients' own expressed needs. These findings are to some extent in accord with a previous study on patient participation in the ED where the caregivers offered the patient an opportunity for participation in his/her own care (Frank, Asp, & Dahlberg, 2009a). Inviting the patients to participate in the care concerning pain relief could provide an opportunity for better pain relief in the ED. However, to explore whether patients' experiences of pain management in the ED could be improved by increasing patient participation in care.

In Study IV, the RNs wrote in their comments that the NIPP dosage and analgesics were mostly used for orthopaedic patients. One explanation could be that an orthopaedic injury is often

visible and pain related to an orthopaedic injury occurs frequently at the ED. The comments of the RNs asserting that the NIPP was not suited to patients with abdominal pain were surprising. The NIPP was developed for pain in the ED and no exclusions regarding any diagnosis are included. The comment might reflect the RNs' lack of knowledge regarding pain managemnet, as well as the usefulness of the NIPP itself. Or it might be a reflection of the culture among physicians in the ED or that the NIPP has not been developed in interprofessional teams. A future strategy to improve the usefullness of the NIPP could be to develop it in interprofessional teams together with the patients. The patients should be seen as experts in their own care. According to the RNs' perceptions of pain management, a lack of teamwork may cause a barrier to ideal pain management (Bergman, 2012). Therefore, a strategy to improve pain management in the ED could be to develop the NIPP with an interprofessonal perspective.

Due to the lack of different analgesics to choose from in the NIPP, the RNs stated that it limited their ability to relieve patients' pain, which could imply that the RNs give a more individualized care compared to the conventional decription of how to use the NIPP. Lack of time and crowding in the ED are well-known barriers to pain management in the ED (Berben et al., 2012; Pretorius et al., 2015). Barriers in pain management in the ED might create suffering for the individual patient and the dignity of the patient can also be violated by the caregivers (Eriksson, 2015). Most often, care-related suffering is an unconscious phenomenon that may be due an absence of reflection or a lack of knowledge (Dahlberg, 2002). A previous study has shown, however, that patients' and relatives' dissatisfaction in the ED concerns powerlessness and a lack of information and support (Forsgarde, From Attebring, & Elmqvist, 2016), a dissatisfactions that may increase if the pain management is poor. Care-related suffering has no place in caregiving. It results from an unconscious act of omission by healthcare professionals, who must ensure that these deficiencies are remedied (Dahlberg, 2002).

Study IV findings also showed that the NIPP does not always consider the RNs' perspective on the patients' needs, such as different analgesics and variations in the dosage. In the comments by the more experienced RNs, one can read that instead of just following the NIPP, the RNs used their medical knowledge and clinical skills to perform beneficial acts to reduce the patients' suffering. This may be an expression of 'When Nursing Becomes an Art' in the ED context. The art of nursing involves such concepts as 'Ability to perform skills, acts of goodwill and the easing of suffering' (Nåden & Eriksson, 2002). The interpretation of the findings in study IV may indicate that RNs in the ED had the ambition to perform skills, do good and to alleviate patients' suffering. The management of pain in the ED is, however,

challenging (Gorawara-Bhat et al., 2017) and the ED environment may hinder the RNs from demonstrating true caring when managing patients' acute pain (Bergman, 2012).

7.4 METHODOLOGICAL CONSIDERATIONS

Different study designs were used in this thesis. Together, they complement each other and contribute to the knowledge concerning the complex phenomena of pain management in the ED. There are, however, some methodological considerations and limitations that need to be considered when interpreting the findings. One consideration is that the phenomenon of pain, a subjective experience, has been investigated by using quantitative study designs. However, the purpose was not only to explore the patient's subjective experience of pain and pain management in the ED. The aim was to describe and explore different aspects of pain management. The findings in this thesis might have been more in depth if qualitative study designs had been used with the aim of exploring and understanding the patients' and the RNs' perspectives of pain management at the ED. One could argue that it is possible to measure subjective experience with questionnaires, but without the patients' explanations of their answers, it is difficult to understand why the patient is not fully satisfied with the pain management in the ED, as shown in Study III.

