CANADIAN JOURNAL of EMERGENCY NURSING
JOURNAL CANADIEN des INFIRMIÈRES D'URGENCE
THE OFFICIAL JOURNAL OF THE NATIONAL EMERGENCY NURSES' ASSOCIATION
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RESEARCH REVIEW

Nursing staff factors influencing pain management in the emergency department: Both quantity and quality matter

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Citation

Lee, S. R., Hong, H., Choi, M., & Yoon, J. Y. (2021). Nursing staff factors influencing pain management in the emergency department: Both quantity and quality matter. *International Emergency Nursing, 58*, 101034. https://doi.org/10.1016/j.ienj.2021.101034

Background

Pain is a multifaceted and complex condition influenced by physical, psychological, cultural, and sociodemographic factors (Pierik et al., 2017). Attempting to summarize the experience of pain in a single numerical value undermines the dual nature of pain (being both a sign and a symptom of possible physical and psychological origin). The medical model of care focuses primarily on physiology/pathophysiology in seeking a source of pain and may overlook other factors that contribute. Cartesian Mind-Body dichotomy of pain suggests pain is of physical or psychological origin, mutually exclusive of one another; why pain is individualistically perceived and expressed (Stilwell & Harman, 2019). Furthermore, nursing care is more fluid than the medical model of care; when there are no conclusive diagnoses, nurses utilize their experience to perform further assessments and diagnostics and help modify interventions (Donnelly et al., 2019). A multidisciplinary approach utilizing multifactorial pain assessment tools is warranted to improve pain management outcomes effectively (Pierik et al., 2017). Examples of tools that move beyond the numeric rating scales include the Clinically Aligned Pain Assessment (CAPA) tool allows for a comprehensive assessment of pain and facilitates development more effective treatment plans (Vitullo, 2020). Tools for patients with dementia might include the Checklist of Nonverbal Pain Indicators (CNPI) or the Pain Assessment in Advanced Dementia (PAINAD) for non-verbal pain assessment (Smith, 2005). A key initiative in pain management requires health records to incorporate pain assessment tools that are reviewed and revised continuously to reflect the patient's dynamic state.

Purpose of the study

The purpose of this study was to evaluate nursing factors related to analgesic administration and reassessment of pain status.

Research approach and methods

The authors used a retrospective correlational approach to explore their research question. After receiving ethics approval, they collected demographic and patient care information from a variety of sources including their clinical data warehouse, physician and nursing records, as well as general nursing demographic information including years of experience and nurse-patient ratios. Other factors studied included time from order to administration of analgesic (TTA), whether reassessment occurred post analgesic and, if so, how long did it take. The data were categorized and coded then analyzed using descriptive statistics. Demographic data was summarized using descriptive statistics. Time-to-administration was evaluated with a log-transformation then a linear mixed effect model. Type I errors were controlled using the Bonferroni correction method, a statistical method for multiple comparisons.

Setting and sample

The setting for this study was a tertiary Emergency Department (ED) in Korea. The authors used a convenience sample. Inclusion criteria were adults (age 18 and older) who presented to the ED during the study period with complaints of abdominal pain 4/10 or greater and received pharmacologic analgesia.

Findings

Of the more than 52,000 patients who visited the ED during the study period, 1,428 were included in the analysis having met both the inclusion criteria and having complete documentation. The mean age of participants was just over 57 with an even split between male and female. The vast majority had a triage score of "3/5" on the Korean Triage Acuity Scale (89.4%) and reported

ISSN: 2293-3921 (print) | ISSN: 2563-2655 (online) | https://doi.org/10.29173/cjen173
Print publisher: Pappin Communications http://pappin.com | Online publisher: University of Alberta www.library.ualberta.ca/publishing/open-journals

their pain score as being between 4 and 7 (87.8%). The median time from order of analgesic to administration was 16 minutes. Only 55% of patient were reassessed after receiving analgesic. Nurse to patient ratio was noted to be the factor that most significantly influenced time to analgesic administration while nursing experience was correlated most closely with nursing experience level. Other factors that were correlated with reassessment included marginally higher KTAS score and abnormal vital signs on presentation.

Commentary

Pain management in the emergency department (ED) can be a complex intervention for healthcare practitioners. as there is an attempt to promptly balance patients' emotional and physical distress with their comorbidities while providing care to other patients in between. The authors postulated a statistically significant positive association between nurse-to-patient ratio and TTA. However, this same interval was not influenced by the nurse's ED experience. They further noted that the nurse-to-patient ratio had little impetus for reassessing the patient, although nurses with greater ED experience did. Lee et al. (2018) found that 55% of patients were reassessed after receiving analgesia, and only 24.6% of all patients were reassessed in less than one hour—elucidating concerning gaps in patient care. Patients reassessed after one hour tended to be older, have more severe NRS, and have more vital signs outside of normal parameters. The authors incidentally discovered a link between types of analgesics (opioid versus non-opioid) and TTA, with non-opioids taking longer to administer.

