

ENA Topic Brief

Key Information

- Nurses are ethically and professionally responsible for assessing and managing pain in the pediatric patient.¹
- Challenges in pediatric pain assessment and management include the patient's age, cognitive and developmental level, communication ability, previous pain experiences, and fear.⁵
- Understanding these challenges and the interventions to manage pain in the pediatric patient are essential to safe pediatric practice and quality care.
- Appropriate pain relief is accomplished through collaboration among nurses, providers, other members of the healthcare team, caregivers and, if possible, the child, using both non-pharmacological and pharmacological measures.

Pediatric Pain

Purpose

The emergency department (ED) can be a frightening and painful place for a child. In addition to discomfort from a painful injury or medical condition, a child may also experience stress and anxiety from therapeutic interventions, which are often unfamiliar and potentially painful. This situation may also cause anxiety for the caregiver (parent).¹ Pain in children may be difficult to assess because of unique characteristics associated with age, cognitive and developmental level, special needs, communication ability, previous pain experiences, and fear. The purpose of this topic brief is to provide information and resources to enhance the ability of emergency nurses to assess, minimize, and more effectively manage pain in the pediatric patient.

Overview

The International Association for the Study of Pain defines pain as “an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage.”² Pain is multifactorial, influenced by emotional states, cognitive understanding, and developmental level. Pain is also affected by culture, family, environment, and context.³ When pain is untreated or undertreated, the consequences can be difficult and lifelong. Repeated painful experiences may result in long-term or permanent negative effects on the psychological sensitivity to pain, immune functioning, neurophysiology, attitudes, and healthcare behavior.⁴

Access to pain management is a fundamental human right. Nurses therefore have ethical and professional responsibility for assessing children's pain and providing measures to minimize or alleviate it.¹ To provide optimal pain management for the pediatric patient, emergency nurses can expand their knowledge of the physiology of pediatric pain, use appropriate developmental assessment tools and techniques, anticipate painful experiences, initiate age- and developmentally appropriate pain relief measures, and monitor patient responses with frequent reassessment.

Undertreatment of Pediatric Pain

Undertreatment of pain in the pediatric patient may be associated with one of two causes: inappropriate pain assessment or failure to implement effective pain relief strategies. Inappropriate assessment of pain may result from underuse of pain

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assessment tools, incorrect application or interpretation of those tools, or from selection of a tool not appropriate for the patient's age and developmental level. Inappropriate assessment of pain may be based on the myth that infants do not experience pain, which may cause healthcare personnel to minimize or discount an infant's facial or bodily reactions to pain. Helping children effectively communicate their pain enables its more successful management by staff and caregivers.

Inadequate use of pain relief strategies by healthcare professionals may be attributed to a lack of awareness of pharmacologic and nonpharmacologic pain relief options, inappropriate dosing of medications, fear of adverse effects, or an uneasiness regarding the potential for addiction to opioid medications.⁵ Providing practice guidelines and continuing education on the appropriate use of algorithms and tools for the assessment and treatment of pediatric pain, as well as the development of a culture in the ED committed to optimal pain reduction or relief contribute to better experiences for these patients and their caregivers.^{6,7,8}

Pain Assessment

Pain is often assessed as part of a full set of vital signs, affirming its importance in the overall assessment of the pediatric patient. A number of valid and reliable pain assessment tools that consider the age and developmental level of the child are available. These include two methods of assessment, including a subjective self-report and an objective assessment of behavior and physiologic parameters. While there is no consensus regarding the superiority of one pain assessment tool over another, many have been validated for effective use in the pediatric patient.

Pediatric Pain Assessment Tools by Age and Developmental Level

Pediatric pain assessment tools use one or more of the following three methods of measurement:⁹

- Physiologic measures – Physical parameters that are affected by the presence of pain. These are not considered to be voluntarily modifiable, but if the patient is engaging in techniques that will relieve or distract from the pain, these parameters may be affected (e.g., heart and respiratory rates, blood pressure).
- Behavioral measures – Observational parameters of the patient's response to the painful experience (e.g., facial expression, crying, consolability, posture).
- Self-report measures – Severity of the pain as described by the patient.