In Studies I, III and IV, questionnaires were used for data collection. To the best of our knowledge, at the time of the studies, there was no survey answering the research questions posed to the cohort of participants included in the studies. When no suitable validated questionnaires were found, a questionnaire was developed from each research question. There are, of course, both pros and cons for not using validated questionnaires. The advantage is that the questionnaire and the particular questions that are being investigated can be controlled by the researcher. The disadvantages are that the questions can be misunderstood and the answers may not reflect the intended research question (Billhult, 2012). With my current knowledge, a greater effort would have been made to select the items used and to validate the used questionnaires. Greater reliability of the results could have been generated if a validated instrument had been used. However, in the conducted studies, our intention to increase the validity was achieved by using NRS, pain drawings and face validity. Regardless of the weakness in this study, by using our own developed questionnaire, the specific research question was answered. The participation of all seven EDs is a methodological strength when discussing the possibility of generalizing the findings, i.e., the external validity. The risk of a selection bias was minimized by including participants from various Stockholm County Council areas and including them consecutively at the ED department according to the inclusion criteria. The findings can also be used when designing further studies and evaluating

interventions involving pain management in the ED. One could argue that the data used in Study I is old and that patient behavior when seeking care in the EDs has changed over time. Whether patient behavior has changed is not ascertainable from our studies, but in order to verify the findings in Study I, a new data collection at one of the EDs was done in March, 2016 (not published). This new data collection confirmed the findings in Study I and as the outcome of the rate of patients with pain is in line with previous international studies, the estimation is that the results are reliable. Another limitation in Study I was that the number of patients who declined to participate or who were excluded due to other unknown factors, which may have caused a selection bias. Another bias identified in Study I was the amount of missing data. The RNs had to fill in the questionnaire at the same time as filling in the ordinary chart when patients arrived at the EDs and this may have resulted in the missing of data. The rate of missing data could be insignificant for the study findings, but the selection bias possibility is harder to evaluate since no knowledge is available concerning the patients not participating in the study. Nevertheless, the findings in Study I reflect the experience of the participating patients and their answers are valuable from their perspective, but the selection bias may cause difficulties in generalizing the findings to all patients seeking care at the ED. In further clinical studies, it will be important to take account of the burden of collecting data as part of the RNs' daily work. It is also important to have information about patients not participating in a study. The inclusion of patients and data collection may have improved if the RNs had not had to participate in the research as part of their clinical work. One could argue that research is a part of the RNs' daily work, but when the EDs are crowded, the clinical RNs may prioritize their work in another way.

Studies II and III were conducted in one ED in Stockholm. The setting was a 24-hour adult (patients >15 years old) ED at a public urban teaching hospital. The ED served all adult patients with surgical, cardiological, orthopaedic and internal medicine requirements and no referral was needed. Thus, the generalizability of the study findings may be regarded as limited. It is reasonable to argue, however, that the findings may be transferable to similar situations and contexts. Using medical records (Study II) for data collection may be regarded as a limitation since the use of such records for data collection will never be better than the documentation produced by the RNs (Laudermilch, Schiff, Nathens, & Rosengart, 2010). One could argue that the documentation is a quality variable and should be regarded as a reflection of performed patient care, although an observational study design might have been a more suitable method of data collection for answering the research questions. In Study II, the data collection and the sample size of 120 medical records per year may not reflect all documented pain assessments in the ED, but the data collection was done over a period of seven years, so the study findings

are considered to reflect the frequency of documented pain assessments at the ED. Collecting data over time (Studies II & III) may, however, in and of itself cause a bias. The findings may have been affected by such external factors as the extent of crowding, lack of personnel, skills of new employees and the patients' own characteristics.