Some of the strengths of this article are that the authors addressed a focused issue and were diligent about inclusion criteria and methods of gathering data. The focus of TTA and the three reassessment groups concerning defined nursing factors gave this study a uniform method of collecting information and showed diminished potentials for biases. Additionally, the authors used an appropriate method to answer the question by retrospectively evaluating data sets to generate quantitative insight into the issue of nursing staff factors that influence pain management.

The authors collected data from multiple sources of health record, as noted above, using pre-determined intervals with NRS of pain in a retrospective fashion. This allowed the authors' identification of concerning gaps present in pain management without potentially manipulating variables. Furthermore, evaluating these data points allowed them to correlate their findings to nursing factors they considered to be influencing the time intervals. A robust literature review of best practice standards of time to analgesia in the ED, performed by Hatherley, Jennings, and Cross (2016), further acknowledges similar benchmark time intervals and NRS used for standardization of care globally. A standardized measurement allows for consistency across the research of similar focus and strengthens the validity and applicability of evidence into practice.

As noted by the authors, the finding of increasing time between order to initial administration of analgesics associated with a widening nurse-to-patient ratio are consistent across the literature. Increased workloads and poor staffing reduce the time nurses can allocate to each patient and is directly associated with inadequate pain management, missed documentation of pain assessments, and extended ED length of stay (Varndell et al., 2019; Hughes et al., 2021).

Using a similar NRS for the pain and assessment intervals to track data points retrospectively, Hughes et al. (2021) found that more than 60% of patients who received analgesia in the ED had no documented score in their records causing discordance with actual performance. In addition, when pain documentation is performed, there is little time and space to effectively depict all the aforementioned multifactorial elements of pain, negatively impacting patient care (Hughes et al., 2021; Sampson et al., 2019).

One of the limitations to this study is the possibility of incomplete data collection, which is inherently more prevalent with a retrospective study (Hatherley, Jennings, & Cross, 2016). The effective management of pain in the ED requires an individual approach that cannot be completely captured in the electronic health record and adequately analyzed through retrospective analysis.

The author's claim that "nurses with more ED experience were more likely to reassess patients' pain," based on objective data points, might be better explained by the fact that nurses with more emergency experience have a broader foundation in the ability to efficiently manage assessment, diagnostics, and interventions and the time intervals between reassessment is evidence of that.

The need to assign a numerical value to a complex condition monitored by parameters that only account for objective data points is a significant barrier to translating Lee et al.'s (2021) findings into practices that will make effective changes; objectivity is considered a bias in nursing literature (Vuille et al., 2018). Barriers are evident in emergency nurses' lack of knowledge surrounding the complexity of pain resulting in stigmatization of patients who frequently return to the ED. There is a cycle of inappropriate pain management and recurrence often causing patients to feel invalidated and are labelled as drug-seekers (Martorella et al., 2019; Kahsay & Pitkajarvi, 2019; Shoqirat et al., 2019; Brant et al., 2016). Furthermore, recognizing pain as a fifth vital sign in isolation of other cofounding factors has increased pressure for healthcare providers to prescribe pain-relieving opioids to avoid allegations of malpractice, directly contributing to the current opioid crisis—a result of inaccurate pain assessments, analgesics not reflective of the patient's needs, and subsequent patient dissatisfaction with their care (Scher et al., 2018).

Future research in pain management would benefit from adding Boolean search and machine learning algorithms within electronic health records to extrapolate and analyze clinical notes beyond objective data points to provide a more comprehensive evaluation of pain management outcomes (Fodeh et al., 2017). Developing comprehensive pain assessment questionnaires in both paper and electronic form, available to patients prior to their emergency visit, is fundamental to streamlining a complex condition within a time-constrained environment. Scher et al. (2018) found that a multifactorial questionnaire provided to patients identified the various factors contributing to the patient's NRS of pain.

This research highlights concerning gaps in ED pain management. However, these findings need to be cautiously applied to the clinical setting. Emergency nurses face constant evolving circumstances within a fast-paced environment and cannot budget more time to focus solely on the complexities of pain management.

Key Findings

- Reorientating the focus of pain assessment from a symptom to an underlying sign would encourage emergency nurses to direct further assessments, diagnostics, and interventions, contributing actively and dynamically to the diagnostic process.
- When emergency nurses have more control over care provision, it can be more collaborative, and patient centred
- Multifactorial questionnaires have strong reliability, construct validity, and receptiveness in patients with pain. In addition, it is simple to use in clinical practice and offers a more comprehensive insight than the NRS into how the pain impacts the patient's quality of life (Scher et al., 2018).

About the authors

Jonah Swen has worked for the past 12 years as an Advanced Care, Critical Care, and Flight Paramedic in urban, rural, and flight settings across Alberta and the Middle East. In the past year, Jonah has transitioned to working full-time as a registered nurse at the Rockyview General Hospital ED while continuing to work as a paramedic and undertaking Advanced Studies in Critical Care Nursing at Mount Royal University. His primary pursuits include critical care and emergency medicine, and he is interested in becoming an educator.

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