



NURSE, PHARMACIST, AND ANESTHESIOLOGIST ROLES IN PAIN MANAGEMENT IN EMERGENCY CARE SETTINGS

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Abstract:

Background: Pain management in the emergency department is a critical aspect of patient care, with pain being a common reason for patients seeking emergency care. However, inadequate pain control can lead to negative outcomes and impact patient satisfaction. Factors such as race, age, and fear of complications can hinder proper pain management. Effective pain relief is essential for patient satisfaction and overall quality of care in the emergency department.

Objectives: This study aimed to evaluate current practices and protocols for pain management in emergency departments, identify effective pharmacological and non-pharmacological interventions for acute pain relief, assess the role of specialist nursing, pharmacist technicians, and anesthesia technicians in pain management strategies, and provide recommendations for improving pain management practices in emergency care settings based on research findings.

Conclusion: Effective pain management in the emergency department is crucial for enhancing patient outcomes and satisfaction with hospital services. Standardized protocols, including comprehensive pain assessment and appropriate interventions, are key to delivering high-quality care. Specialist nurses and anesthesia technicians play pivotal roles in implementing evidence-based pain management strategies. Inadequately treated pain can lead to serious consequences, underscoring the importance of prompt and effective pain management in the emergency care setting. By following recommended practices and fostering interdisciplinary collaboration, emergency departments can enhance pain management practices and ultimately improve patient outcomes.

Keywords: emergency, ED, nurse, pain control, anesthesiologist, anesthesia technician.

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Introduction:

Pain constitutes a predominant concern among patients seeking medical attention at hospitals, accounting for nearly 80% of referrals to the emergency department (ED) [1]. Effective pain management in the ED serves as a crucial quality-of-care metric and can serve as an indicator of the overall care provided in this setting [2]. Various factors, including race, age, gender, communication abilities, underlying health conditions, physician awareness, and concerns about potential complications, can hinder the adequate control of pain in patients. It is imperative that pain relief measures are promptly initiated without undue delays awaiting test results and other diagnostic procedures. The cornerstone of pain management lies in the administration of systemic analgesic agents like opioids or nonsteroidal anti-inflammatory drugs (NSAIDs) [3]. The selection and delivery of the treatment regimen should aim not only to alleviate different types of pain effectively but also to minimize side effects and avoid interactions with other medications [4].

Research indicates that patients whose primary pain is effectively managed in the ED tend to report higher levels of satisfaction with the care received at the hospital [5]. Despite this, there is widespread consensus regarding the suboptimal management of pain in the ED [6]. Therefore, equipping emergency medicine physicians (EMPs) with a range of analgesic methods and pain management strategies enables them to provide diverse pain relief options tailored to individual patient needs, ultimately enhancing the quality of care delivered [7].

Current guidelines emphasize the importance of ensuring proper and efficient pain management for all individuals experiencing pain, commencing from prehospital emergency care. The primary goal is to alleviate pain, preserve functionality, and minimize adverse effects [8]. It is recommended to employ standardized protocols in the emergency setting, with each protocol encompassing an initial evaluation of pain presence and intensity using validated tools, both pharmacological and non-pharmacological interventions for pain relief along with pertinent indications and contraindications, continuous monitoring and reassessment of pain post-analgesic administration, and seamless communication of pertinent information to hospital staff. Furthermore, patients should receive additional doses of analgesics if pain persists. The criteria for administering analgesic therapy hinge on various factors, primarily the organization of the emergency service [9].

Objectives:

The main objectives of this review are:

1. To evaluate the current practices and protocols for pain management in emergency departments.
2. To identify the most effective pharmacological and non-pharmacological interventions for acute pain relief.
3. To assess the role of specialist nursing, pharmacist technician and anesthesia technician in pain management strategies
4. To provide recommendations for improving pain management practices in emergency care settings based on the findings of the research.

