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Investigating discharged ED patients' pain management experience

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ABSTRACT

Introduction: 79% of ED patients present with pain, yet little is known regarding how unresolved pain affects patients' functional status.
Methods: This prospective, descriptive, 7-day pilot-study investigated how unrelieved pain affects functional status. Participants self-entered demographic data at ED discharge while research-team members collected triage scores, pain intensity scores, pain treatments, pain reassessments, discharge pain intensities, and prescriptions. Seven-day pain diaries were completed. At follow-up participants completed four PROMIS questionnaires.
Results: We approached 96 patients at ED discharge enrolling 25 (26%); 12 (48%) completed the entire study; 64% were female, 19–66 years (38.12 ± 14.23). Pain intensity at discharge was 7.25 ± 1.3 (4–10). Pain intensity 24 hours after discharge was 5.71 ± 3.12 and 7 days later was 2.50 ± 1.35. Participants rated their health (1 = poor, 5 = excellent) as good (3.33 ± 0.99), and reported moderate fatigue (2.83 ± 0.58) (1 = none, 5 = very severe). T-Scores for Pain Behavior (60.5 ± 2.8), Pain Interference (66.6 ± 6.0), and Sleep Disturbance (56.5 ± 10.0) were worse than the general public.
Discussion: Patients are discharged with unrelieved pain affecting their lives. Research investigating pain assessment and treatment along with detailing patients' daily pain intensity and satisfaction, self-management of pain, and functional status is warranted. Demonstrating these relationships may lead to interventions designed to quickly alleviate decreased functional status so patients may return to their previous health status.

United States emergency departments (ED) continue to experience an increasing influx of patients as millions of Americans use EDs as their only access to healthcare. With approximately 79% of ED patients presenting with pain symptoms, comprehensive pain management is essential, yet little is known about how patients manage pain after discharge and the effect of pain on patients' functional status (Garbez et al., 2006). Research is needed to determine if a relationship exists between pain management in the ED and post-discharge patient outcomes. By investigating patient's ED pain experience and the immediate period following discharge, ED clinicians will gain a more comprehensive picture of the ED patient's pain experience which may lead to changes in ED pain management.

Pain related complaints are frequently treated in the ED yet patients are often discharged with little to no pain relief. Johnston et al. (1998) compared self-reported pain intensity scores upon admission and discharge. They found over 52% of the patients presented with pain intensity scores of 4 (Numeric Rating Scale [NRS] 0–10) or more, with 18% reporting 8–10 NRS scores. At discharge, 11% reported NRS scores of 8–10, with an additional 11% reporting an increased pain intensity score since admission to the ED. Garbez et al. (2006) surveyed ED patients via phone and found that patients reported little to no pain relief upon discharge and they continued to experience pain 96 hours after ED discharge. Continued pain interfered with patients' ability to work, socialize, and ambulate. Thomas et al. (1996) found patients were often non-compliant with discharge instructions. McIntosh and Leffler (2004) found 13% of patients did not fill prescriptions and 26% who did, experienced medication side effects. These few studies indicate further investigation of patients' pain management experiences beyond ED discharge is necessary to determine how unresolved pain affects patients' lives.

Patients are reporting high pain intensity scores both upon ED arrival and at discharge, often with little or no changes in their pain intensity scores while being treated in the ED (Todd et al., 2007). Investigating patients' ED experience including how their pain was assessed and treated in the ED along with detailing patients' daily pain intensity and satisfaction, self-management of pain (medication use, non-pharmacological interventions), and functional status for seven-days after ED discharge will enhance our

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understanding of ED patients' overall experience post ED discharge. However, the availability of instruments to measure self-reported pain management in the post-ED discharge patient population is scarce and untried. The Patient-Reported Outcomes Information System (PROMIS) item banks (Amtmann et al., 2010; Buysse et al., 2010; Hays et al., 2009; Revicki et al., 2009a) are symptom specific assessment tools providing accurate measures of patients' self-reported health status. Although untried in the post discharged ED population the PROMIS questionnaires offer an opportunity to capture essential data in the post ED discharged patient population. In addition, technology now exists allowing participants to directly input data via touch-screen computers, thereby reducing sources of error and bias in data collection (Wilkie et al., 2003). Using computers for data self-entry also allows administration of PROMIS questionnaires via computerized adaptive technology (CAT), thereby decreasing participant burden.

