



Clinical pain research

Mandatory documentation of pain in the emergency department increases analgesic administration but does not improve patients' satisfaction of pain management



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H I G H L I G H T S

- Mandatory pain documentation increases the use of analgesics in the ED.
- Mandatory pain documentation does not increase patient satisfaction.
- Despite acute injury and pain, patients do not take analgesics prior to an ED visit.

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Background: Pain is one of the most common symptoms treated in emergency department (ED). Pain may cause suffering and disability for the patient. Inadequate pain management may be associated with increased risk of complications such as sleep disturbance, delirium and depression. Previous studies conclude that pain management in ED is insufficient and inadequate. Yet, little is known about patients' own experience regarding pain management in ED.

Objective: The aim of this study was to explore the satisfaction of pain management in patients having acute musculoskeletal injuries before and after implementation of mandatory documentation regarding pain assessment in the ED.

Method: An observational pre-post intervention study design was used. The study was conducted on patients having acute musculoskeletal injuries such as soft tissue injury, back pain or wrist/arm/leg/foot fractures in a 24-h adult (>15 years) ED at a public urban teaching hospital in Stockholm, Sweden. Data was collected by an interview based on a questionnaire.

Results: A total of 160 patients answered the questionnaire. In the pre- ($n=80$) and post-intervention ($n=80$) groups, 91/95% experienced pain in the ED. A significant difference ($p<0.003$) was found during the post-intervention period, with more patients receiving analgesics compared to the pre-intervention group. A significant decline ($p<0.03$) in patients' own reported pain intensity at discharge was found between the groups. Patients' reported satisfaction on pain management in the ED increased in the post-intervention group, but the difference was not statistically significantly.

Conclusion: Patients' satisfaction with pain management increased, but not statistically significantly. However, both percentages of patients receiving analgesic drugs increased and pain intensity decrease at discharge were statistically significant after the intervention that made nurses obliged to register pain.

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Implication: According to the findings of this study, mandatory pain documentation facilitates pain management in the ED, but there is still room for improvement. Additional actions are needed to improve patients' satisfaction on pain management in the ED. Mandatory pain documentation in combination with person-centred care could be a way of improving patients' satisfaction on pain management. Effective pain management is an important quality measure, and should be focused on in acute care in the ED. By routinely asking patients to report the pain intensity at discharge, the ED personnel can have direct feedback about the factual pain management. RNs may also be encouraged to use intravenous analgesics in higher extent when the patients have very severe pain.

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1. Introduction

Pain could be considered the fifth vital sign [1]. It is a global health care issue, since pain causes more than half of the visits to emergency department (ED) [2,3]. Previous studies conclude that pain management in ED is insufficient and inadequate [4–6] and inadequate pain management may be associated with increased risk of complications such as sleep disturbances, delirium and depression [7]. Hindrances to achieving adequate pain relief for the patients in ED are described as: failure to assess and acknowledge pain, lack of guidelines, failure to document pain, failure to assess treatment correctly, and attitudes and inadequate knowledge among personnel [8]. Nevertheless, several attempts to improve pain management in an ED have been made by using guidelines [9], by educating personnel [10] and implementing assessment using pain scales [11]. Documentation of pain assessment has been shown to have a positive effect on pain management [12], but there is a large variation between studies, ranging from 57% to 94% [1,9,13]. Mandatory pain scoring included in triage has shown reduced time to analgesia [12] and it has improved the frequency of documented pain assessment in EDs [14]. Despite several attempts to improve pain management at EDs, patients suffering from acute pain do not receive enough analgesics in EDs [15]. However, there is sparse research on how different strategies to improve pain management affect the patient's own experience of acute pain management in EDs. At present, patient perceptions are rarely used in order to systematically evaluate pain management in EDs. Therefore, the aim of this study was to explore the patients' satisfaction of pain management before and after implementation of mandatory documentation of pain assessment in the ED.

2. Method

A pre-post intervention study design was used to evaluate patients' satisfaction of acute pain management in the ED after implementation of mandatory documentation of pain assessment.

2.1. Setting

The study was conducted on patients suffering from acute musculoskeletal injuries such as soft tissue injury, back pain or wrist/arm/leg/foot fractures in a 24-h adult (>15 years) ED at a public urban teaching hospital in Stockholm, Sweden. The ED serves all adult patients with surgical, cardiological, orthopaedic and internal medicine requirements, and no referral is needed. In the health care system in Stockholm, patients >15 years with orthopaedic and/or surgical injuries are always treated at an adult ED. Each year the hospital receives by ambulance approximately 7300 patients with acute life-threatening conditions. The ED has transfer agreements for patients requiring more comprehensive care for neurosurgical conditions and burn injuries.

The personnel working with direct patient care in the ED include physicians specializing in cardiology, surgery, orthopaedics, internal medicine and emergency medicine; there are also registered

nurses (RNs) as well as RNs with additional training in emergency care. There are approximately 110 RNs working at the ED. The RNs perform primary triage, supported by standardized protocols, in order to identify patients' need of care based on the acuteness of their condition. The aim is also to assess the patient's pain and initiate pain relief if necessary.

The RN is able to administer oral and/or intravenous analgesics to patients before examination by a physician by using nurse-initiated analgesic protocol. The nurse-initiated analgesic protocol was developed by emergency physicians' and approved and signed by the medical director of the emergency department and consists of recommendation on different analgesics and dosage that the RN can use for pain relief (paracetamol 500 mg–1 g), NSAIDs, a combination paracetamol/NSAID, paracetamol/codeine tablets (1–2 tablets), and intravenous opioids (morphine 1–10 mg). The choice of drug and dosage is dependent on the patient's pain intensity and the patient's overall clinical situation. In the nurse-initiated analgesic protocol there is also given, which is the maximum permissible dose of the drug and what nurses should do if a suspected overdose should occur.

In October 2010, the patient medical report was computerized and pain assessment became mandatory for RNs to document. If RNs did not record the pain assessment, they were not able to continue documentation in the patient's medical report. During the study period, patients with soft tissue injury, back pain or wrist/arm/leg/foot fractures were treated by orthopaedic surgeons or emergency physicians and cared for by nurses with or without additional emergency care training. In 2010, in total 103,243 patients visited the ED; of these, approximately 23% suffered from acute musculoskeletal injuries such as soft tissue injury, back pain or wrist/arm/leg/foot fractures.

2.2. Data collection and variables

A questionnaire with eight questions was used for data collection. It was filled out by a triage nurse when interviewing a patient at admission and discharge from the ED. The questionnaire consisted of two demographic questions (age and gender), one question asking if the patient had been taken any analgesic prior to attending the ED, two questions about patient's pain intensity scored between 0 and 10 (0 = no pain and 10 = very severe pain), and three questions concerning the patient's experience including satisfaction of pain management in the ED. The questionnaire was pilot-tested for content and face validity [16] by asking 11 patients to answer and reflect on the questions before data collection was started. Small changes were made in the questionnaire after the pilot testing. The changes consisted of clarification of vocabulary, adding a question regarding pain medication at home and a question regarding pain intensity in connection to discharge. The number of patients considered to be sufficient to detect a 30 percentage change in pain management was calculated to be 55 patients with power of >80% with a *p*-value of 0.05. Patients with acute musculoskeletal injuries such as, soft tissue injury, back pain or wrist/arm/leg/foot fractures and understanding Swedish

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