Examples of pain assessment tools used in pediatric emergency care that are validated by age and developmental level include:¹⁰

Neonates and infants

- Crying, Requires Oxygen, Increased Vital Signs, Expression, Sleeplessness (CRIES): Five objective parameters for post-operative neonates that include both physiologic and behavioral measures with a range of 0 to 10
- Neonatal Pain, Agitation, and Sedation Scale (NPASS): Five objective parameters for critically ill neonates that include both physiologic and behavioral measures with ranges of 0 to 10 for assessment of both pain and sedation

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- Neonatal Infant Pain Scale (NIPS): Six objective parameters, exclusively behavioral measures, for pre-term and full-term infants with a range of 0 to 7
Infants and children (2 months–7 years), pre- or nonverbal older children, and adults
- Faces, Legs, Activity, Cry, Consolability (FLACC): Five objective behavioral parameters with a range of 0 to 10
Children (3 years and older) and adolescents
- FACES pain rating scale: Subjective with a range of 0 to 10
- Oucher: Subjective with a range of 0 to 100 and comes in three culture-based versions (Caucasian, African-American, and Hispanic)
- Poker Chip Tool: Subjective with a range of 0 to 4
- Visual Analog Scale: Subjective with a range of 0 to 10 (This tool may not be numerical; however, an image may have five or more increments along the scale.)
- Color Tool: Subjective with a range of 0 to 10 (This tool is 10 cm in length with zero at its base and a white color, indicating no pain. Color intensity increases to red (or 10) at the top of the scale indicating worst pain.)
- Numeric Scale: Subjective with a range of 0 to 10

All these tools are linked to an actual or implied numeric value defining the pain as none, mild, moderate, or severe. This value can guide the healthcare team in providing appropriate pain management interventions.

Pain Management

A lack of knowledge of pain relief strategies, appropriate dosing, and potential adverse effects can be a challenge to providing adequate pain relief in pediatric patients. A systematic approach to pain management includes staff education and the development of practice guidelines that will have a positive effect on the child, the caregivers, and the bedside nurse. This systematic approach begins with education about pediatric growth and development that creates comfort in the nurse regarding pediatric pain management. With an increased level of comfort in his or her knowledge, the nurse will be better able to establish rapport and trust with pediatric patients and their caregivers. Ongoing communication and the use of validated assessment tools enhance the ability to address and control pain. Caregivers can be taught to use the same pain assessment tools to create a common language between healthcare providers and caregivers, improving pediatric care and pain management.¹¹ Once pain is identified, the next step is to determine the pain relief interventions that might best address the patient's pain. Appropriate pain management can be achieved through collaboration between healthcare providers, staff, caregivers, and the pediatric patient. This can lead to the use of nonpharmacological and pharmacological measures separately or in combination and requires ongoing assessment for the pain.

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Pain Management Strategies:

Non-pharmacological examples

Age	Strategy
Infants	<ul style="list-style-type: none"> ○ Holding the infant ○ Nonnutritive sucking ○ Swaddling ○ Breastfeeding
Children and adolescents	<ul style="list-style-type: none"> ○ Visualization ○ Breathing exercises (e.g., blowing bubbles, deep breathing, party blowers, pinwheels) ○ Ice or heat application, elevation or positioning ○ Developmentally appropriate preparation and explanation of the procedure
All ages	<ul style="list-style-type: none"> ○ Parental presence ○ Developmentally appropriate distraction (e.g., games, patting, touch, singing, toys, books, smart phones, texting friends, video games, apps) ○ Sequential injections as opposed to simultaneous injections ○ Child life specialist ○ Pet therapy

Developed with data taken from Hockenberry and Wilson,¹⁰ Shahid, Benedict, Mishra, Mulye, and Guo,¹² Smith, Iversen, Kossowsky, O'Dell, Gambhir, and Coakley,¹³ U.S. Department of Health and Human Services, Agency for Healthcare Research and Quality,¹⁴ Harman, Zemek, Duncan, Ying, and Petrlich,¹⁵ Skuse, and Lawlor,¹⁶ Uman, Birnie, Noel, Parker, Chambers, McGrath, and Kisely,¹⁷ U.S. Department of Health and Human Services, Agency for Healthcare Research and Quality.¹⁸

Pharmacological examples

Medication	Routes
Opioids	Oral Intranasal Intravenous
NSAIDs and acetaminophen	Oral Rectal Intravenous
24% sucrose solution for young infants	Oral
Lidocaine and lidocaine combinations	Topical (Needleless) subcutaneous injection
Vapocoolant spray	Topical
Nitrous oxide (50%)	Inhaled
Pharmacologic adjuvants Sedatives Antiemetics Laxatives Antianxiety medications	Oral Intranasal Rectal Intravenous

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Conclusion

Emergency nurses can have a profound and long-lasting impact on the alleviation of pain in pediatric patients associated with injury, illness, or painful procedures. Appropriate pediatric nursing education, use of available resources, and building rapport with the patient and caregiver can turn a potentially painful emergency experience into a tolerable one.

Definitions of Terms

Caregiver: Parent, legal guardian, or person responsible for the care of the child and who accompanies the child to the emergency department.

Child: Any pediatric patient from birth to adolescence.

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Additional Resources

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