



Observational study

## Prehospital personnel's attitudes to pain management

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### HIGHLIGHTS

- We compared Swedish and Finnish prehospital personnel attitudes to pain management.
- There is a correlation between extent of education and attitudes to pain management.
- Gender and age affect the attitudes to pain management.
- Swedish prehospital personnel hesitates to administrate pain medication.

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### ABSTRACT

**Objectives:** Pain is one of the most common reasons for patients to seek acute medical care. The management of pain is often inadequate both in the prehospital setting and in the emergency department. Our aim was to evaluate the attitudes towards pain management among prehospital personnel in two Scandinavian metropolitan areas.

**Methods:** A questionnaire with 36 items was distributed to prehospital personnel working in Helsinki, Finland ( $n=70$ ) and to prehospital personnel working in Stockholm, Sweden ( $n=634$ ). Each item was weighted on a five-level Likert scale. Factor loading of the questionnaire was made using maximum likelihood analysis and varimax rotation. Six scales were constructed (*Hesitation, Encouragement, Side effects, Evaluation, Perceptions, Pain metre*). A Student's *t*-test, ANOVA, and Pearson Correlation were used for analysis of significance.

**Results:** The response rate among the Finnish prehospital personnel was 66/70 (94.2%) while among the Swedish personnel it was 127/634 (20.0%). The prehospital personnel from Sweden showed significantly more *Hesitation* to administer pain relief compared to the Finnish personnel (mean 2.01 SD 0.539 vs. 1.67 SD 0.530,  $p < 0.001$ ). Those who had received pain education at their workplace showed significantly less *Hesitation* than those who had not participated in education. There was a significant negative correlation ( $p < 0.01$ ) between *Hesitation* and *Side effects*. There was also a statistically significant ( $p < 0.01$ ) correlation between *Perceptions* and *Hesitation*, indicating that a stoic attitude towards pain was associated with indifference to possible *Side effects* of pain medication ( $p < 0.05$ ).

**Conclusions:** The results show that there was a significant correlation between the extent of education and the prehospital personnel's attitudes to pain management. Gender and age among the prehospital personnel also affected the attitudes to pain management. The main discrepancy between the Swedish and Finnish personnel was that the participants from Stockholm showed statistically significantly more hesitation about administering pain medication compared to the participants from Helsinki.

**Implications:** The results of the study highlight the need for continuous medical education (CME) for prehospital personnel. CME and discussions among prehospital personnel may help to make a change in the personnel's attitudes towards pain and pain management in the prehospital context.

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## 1. Introduction

The journey of the patient in Emergency medical services (EMS) usually starts with care provided by the prehospital personnel and personnel in the emergency department (ED). Pain is one of the most common symptoms in an emergency setting, causing over half of the visits to the ED [1,2]. The prevalence of pain in the prehospital setting is not well studied, but Galinsk et al. [3] report that approximately 42 percent of patients in the prehospital setting suffer from pain. It is well known that the response by professional personnel to the management of acute pain in the ED is not optimal, meaning that many patients remain in a distressed condition and are dissatisfied with the care they receive in the ED [1,4]. There are several reasons for sub-optimal pain relief in the ED: not acknowledging the pain [5], inability to assess pain [6], lack of pain management guidelines in the ED [7], and failure to meet the patient's expectations of pain relief [8]. Pain management in the prehospital setting is also described as sub-optimal [3,9–11]. The reasons for inadequate pain relief in the prehospital setting are not as well studied as in the ED, but some reported hindrances to administering pain relief include: lack of knowledge [12–14], attitudes among the personnel [12], an inadequate analgesia protocol [12,14] and inability to assess pain [12,14,15]. As shown above, the hindrances in the prehospital setting to achieving optimal pain relief are similar to the hindrances identified in the ED [12]. However, since pain is associated with increased risk of complications such as delirium, depression, sleep disturbance and decreased response to interventions for other illnesses, especially among the elderly [9], pain should be considered as the fifth vital sign [16]. Acknowledging the importance of good pain management, some EMS systems use pain management as a key performance indicator [17], and appropriate analgesia can be seen as one of the justifications for advanced prehospital care [13]. There have been attempts to improve pain management in the prehospital setting [7,18,19]. Nevertheless, there is still a need to further investigate the reasons for sub-optimal pain relief in the prehospital setting in order to create a basis for further improvement work on pain management. At present there are no known studies investigating whether there is a difference between prehospital personnel's attitudes to pain management in various EMS systems. Therefore, the aim of this study was to survey the attitudes towards pain management among the prehospital personnel in the metropolitan areas of Helsinki, Finland, and Stockholm, Sweden.