Estimating patient's satisfaction with pain treatment with yes/no alternatives may be a bit simplistic (Study III), but the question requires a standpoint of the patients responding to the question. Another way of exploring the patients' satisfaction with pain management at the ED would have been to use interviews for data collection or to use a graduated measuring scale, for example, a Likert scale, to find out the patients' degree of satisfaction. Compared with objective measurements, the patient self-reported data are generally more difficult to evaluate and may be increasingly affected by other factors (Polit, 2006). Similarly, as discussed by Bhakta et al. (p. 459): 'Patient satisfaction among ED patients can be challenging to measure reliably.' This is probably caused by the lack of a definition of patient satisfaction (Bhakta & Marco, 2014). A limitation that should be noted is the convenient collection of data in Study III. Using convenience sampling is considered to be a weak form of data collection since there is a risk of bias (Polit, 2006).

In Study IV, a questionnaire developed by us was also used for collecting data. Thus, the above described limitations also apply to this study. But being familiar with the context and the profession can also be seen as an advantage when this questionnaire was developed out of clinical knowledge and were assessed to be relevant by a group of experienced RNs before the survey was conducted. The response rate was 42% and may be considered to be low and it was not possible to determine if there was any selection bias due to the way in which the data were collected. However, the gender distribution among the participants reflects the actual gender distribution at the ED. If the study had been done today, another way of collecting data would have been chosen, for example, open interviews to increase the level of understanding or by observing the RNs daily work to explore how they actually reason when using the NIPP.

Regarding a methodological conclusion, other study designs could have been used, but the outcomes in this thesis have indeed contributed to identifying pieces of the puzzle of developing and evaluating pain management in the ED. It is reasonable to assume that the findings are transferable to similar situations and similar contexts, but more research based on the patients' and nurses' perspective is needed to further understand how to improve pain management in the ED.

8 CONCLUSIONS

The overall aim was to explore patients' and nurses' perception of pain management in the ED.

Pain management in the ED needs to have a primary focus since more than 75% of the patients stated that pain was present when they arrived at the ED. Thirty per cent of the patients reported a pain intensity of 8 or more when arriving at the ED, but only 33% of the patients had taken analgesics before visiting the ED. The odds of reporting pain were nearly six times higher for a person aged <30 compared to a person aged >60 (Study I).

The findings in this thesis showed that mandatory documentation of pain assessment in the patient's computerized medical record was a successful intervention to improve the frequency of the documentation of pain assessments in the ED (Study II). After the intervention, more patients received more analgesics and reported decreased intensities of pain at discharge from the ED. However, the patients' own reported satisfaction with pain management during the ED visit was not significantly improved by implementing the mandatory pain assessment documentation (Study III). The findings concerning the patients' own reported satisfaction with pain management may be attributable to the RNs' working experience and their use of the NIPP (Study IV), but further research is needed to explore factors that affect the patient's own reported satisfaction with pain management during the ED visit.

Although the knowledge base regarding barriers and obstacles to pain management in the ED has increased significantly during the years of this dissertation work, it seems that there is still room for improvements in alleviating the acute pain of the patient in this context. The risk of oligoanalgesia is still high.

9 IMPLICATIONS

- (I) Differences in the patient's pain ratings according to age should be highlighted in management plans and by healthcare personnel in the clinical setting.
- (II) Mandatory pain assessments, supported by the electronic patient record, should be used to improve the frequency of documentation of pain assessments during care in the ED.
- (III) Pain intensity should be assessed at discharge of the patient, which would give the ED personnel a direct feedback concerning the actual management of pain and could be used as a quality indicator.
- (IV) An interprofessional team working together should develop guidelines for pain management so that all aspects of the patients' pain are considerd.

10 FUTURE RESEARCH

In the future, management of pain in the ED should be considered from the patient's perspective, i.e., person-centred care, and how well individualized management plans correspond to hospital-based management plans.

Further investigation of the specifics of acute pain and the patients' experience of pain medication could help to improve the early medication strategies for preventing complications. Further studies should also consider whether anxiety as such has an impact on the patient's pain ratings.

It is important to get a deeper knowledge of the phenomena of pain and what impact a reassessment has on medical treatment and pain ratings at discharge from the ED. What strategies does an RN in the ED use to relieve suffering from pain in patients in pain without using analgesics?

Since the patient's experience of pain is subjective, it would be desirable that more studies were conducted using a qualitative approach. We should then be able to partake of the patients' thoughts, experiences and opinions and obtain a deeper understanding of the experience of pain among patients in the ED setting.

