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Original Contributions

A SURVEY OF CHILDREN'S PERSPECTIVES ON PAIN MANAGEMENT IN THE EMERGENCY DEPARTMENT

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☐ Abstract—Background: Children's pain is frequently underrecognized and undertreated. This study focuses exclusively on children's perspectives of and satisfaction with their pain management in the emergency department (ED). Objectives: Specific study objectives were to 1) describe the pain and ED treatment experienced by children, 2) measure the child's satisfaction with pain treatment, and 3) determine factors associated with satisfaction. Methods: This prospective, descriptive survey examined a convenience sample of 100 children, aged 7–17 years, who were treated for pain in the pediatric ED of a Canadian hospital. We measured children's pain scores, overall satisfaction with their pain management, and perceptions of health care provider communication. Results: Of the 100 children studied, 53 were male, and the mean age was 12.6 years. The maximum mean pain score was reported as 79 mm (95% confidence interval [CI] 75–82) and the mean score at discharge was reported as 34 mm (95% CI 29–39), using a 100-mm modified visual analog scale. The majority of children (92%) were satisfied; three children (3%) were very unhappy and four (4%) were unhappy with their pain treatment. Satisfaction was correlated with pain resolution ($p = 0.018$), effective child–provider communication ($p = 0.045$), and the perception that the medicine worked quickly ($p = 0.034$). Conclusions: Despite continued pain upon discharge, most children were satisfied with their pain management. However, it is important that emergency physicians not interpret patient satisfaction as equivalent to adequate provision of analgesia. The relationship between children's pain management and self-reported satisfaction needs to be further explored. © 2014 Elsevier Inc.

☐ Keywords—pain; pediatrics; children; satisfaction; survey; emergency department

INTRODUCTION

Pain accounts for 50–80% of all visits to the emergency department (ED) (1–4). Oligoanalgesia is a well-documented problem in the ED setting and children often receive less pain medication than adults with comparable medical conditions (2,5–9). Physicians, nurses, and other health care providers underestimate a child's pain regardless of the child's age, injury type, or the procedure being performed (10–12). Although parents are often considered a reasonable proxy, recent studies have found that they also tend to underestimate their child's pain score when compared to their child's self-report (10,13–16). Patient self-reporting is considered the most reliable indicator of the existence and intensity of pain, and it has been established that even school-aged children are capable of accurately describing their own pain experiences (16–21).

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Prior surveys of caregivers accompanying children in the pediatric ED have shown that their satisfaction is associated with perceived pain relief for the child and effective communication with health care providers (22,23). A similar association has been seen when adult ED users are surveyed (24,25). To our knowledge, no study has previously focused solely on children's satisfaction with their ED pain management. Satisfaction is an important factor in determining whether families and patients will collaborate with a discharge plan or seek additional medical care when required, and a better understanding of children's satisfaction is necessary to optimize care delivery in the ED (22,24). Our study objectives were to 1) describe the pain and treatment in the ED experienced by children, 2) measure children's satisfaction with pain treatment, and 3) determine factors associated with this satisfaction.

METHODS

Study Setting and Population

This study was conducted at the Stollery Children's Hospital (Edmonton, Alberta, Canada), a tertiary care pediatric hospital. Children were recruited through the ED, which treats children younger than 17 years of age, has an annual census of 38,000 visits, and is staffed 24 h per day by pediatric emergency physicians.

Design

This study was a prospective cross-sectional survey. A convenience sample of 100 children was selected based on the following inclusion criteria: age 7–17 years; pain was part of the triage-reported presenting problem; children were treated for acute pain in the ED and then discharged home; and families could understand spoken and written English. The survey tool was piloted with 10 families prior to implementation, and study data were then collected from October 2011 to November 2012. Pilot data were not included in the data analyses. One child was excluded from univariate analyses, as he reported being exactly "in-between happy and unhappy." The University of Alberta's Health Research Ethics Board approved this study prior to its implementation.

Study Variables and Measures

For each child, data were collected regarding general demographic characteristics, quality of pain, pain scores, satisfaction with pain management, overall experience in the ED, and discharge advice given. Demographic characteristics included the child's age and sex. A modified 100-mm visual analog scale (VAS) was used as the instrument to measure pain, as it was based on the currently recommended tool for clinical pain research in school-aged children (see Appendix) (20,21). Children were asked whether they had pain in the 24 h prior to the interview, and asked to record their highest and lowest pain scores. They also recorded their pain at ED discharge. Pain scores were classified into mild (< 40 mm), moderate (40–69 mm), and severe (> 70 mm) pain based on the World Health Organization's (WHO) pain ladder (26). An interval pain score was calculated by subtracting the discharge pain score from the maximum pain score. The minimal clinically important difference (MCID) for a 100-mm VAS score is generally considered to be between 9 and 20 mm; a MCID of 20 mm was used for this study (20,21,27,28). Our survey instrument, the Total Quality Pain Management Questionnaire-Modified (TQPM), is validated as a measurement tool for children's acute pain and satisfaction after surgery, and has been applied in other clinical and research settings (23,29).

Study Protocol

A trained research assistant approached children just prior to ED discharge. Interested children were screened for eligibility and, if deemed eligible, both caregiver and child provided written consent and assent, respectively. The research assistant verbally administered the TQPM questionnaire and parents were instructed not to help their children respond to questions. The first one-third of the survey consisted of demographic questions (e.g., child's age, gender) and questions regarding pain management and discharge advice from physicians or nurses. The remaining two-thirds of our survey was the validated TQPM tool developed by Foster and Varni (29). Gift cards were provided to children once the survey was completed. One team member (L.W.) entered all the anonymous data in a secure, Web-based abstraction form using RedCAP (Research Electronic Data Capture), a secure, Web-based application designed to support data capture for research studies (30). A second team member (S.A.) reviewed 10% of the data entered for accuracy, although a formal Kappa value was not calculated to determine interrater reliability.

Data Analysis

Statistical analysis was performed using IBM Statistics for Windows, Version 20.0 (IBM Corporation, Armonk, NY). Means, SDs, and 95% confidence intervals (CI) were computed for continuous data (e.g., age, VAS), and rates were calculated for categorical data (e.g., gender). Differences in continuous variables between groups were tested using Student's *t*-test, whereas

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