## 2. Material and methods

An observational questionnaire study was conducted. A survey was administered to prehospital personnel in the EMS in a metropolitan area of Helsinki, Finland, and Stockholm, Sweden during 2012.

### 2.1. Study setting, Helsinki

In Helsinki, the EMS serves a population of approximately 621,000 people. The Rescue Department is responsible for EMS along with the University Hospital-based prehospital physicians. The EMS is three-tiered; the first tier consists of personnel with basic life support (BLS) knowledge. The BLS personnel competencies include: ability to use semi-automated defibrillators, tracheal intubation of a lifeless person, and vascular access. No intravenous pain medicine is used on the BLS level. The second tier consists of personnel with advanced life support (ALS) competencies, and one medical supervisor unit. The ALS personnel are Registered Nurses (RNs) or RNs with additional training in prehospital care. A physician-manned unit is the third tier. The Finnish EMS has

24/7 involvement of experienced prehospital physician's and the personnel can always consult a prehospital physician and request assistance at an emergency scene or by phone.

### 2.2. Study setting, Stockholm

There are similarities and differences in the investigated settings, and in Stockholm, Sweden health care is provided to a population of 2.2 million people. The County Council is responsible for the EMS in Stockholm and the service is provided by the organisations within the county and private companies contracted by the County Council. During the study period, three companies were contracted to provide EMS; one company owned by the County Council and two private companies. In Stockholm, the EMS is two-tiered during the day time. The first tier consists of ALS personnel with the same competence as the Finnish ALS personnel. The second tier is a physician-manned unit (7–21), but the physician has not been explicitly appointed as the person responsible for the EMS. During the night shift (22–07), when no physician-manned unit is available, the personnel can contact a physician by phone if advice is needed. This physician is located at the Emergency Medical Communication Centre and does not work as a physician in the prehospital field.

### 2.3. Data collection and participants

A paper questionnaire was distributed to the Helsinki participants before a lecture. The lecture was part of an internal educational seminar for the prehospital personnel. Participation in the seminar was mandatory but answering the questionnaire was of course voluntary. Half of the prehospital personnel attended the seminar on one day and the other half had an identical seminar two weeks later. The participants ( $n = 70$ ) were emergency medical technicians (EMTs) and RNs. In Stockholm, the questionnaire was sent as a link by e-mail to an administrator at each of the three included EMS providers. The administrators forwarded the link to their employees, both EMTs and RNs ( $n = 634$ ). The electronic questionnaire was available for the Swedish participants for 21 days. A reminder was sent via the administrators to the participants on day seven and day fourteen. In the electronic questionnaire answering the questions was mandatory, meaning that submission of the questionnaire was only possible if all the questions were answered.

### 2.4. Questionnaire

The questionnaire consisted of four demographic questions (age, gender, education level and years in profession), 32 pain-related items and two open questions about assessment strategies and pain management. Out of the 32 pain-related items, 22 items had been used in a previous study by Niemi-Murola et al. [20] and five in a study by Stalnikowicz et al. [21]. Five new questions were added. Each item was weighted on a five-level Likert scale from one (1) to five (5), where one indicated strong disagreement and 5 indicated strongly agreement. A *Cross-cultural adaptation process* was conducted since the original questionnaire was in Finnish. The first part of the adaptation process was to translate the original Finnish version into Swedish. This was done by two independent bilingual translators with Finnish as their mother tongue but who were also fluent in Swedish. The two translators were not aware of the purpose of the translation or the use of the questionnaire. The translated versions were compared and differences were adjusted in order to create one single version. This version was given to a third person for back translation into Finnish. Comparison with the original Finnish version was finally made as a linguistic validation in order to establish conceptual equivalence.

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