



Original experimental

Pain and pain management in hospitalized patients before and after an intervention



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HIGHLIGHTS

- Guidelines in combination with staff education, improve prescription of analgesia.
- Pain responsibility nurses are successful in promoting guidelines in their own units.
- A variety of components are necessary for reducing pain levels in hospitalized patients.

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ABSTRACT

Background and aim: Studies have shown that pain is common among hospitalized patients and that there is a lack of compliance with pain management guidelines. Improving pain management does not only involve developing new drugs or technology; even more important is an effective organisation that utilises existing expertise. The aim of this study was to investigate whether pain in hospitalized patients can be reduced by implementing evidence-based pain management guidelines, providing education for staff and an organisation that includes pain responsibility nurses.

Methods: A cross-sectional study was carried out between 2009 and 2010 at two hospitals in southwest Sweden, comprising a baseline survey followed by an intervention. The study involved 306 patients, who answered questions about pain intensity at rest and while moving, disturbed sleep due to pain and whether they had used a pain rating scale while in hospital. Medical records were scrutinised for analgesic prescriptions. An intervention then took place, involving implementation of evidence-based guidelines, staff education and the introduction of pain responsibility nurses. A follow-up survey was carried out in 2012, in which 293 patients answered the same questions and their medical records were also reviewed. The baseline results were then compared with those of the follow-up survey.

Results: When compared with the baseline survey, the follow-up survey revealed significant differences in the use of validated pain rating instruments as well as the prescription of more appropriate analgesics. Prescription of paracetamol increased significantly in the follow-up survey; 56% of the patients were prescribed paracetamol on a regular basis, compared with 42% at baseline. There was also a significant increase in the use of strong opioids, from 38% at baseline to 55% at follow-up. Prescriptions of weak opioids decreased from 16% at baseline to 4% at follow-up. No significant differences were observed in patient pain levels in the follow-up survey. At baseline, 29% of the patients reported moderate to severe

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pain at rest (NRS 4–10) and at follow-up that figure was 24% (NRS 4–10). In both surveys, 41% reported moderate to severe pain (NRS 5–10) during movement. Thirty-nine percent reported disturbed sleep at night at both baseline and follow-up.

Conclusions: This study demonstrates that evidence-based guidelines made accessible to all staff as a pocket size booklet and on the intranet, in combination with staff education, pain responsibility nurses who informed other staff on their own wards, improved the prescription of analgesics in the hospitals studied. In order to achieve a noticeable effect for patients, i.e., reduced pain levels, an intervention containing more components than those employed in the present study is required.

Implications: Nurses and physicians need greater knowledge about the importance of pain rating. A vital part of pain management at hospitals is continuous evaluation of treatment outcomes to prevent severe pain and disturbed sleep. The complexity of pain and pain management requires commitment, time and knowledge on the part of healthcare staff. Multi-professional pain teams that support ward staff in pain management are necessary in order to reduce suffering and unnecessary pain in hospitalized patients.

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1. Introduction

Pain in hospitalized patients remains undermanaged. Studies have shown that pain management does not receive sufficiently high priority and that there is a lack of compliance with pain management guidelines [1–5]. A Swedish cross-sectional study by Wadensten et al. [6] revealed that 65% of 759 patients treated in hospital had experienced pain during the previous 24 h, of whom 33% rated the intensity as moderate to severe. Another study conducted at a Swedish hospital in 2014 [7] produced similar results; 65% of 710 patients had experienced pain in the previous 24 h, with a mean Visual Analogue Scale (VAS) pain intensity rating of six.

A German study from 2010 demonstrated that 30% of patients in the acute post-surgery phase reported moderate to severe pain at rest while 50% reported pain during movement [5]. After surgery, 10–50% of patients experienced chronic pain, depending on the type of surgery [8,9]. More effective pain management in the acute phase could reduce the occurrence of surgery-related chronic pain [10]. A Danish study of 134 hospitalized patients with cancer showed that 66% had pain, and 32% of these reported moderate to severe pain [11].

The World Health Organization (WHO) recommends multimodal analgesic treatment for cancer pain involving two or more analgesics, which affect different pain mechanisms and provide effective pain relief with minimum adverse effects [12]. A multimodal treatment regimen is also recommended for acute and postoperative pain [13]. Patients with chronic pain sometimes experience acute, exacerbated phases that may require hospital treatment; analgesics are then needed to relieve the pain. In the longer term a combination of non-pharmacological methods is recommended [14]. According to the International Association for the Study of Pain (IASP), neuropathic pain is often undertreated or even untreated, despite the availability of many effective drugs and treatment guidelines [15].

Adequate pain management requires pain assessment and continuous evaluation of treatment, with the participation of the patient, where her/his rating of the pain intensity is an important component [13,16,17]. Contemporary national and international guidelines recommend that pain intensity should be regularly rated in patients with acute pain and cancer pain [13,16–21]. In clinical care, nurses play an important role in rating pain and applying evidence-based pain management principles [22].

Improving pain management does not only involve developing new drugs or technology but still more important is an effective organisation that utilises existing expertise [23]. In an Italian study from 2007, a hospital-wide programme in which staff members were trained in pain management led to improved professional care and reduced the pain level of hospitalized patients [24]. No similar studies have been carried out in Swedish hospitals.

The aim of the present study was to investigate whether pain in hospitalized patients can be reduced by implementing evidence-based pain management guidelines, providing education for staff and establishing pain responsibility nurses in the organisation. A secondary aim was to examine whether analgesic prescriptions changed after the pain management intervention.

2. Methods

2.1. Design

A descriptive, cross-sectional study before and after an intervention.

2.2. Intervention

The intervention consisted of three parts:

- Evidence-based pain management guidelines were compiled and printed in pocket size booklets as well as placed on the hospital intranet, where they were easily accessible to all staff members. The guidelines were based on scientific and clinical recommendations for managing acute, cancer and chronic pain. They included theoretical information about the physiology and dimensions of pain, as well as explaining pain rating and analysis. The clinical pain management recommendations encompassed both pharmacological and complementary treatment for many of the most common pain conditions in hospital patients. The guidelines were implemented during the first half of 2011.
- Education sessions were arranged for staff members. Pharmacists and anaesthetists instructed doctors at the two hospitals, while nurses trained their nurse colleagues, assistant nurses and paramedics.
- An organisation of pain responsibility nurses was established, in which all clinics were represented. The group met on two to three occasions per semester and the nurses received training and support to develop pain management procedures in their own wards.

2.3. Sample

The study was carried out at two hospitals in southwest Sweden. The participants comprised adult patients at the two hospitals.

Hospital A had 235 somatic inpatient beds for adults. Patients in the recovery ward, intensive care ward and three medical wards were not included in the study at baseline, resulting in 142 potential participants. The medical wards treating patients with cardiovascular, renal and haematological conditions were excluded at baseline and also in follow-up, as we wanted the sample to be

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