11 SAMMANFATTNING (SUMMARY IN SWEDISH)

Den internationella sammanslutningen för studier av smärta (IASP) definierar smärta som: *En obehaglig sensorisk och känslomässig upplevelse förenad med vävnadsskada eller beskriven i termer av sådan skada.* Genom detta betonas att smärtan är en subjektiv upplevelse. Smärta är en personlig upplevelse som inte kan påvisas eller uteslutas med objektiva metoder. Förmågan att uppleva smärta är viktig och en av de starkaste drivkrafterna för överlevnad. Akut smärta är en viktig varningssignal och är utformad för att skydda oss genom att aktivera de reflexer som gör att vi om möjligt drar tillbaka en utsatt kroppsdel.

Smärta är ett stort hälsoproblem som har en stor inverkan på folkhälsan och smärta orsakar ofta ett stort lidande för den drabbade. Den vanligaste förekommande smärtan på en akutmottagning är den nociceptiva smärtan. Exempel på nociceptiv smärta är, inflammatorisk smärta inklusive artrit och artros eller vid skador efter trauma. Smärta är också den vanligaste orsaken när patienter söker vård på akutmottagningen. Det har dock visat sig att det finns ett missnöje hos patienterna avseende handläggningen av smärta på akutmottagningar. Missnöjet handlar om att patienterna inte får tillräcklig smärtlindring och/eller inte får smärtlindring i tid. Bristen på otillräcklig smärtlindring finns beskriven i forskningslitteraturen från tidigt 1970-tal till dags dato och lite beroende på studierna är det olika patientgrupper som är mer eller mindre drabbade.

Orsaker till att patienterna inte får tillräcklig smärtlindring och/eller inte får smärtlindring i tid, kan ha sin grund i ett flertal orsaker. Det finns hinder i *hälso- och sjukvårdens organisation* som exempelvis avsaknad av riktlinjer, för få vårdplatser, ont om tid som i sin tur kan bero på att personal har för många patienter att ansvara för, överbelastade akutmottagningar och brist på utbildning. *Egenskaper hos vårdpersonal* är ett annat område som kan hindra en god smärtlindring. Som exempel kan ges attityder hos vårdpersonal, förutfattade meningar om patientens smärtbeteende och patienter med beroendeproblematik som önskar opioider. *Patientrelaterade* orsaker kan också vara ett hinder. Det kan av vissa personer ses som nobelt att lida, människor kan ha dåliga erfarenheter i samband med tidigare smärtlindring och personer kan vara rädda för att bli beroende av läkemedel. Ytterligare faktorer som kan påverka och förstärka smärtupplevelsen är patientens kön, religion, kulturella ursprung och emotionella faktorer som ångest och rädsla.

Det finns beskrivna åtgärder som har visat sig ha förbättrat smärtbehandlingen på akutmottagningar. Som exempel kan ges riktlinjer som styr smärtlindring, utbildningsprogram, dokumenterad smärtskattning och ordination av smärtstillande läkemedel enligt generella

direktiv. Med ordination enligt generella direktiv avses att sjuksköterska kan ge läkemedel enligt förbestämda kriterier innan patienten träffar läkare. De vanligaste förekommande läkemedlen som kan ges enligt generella direktiv innehåller paracetamol, NSAID och opiater. Det har visats att om patienter smärtskattas direkt vid ankomst till akutmottagningen, får fler patienter analgetika och de får det också tidigare. Många menar till och med att smärtskattning är grunden för all smärtlindring. Både skattningsinstrumentet VAS och NRS fungerar väl för att skatta smärtan hos patienter på en akutmottagning. Hos mindre barn och hos patienter med nedsatt kognitiv funktion kan beteendeskalor användas. Att administrera smärtstillande läkemedel enligt generella direktiv har inneburit att patienter får smärtstillande läkemedel tidigt under sin vistelse på akutmottagningen. Detta har också visats sig ha en positiv verkan på patienttillfredsställelsen. Patienterna upplever att de blir uppmärksammade tidigt och att smärtan inte ignoreras.