This study intended to describe how patients' pain was assessed and treated in the ED and to investigate how patients with unresolved acute pain managed their pain for seven-days after ED discharge. We examined pain intensity scores and how pain affected study participants utilizing self-data entry and PROMIS questionnaires to collect exploratory data and determine resource needs for further, definitive studies.

1. Methods

1.1. Design

We conducted a prospective, descriptive, 7-day pilot-study to describe how patients' pain was managed and treated in the ED and how these patients managed their unresolved pain during a 7-day period after ED discharge. Institutional Review Board approval was received from the study hospital and Illinois State University.

1.2. Setting and subjects

We recruited subjects upon discharge from the emergency department at a Level II trauma center located in central Illinois that treats approximately 42,000 patients per year. Research team members were present in the emergency department Monday through Friday from 11 am to 7 pm for 8 weeks. We enrolled patients who (1) presented to the ED with an acute pain complaint (pain less than 3 months), (2) were discharged with moderate (4–6) or severe (7–10) pain intensity scores, (3) were able to speak and understand English, and (4) were 18 years of age or older. We excluded patients with an absence of pain, pain lasting for more than 3 months, acute life-threatening disease (e.g., myocardial infarction, cerebrovascular accident), altered mental status, language barriers, and those admitted to the hospital or transferred to another facility.

1.3. Procedures

At discharge, the emergency nurse informed the patient that members of a research team would like to speak to them about a research study on pain management. Upon receiving verbal approval from the patient a member of the research team introduced the study. After study procedures were explained and informed consent obtained, participants were asked to complete demographic information and report current pain intensity, duration of pain, and satisfaction with pain management on the touch-screen computer. Participants were instructed on how to complete the 7-day diary which included documenting their pain intensity and satisfaction scores along with daily analgesic consumption and use of non-pharmacological therapies such as ice and elevation. Participants' phone numbers and address were obtained to be used for follow-up visits. After completing these initial research procedures, participants left the emergency department.

Members of the research team completed a review of the medical record that included triage scores, pain intensity scores, ED pain treatments, pain reassessments, discharge pain intensities, pain related discharge instructions, prescriptions written, and non-pharmacological pain management treatments the participants received. On the seventh day after study enrollment, a research team member met with the participants to collect the pain diaries and complete the research questionnaires via a touch-screen computer. Once the questionnaires were complete the participant study responsibilities were concluded. Research team members then entered pain diaries into the database.

1.4. Instruments

The Assessment Center, Sponsored by the National Institutes of Health (NIH), operates with user friendly, free programs that allow for administration of PROMIS instruments and data storage and retrieval. The Assessment Center enables researchers to incorporate investigator designed tools and PROMIS tools to provide a seamless computerized administration of all study instruments to participants (Gershon et al., 2010). Data may be added directly into the web-site via the Internet or the program can be loaded onto personal computers and uploaded to the Assessment Center web-site at a later time.

1.4.1. Demographic data

We used the Assessment Center and designed our own demographic questionnaire. Participants entered their age and identified their gender, race/ethnicity, educational preparation and reason for visiting the emergency department.

1.4.2. Pain management information

Participants were asked to document current pain intensity score using an 11 point NRS (0–10), pain location, pain type, pain character, and duration of current pain episode. In addition, participants were asked to input whether they consumed a pain medication prior to arriving at the emergency department, whether they expected to receive a pain medication while in the emergency department, and their overall satisfaction with their ED treatment.

1.4.3. Medical record review

Research team members completed a medical record review after the patient left the ED. We collected triage scores, pain medications administered in the emergency department, and prescriptions given at discharge.

1.4.4. Pain diary

After ED discharge, participants completed a written daily pain diary for 7 days. Participants were asked to choose a consistent time period (e.g. 9 am) to complete their pain diary entries and to record their answers reflecting on the past 24 hours. Participants recorded their pain score using a NRS (0–10), recorded their satisfaction with their pain score (1, very satisfied; 5, very unsatisfied), and document the medications or non-pharmacological pain modalities utilized for the past 24 hours.

1.4.5. PROMIS questionnaires

The PROMIS is a National Institutes of Health (NIH) initiative (Cella et al., 2007) designed to provide researchers with valid and reliable instruments for the measurement of a variety of activities, including global health status (Hays et al., 2009), pain behaviors (Revicki et al., 2009b), pain interference (Amtmann et al., 2010), and sleep interference (Buysse et al., 2010). Each PROMIS Item Bank