Pain Assessment:

Assessing pain is a complex process because using a tool with a single-dimensional scale may not capture the full complexity of pain. However, it is important to have a consistent measurement system for evaluating treatment effectiveness and the potential need for additional medication without altering the original scale used for pain assessment. The scientific community advocates for using one-dimensional scales that link pain intensity to the appropriate treatment. In pediatric pain management, guidelines suggest using the FLACC [10], Wong-Baker [11], and NRS [12] scales based on the child's age, along with administering analgesics according to team protocols if the score exceeds 4. Evaluating acute trauma pain in patients can be challenging due to factors such as age, emotional state, and level of consciousness. For instance, in trauma patients, pain is categorized as mild to moderate with an NRS score of 1 to 3, responding to paracetamol and/or NSAIDs; moderate to severe with a score of 4 to 6, managed with mild opioids and/or NSAIDs plus paracetamol; and severe with a score of 7 to 10, requiring treatment with strong opioids and NSAIDs [13].

The role of specialist nursing in pain management in emergency department:

Pain management within the emergency department is a pivotal component of patient care, given its potential to significantly influence patient outcomes through prompt and efficient pain relief. Specialist nurses play a fundamental role in this domain by leveraging their extensive expertise and competencies to evaluate, treat, and oversee patients grappling with pain-related issues. A cornerstone of the strategies employed by specialist nurses in pain management involves the utilization of evidence-based protocols and guidelines to ensure a uniform and superior standard of care [14]. These protocols encompass a spectrum of

interventions, ranging from pharmacological measures like analgesics and nerve blocks to non-pharmacological techniques such as relaxation methods and distraction therapy.

Moreover, specialist nurses collaborate closely with various healthcare professionals, including physicians, pharmacists, and physical therapists, to craft personalized pain management strategies tailored to each patient's unique needs. Furthermore, they offer education and assistance to patients and their families, aiding them in comprehending their pain and emphasizing the importance of adhering to the prescribed treatment regimen [15]. Through the adoption of a multidisciplinary approach and the integration of cutting-edge research and best practices, specialist nurses in the emergency department effectively navigate pain management challenges and enhance patient outcomes.

Nevertheless, it is noteworthy that nurses' attitudes towards pain management may be influenced by a bias related to the severity of illness, as indicated by the diverse pain evaluations associated with the triage color code. This observation implies that nurses often view pain as a symptom, with the intensity of pain perceived as directly proportional to the severity of the underlying disease. Consequently, there is a risk that emergency department nurses may overlook or inadequately address a pain syndrome that appears disconnected from a severe or critical medical condition [16].

The role of anesthesia technician in pain management in emergency department:

An essential component of pain management in the emergency department is the role of anesthesia technicians, who assist anesthesiologists in a variety of medical procedures and ensure the safe and effective administration of anesthesia to patients. Anesthesia technicians are responsible for preparing and maintaining the necessary equipment and supplies for anesthesia administration, as well as monitoring patients' vital signs and responses to anesthesia during and after procedures [17]. Collaborating closely with anesthesiologists, they ensure that patients receive the appropriate level of anesthesia to manage their pain effectively while minimizing the risk of adverse effects.

The field of pain management is increasingly becoming a focus for anesthesiologists, who are not only managing pain in the postoperative period but also addressing conditions such as cancer-related pain, burns, herpetic neuralgias, low back pain, and diabetic neuropathies directly. Pain clinics are now common in both government and private sectors, where anesthesiologists can perform pain-relieving

procedures, provide counseling to patients and their families, and offer rehabilitative services. Anesthesiologists also collaborate with other healthcare professionals in pain clinics to form multidisciplinary teams [18].

Moreover, anesthesia technicians play a crucial role in implementing various pain management approaches, including regional anesthesia techniques like nerve blocks and epidurals, to target specific areas of pain and provide focused relief. They may also assist in administering intravenous medications for pain control and monitor patients' responses to these interventions. Through their expertise and collaboration with the healthcare team, anesthesia technicians significantly contribute to the comprehensive pain management strategies employed in the emergency department, ultimately enhancing the patient experience and outcomes [19].