I studie I undersöktes bland annat förekomsten av smärta, patienter smärtintensitet och användning av smärtstillande läkemedel innan patienten kom till akutmottagningen. Undersökningen pågick under ett dygn och ägde rum samtidigt på alla Stockholms läns landstings (SLL) sju somatiska akutmottagningar för vuxna. I samband med ankomsten till akutmottagningen fick patienten tillsammans med mottagande sjuksköterska fylla i en enkät om sin smärta. Resultatet visade att 77 % av de 647 inkluderade patienterna angav smärta i samband med ankomsten till akutmottagningen. 69 % angav att de hade en smärtintensitet över 5 på den 11-gradiga smärtskalan Numerical Rating Scale (NRS). Trettio procent angav smärtintensitet på 8 eller mer. Det kunde också konstatera att patienter under 30 år angav smärta sex gånger högre? än patienter över 60 år. Trettiotre procent av patienterna hade tagit någon form av smärtstillande läkemedel innan ankomst till akutmottagningen. Läkemedel innehållande paracetamol och NSAID dominerade.

I studie II undersöktes hur olika åtgärder/interventioner mellan åren 2006 – 2012 påverkade frekvensen av dokumenterad smärtskattning hos patienter med skador (frakturer och mjukdelsskador) på handled och arm. Undersökningen ägde rum på ett undervisningssjukhus i Stockholm. Patientjournaler användes för datainsamlingen och 10 journaler från varje månad granskades. Inklusionskriteriet var att patienten hade erhållit någon form av smärtstillande läkemedel på akutmottagningen. Fyra interventioner genomfördes under åren 2006 – 2010. Interventionerna innebar.1) En lokal ”smärtgrupp” på akutmottagningen fick ett faciliterings- och utbildningsuppdrag. 2) Ordet ”Smärtskattning” fick en plats på akutjournalbladet. 3) I samband med inskrivningen på akutmottagningen, delades en VAS-sticka ut till patienten för att påminna mottagande sjuksköterska om att fråga patienten om smärtintensitet. 4) Att

dokumentera smärtskattning blev obligatoriskt då datapatientjournal infördes. Trots dessa interventioner blev det ingen bestående effekt med dokumenterad smärtskattning förrän smärtskattning blev obligatoriskt då den datoriserade akutpatientjournalen infördes i oktober 2010.

I studie III tillfrågades vuxna patienter, som sökte vård för muskel- eller skelettskada på en akutmottagning på ett undervisningssjukhus i Stockholm, vad de tyckte om smärtbehandlingen. En grupp (n=80) tillfrågades innan obligatorisk dokumentation av smärtskattning infördes och en grupp (n=80) tillfrågades efter införandet. I båda grupperna var hälften män hälften kvinnor och medianåldern i båda grupperna var 49. Det framkom att i den grupp som utfrågades efter det att obligatorisk smärtskattning hade införts hade fler patienter fått smärtstillande läkemedel och smärtintensiteten var lägre vid utskrivning än i den andra gruppen.

I studie IV undersökte vi om sjuksköterskors yrkeserfarenhet påverkade användningen av smärtstillande läkemedel enligt ordination enligt generella direktiv. En majoritet av de tillfrågade tyckte att ordination enligt generella direktiv var ett bra alternativ att använda sig av för att lindra patienternas smärta på akutmottagningen. Vi kunde även konstatera att sjuksköterskor med mer är sex års yrkesverksamhet hade patientens individuella behov som utgångspunkt när de gav smärtstillande medan sjuksköterskor med mindre erfarenhet hade de generella direktiven som utgångspunkt. Att ont om tid och fulla akutmottagningar är ett hinder för god smärtlindring bekräftades i undersökningen.

Smärtlindring borde ha ett tydligt fokus inom akutsjukvården. Inte bara för att smärta är det dominerande symtomet hos många patienter som söker vård på akutmottagningen utan även för att det hos många patienter kan skapa ett långt vårdlidande. Omvårdnaden är som mest brilliant och kraftfull då tyngdpunkten ligger på att lindra patientens lidande.