Methods of pain control in emergency care settings:

Morphine, a commonly used parenteral opioid agent in hospital settings, is frequently employed for managing moderate to severe pain in patients with extremity trauma [20]. In the emergency department (ED), the current practice advocates for initiating pain relief with bolus morphine followed by gradual titration to achieve optimal analgesia. Despite its effectiveness, morphine is associated with adverse effects such as sedation, nausea, hypothermia, and respiratory depression [21]. Concerns regarding these side effects have led many emergency medical professionals (EMPs) to be cautious in administering high initial doses of morphine, with some studies suggesting that even 0.1 mg/kg of intravenous morphine may be insufficient for adequate pain control [22]. Nevertheless, research indicates that morphine can be safely utilized at standard doses over extended periods in patients without severe complications. To prevent misuse, hospitals have implemented stringent controls over the preparation and administration of morphine, which may lead to delays in its use. Elsner et al. [23] demonstrated that while subcutaneous administration of morphine may take longer to achieve effective analgesia compared to intravenous (IV) administration, the overall analgesic outcomes between the two methods are similar. The advantage of subcutaneous administration lies in its avoidance of the need for IV access, making it a viable option in certain scenarios [24].

Regional nerve blocks offer a targeted approach to pain management by interrupting nerve signals to alleviate or prevent pain. In elderly individuals with

femoral bone fractures, nerve block analgesia can significantly reduce the reliance on opioids. This technique, particularly when guided by ultrasound, is straightforward to perform and is associated with fewer complications. Moreover, regional nerve blocks, requiring minimal medication dosages, can be particularly beneficial in challenging environments such as combat or disaster settings [25].

Distal radial fractures are prevalent in both children and adults and can cause considerable pain and distress during manual reduction procedures, potentially compromising the success of the intervention [26]. Various pharmacological strategies, such as short-acting benzodiazepines or propofol with or without opioids, are employed to manage pain during reduction. However, these medications carry their own set of side effects and limitations. Recent controlled trials have highlighted the efficacy of hematoma blocks, involving the direct injection of analgesics into the fracture site, as a rapid and relatively uncomplicated method for pain relief during manual reduction of distal radial fractures. Compared to systemic analgesics, hematoma blocks offer advantages such as reduced risks, improved cost-effectiveness, and faster onset of analgesia, making them a promising option for such interventions [27].

Consequences of inadequately treated pain:

The lasting consequences of inadequately treated acute pain are thought to be multiple and severe, both in the short and long term. These consequences include increased risk of infection, decreased comfort and progression to chronic pain syndrome, a particularly disabling condition that has significant economic and social consequences [28]. The lack of effective pain management not only affects the patient, but also the entire ED environment, as healthcare providers are expected to manage increasingly severe pain, which in turn has resource implications. There appears to be an unmet need for safe, timely and effective management of trauma pain in the emergency setting. However, there are barriers to effective management of pain in the ED, largely due to the lack of effective national guidelines for pain management, delayed or absent pain assessment, reluctance to use opioid analgesia and delay in the administration of analgesia [29].

Conclusion:

In conclusion, effective pain management in the emergency department is crucial for improving patient outcomes and satisfaction with hospital services. Current practices and protocols for pain

management need to be evaluated and optimized to ensure timely and adequate relief for patients. The use of standardized protocols, including comprehensive pain assessment, pharmacological and non-pharmacological interventions, and monitoring of pain relief, is essential for providing high-quality care. Specialist nurses and anesthesia technicians play vital roles in implementing evidence-based pain management strategies and collaborating with other healthcare professionals to improve patient care. Inadequately treated pain can lead to serious consequences, emphasizing the importance of addressing pain promptly and effectively in the emergency care setting. By implementing recommended practices and enhancing interdisciplinary collaboration, emergency departments can enhance pain management practices and ultimately improve patient outcomes.

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