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14 APPENDIX

APPENDIX I

Klockslag då frågorna ställdes……. Sjukhus……

PATIENTENKÄT

Dygnet den 18 – 19 maj genomför akutmottagningarna i Stockholms län en kartläggning avseende **akut** fysisk smärta. Vi ber dig att svara på följande frågor som kommer att ställas av våra medarbetare. Det är helt **frivilligt** att delta i vår kartläggning. Inga namn eller personuppgifter kommer att registreras.

Har du ont?	Ja	□	Nej	□	
Är du?		Man	□	Kvinna	□
Hur gammal är du?		0-20	□	21-30	□
		31-40	□	41-50	□
		51-60	□	61-70	□
		71-80	□	över 80	□

Har du själv tagit någon smärtstillande innan du kom till akutmottagningen?

Ja□ Nej□

Om ja. Vilket/Vilka läkemedel och vilken styrka/dos?_____

_____

Var har du ont? Markera med ett X (kryss) på bilden som finns på enkätens baksida

Hur ont har du på en skala från 0 – 10?

0 = ingen smärta och 10 = värsta tänkbara smärta

Ingen smärta 0--1--2--3--4--5--6--7--8--9--10 Värsta tänkbara smärta

Markera med ett X (kryss) på skalan

Eventuella frågor avseende kartläggningen besvaras av:

Vårdutvecklare Lars Sturesson Telefon 08-616 2107

Professor Maaret Castrén Telefon 08-616 3954

APPENDIX II

Akutmottagningen

Till patient avseende medverkan i en vetenskaplig studie!

I samband med Ditt besök på akutmottagningen vill vi ställa några frågor som berör Din smärtupplevelse och den smärtbehandling som Du eventuellt fick. Vi vet att det är Du, i egenskap av patient, som är expert på den smärta som Du eventuellt upplevde.

Vår ambition är att vi ska kunna erbjuda ALLA patienter en tillfredsställande smärtlindring och smärtbehandling. För att vi ska kunna bli bättre på att lindra smärta behöver vi Din hjälp. Hjälpen består i att besvara sju frågor.

Att svara på frågorna är givetvis helt **frivilligt** och skulle Du välja att inte delta kommer Du givetvis ändå att få bästa tänkbara vård.

Svaren, som kommer att ingå i en vetenskaplig studie, kommer att behandlas så att inte obehöriga kan ta del av dem. Inga namn eller andra personuppgifter kommer att offentliggöras.

Jag har läst igenom och förstått denna information och fått tillfälle att ställa frågor avseende studien som jag deltar i och samtycker härmed att ingå i studien.

Datum…….. Namnteckning……

En kopia på detta dokument lämnas till patienten.

Tack för Din medverkan!

Om Du skulle ångra Din medverkan, meddela då någon av nedanstående personer och Du kommer då att utgå från studien.

Eventuella frågor kring studien besvaras av

doktorand Lars Sturesson telefon dagtid: 08-616 21 07 och/eller

professor Maaret Castrén telefon dagtid: 070-891 50 86

E-mail: lars.sturesson@sodersjukhuset.se

maaret.castren@sodersjukhuset.se

L-nr:

Namn:

Personnummer:

1. Tog/Erhöll Du något smärtlindrande läkemedel, hemma eller i ambulans, innan Du kom till akutmottagningen?

1:1 □ Ja Om Ja. Vad?.....Vet ej □

Hur mycket (tex antal tabletter)?

Hur ofta (tex varannan timme)?

Hur länge sen tog du senaste dosen?

Hemma □ Ambulans □

1:2 □ Nej

2. Upplevde Du någon gång smärta under Ditt besök på akutmottagningen?

2:1 □ Nej – Om Nej. Avsluta enkäten här.

2:2 □ Ja

3. Hur upplevde Du din smärta när du kom till akutmottagningen? Uppskatta din smärta med att ringa in en siffra mellan 0 – 10. Siffran 0 står för ingen smärta och siffran 10 står för värsta tänkbara smärta.

0 1 2 3 4 5 6 7 8 9 10

4. Fick Du smärtstillande läkemedel på akutmottagningen?

4:1 □ Ja, en gång

4:2 □ Ja, flera gånger

4:3 □ Nej

5. På det hela taget, hur mycket smärtstillande läkemedel fick Du på akutmottagningen?

5:1 □ Tillräckligt

5:2 □ För lite

5:3 □ För mycket

5:4 □ Jag fick inga smärtstillande läkemedel

6. Upplevde Du att personalen på akutmottagningen gjorde allt de kunde för att lindra Din smärta?

6:1 □ Ja, helt och hållet

6:2 □ Delvis

6:3 □ Nej

7. Hur upplevde Du din smärta när du lämnade akutmottagningen? Uppskatta din smärta med att ringa in en siffra mellan 0 – 10. Siffran 0 står för ingen smärta och siffran 10 står för värsta tänkbara smärta.

0 1 2 3 4 5 6 7 8 9 10

APPENDIX III

Löpnummer:_____

Enkäten ingår i en vetenskaplig **forskningsstudie** avseende sjuksköterskors uppfattning om smärtbehandling av akut fysisk smärta på akutmottagning. Enkäten behandlas helt konfidentiellt och deltagandet är givetvis helt **frivilligt**. Jag **samtycker** till att uppgifterna som jag lämnar i denna **enkät** används i en vetenskaplig studie.

1. Jag är; man□ kvinna□

2. Min ålder är;

20-30 år□ 30-40 år□ 40-50 år□ 50-60 år□ 60-70 år□

3. Jag blev klar med min sjuksköterskeutbildning år;

innan 1960□ 1960-1970□ 1971-1980□ 1981-1990□ 1991-2000□ 2001 eller senare□

4. Jag har jobbat som sjuksköterska i;

<1 år□ 1-5 år□ 6-10år□ 11-15år□ 16-20år□ >20 år□

5. Jag har jobbat som sjuksköterska på akutmottagningen i;

<1 år□ 1-5 år□ 6-10år□ 11-15år□ 16-20år□ >20 år□

6. Jag har specialistsjuksköterskeutbildning Ja□ Nej□

Om Ja, vilken/vilka?.....

7. Jag har, förutom inom sjuksköterskeutbildningen och/eller specialistsjuksköterskeutbildningen, genomgått någon form av smärtutbildning

Ja□ Nej□

Om Ja, ange var. Fler än ett svar är möjligt! På högskola/universitet□

Internt på sjukhus□

Extern kurs utanför sjukhus□

Annan kurs/utbildning□

8. I vilken utsträckning använder Du dig av ”Ordination enligt generella direktiv” avseende smärtlindring?

Alltid□ Ofta□ Ibland□ Sällan□ Aldrig□

Om möjligt, kommentera gärna Ditt svar:

……
……..……
…….

9. Förekommer det att Du ger MER av ett smärtstillande läkemedel än som är rekommenderat angående ”Ordination enligt generella direktiv”?

Ja□ Nej, men har varit aktuellt ibland□ Nej, aldrig aktuellt□

Beskriv i vilket sammanhang:

……
……..……
……
……

10. Förekommer det att Du ger MINDRE av ett smärtstillande läkemedel än som är rekommenderat angående ”Ordination enligt generella direktiv”?

Ja□ Nej, men har varit aktuellt ibland□ Nej, aldrig aktuellt□

Beskriv i vilket sammanhang:

……
……..……
……
……
……

11. Upplever Du att det finns hinder med att använda ordination enligt generella direktiv avseende smärtlindring?

Ja□ Nej□

Om Du svarar ja, beskriv svårigheterna/hindren:

……
……
……
……
……

12. Upplever Du att de läkemedel och doseringar som finns med i ”Ordination enligt generella direktiv” är tillräckliga för att smärtlindra?

Ja☐ Nej☐

Om Du svarar nej, kommentera Ditt svar:

……
……
……
……
……

Uppgifter om studien lämnas av doktorand Lars Sturesson tel: 08-6162107 eller av professor Maaret Castrén tel: 08-6163954