Original Article

Adherence to Guidelines of Pain Assessment and Intervention in Internal Medicine Wards

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Abstract:

Proper management of pain reduces morbidity, assists in recovery, and increases patient satisfaction. The role of a nurse in an accurate pain evaluation is pivotal. It seems that pain evaluation guidelines are not fully adhered to by nurses. The aim of this study was to assess the performance of pain evaluation and management by nurses in patients admitted in internal medicine wards and to identify groups of patients in which pain evaluation was insufficient. In this cross-sectional study medical records of 59 randomly chosen patients were reviewed: age 64.5 ± 18.5 years, 55% women, and hopitalization length 3.9 ± 1.6 days. Data relating to pain evaluation and management were obtained for every patient–hospitalization day (total 213 patient-days) and compared with the guidelines. Pain was evaluated in 176 out of 213 encounters (66.2%): 84.3% upon admission and 72.7% daily routine evaluation in accordance with guidelines. In 23.7% of evaluations, pain level warranted alleviating treatment (visual analog scale ≥3). However, such treatment was administered in only 29.3% of these cases. Reevaluation after treatment and additional evaluations thereafter were performed in 33.3% and 22% of encounters, respectively. The independent factors associated with the reduced performance of pain evaluation were: widower (odds ratio [OR] 0.88, 95% confidence interval [CI] 0.78-0.98; $p = .024$), reduced level of consicousnness (OR 0.77, 95% CI 0.63-0.95; $p = .013$), mental disorders as a cause of hospitalization (OR 0.81, 95% CI 0.71-0.94; $p = .004$), and isolation (OR 0.87, 95% CI 0.76-0.99; $p = .03$). Pain assessment and management in internal medicine wards is insufficient, especially in the above subgroups. Specific education programs targeted to the latter subgroups and to the unique pain assessment tools are warranted.

Proper evaluation and management of pain may reduce morbidity, assist in recovery, and increase patient satisfaction and quality of life (Ballantyne, Carr, Chalmers, Dear, Angelillo, & Mosteller, 1993, Hurley, Coben, & Wu, 2009, The Joint Commission [TJC], 2001). Therefore, the issues of pain evaluation and management, especially in the setting of hospitalization, are an increasing interest of

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caregivers. Furthermore, TJC and the American Pain Society have suggested considering pain as "the fifth vital sign," indicating that pain intensity should be measured with temperature, heart rate, blood pressure, and respiration in all patients (McCarberg & Stanos, 2008, TJC, 2001). The Israel Ministry of Health has instructed that pain evaluation is a vital measurement that must be obtained and recorded in every hospitalized patient within 12 hours of admission and at least once per hospitalization day (Ministry of Health, Israel, 2011).

Despite the importance of pain management it seems that pain evaluation guidelines are not fully adhered to by caregivers (Clarke, French, Bilodeau, Capasso, Edwards, & Empoliti, 1996, Herr & Titler, 2009). Proper pain management depends on accurate pain evaluation, for which the nurse role is pivotal (Miaskowski, Nichols, Brody, & Synold, 1994). Earlier studies found that the main reason for nonadherence to pain evaluation guidelines by nurses is insufficient knowledge and practice (Bergh & Sjöström, 1999, Mackrodt & White, 2001). Studies that evaluated the influence of education on various behavioral changes found that nurses who were taught and educated on pain management evaluated pain more frequently and more efficiently (Hansson, Fridlund, & Hallström, 2006, Michaels, Hubbartt, Carroll, & Hudson-Barr, 2007). It was supported by Sloman, Rosen, Rom, and Shir (2005), who stated that an educational program to teach nurses the various techniques and importance of pain evaluation was warranted. Nevertheless, it was mentioned that experienced nurses are more aware of the importance of pain management than younger, often more educated, nurses (ten Cate, Snell, Mann, & Vermunt & Carlson, 2010).

Five years before the present study, several programs to educate nurses in proper pain evaluation were launched in our medical center. These programs included specific courses, meetings, trainings, inspections, and introduction of pain evaluation rulers for various populations.

The aims of this study were to assess the performance of pain evaluation and management in patients admitted in internal medicine wards and to identify groups of patients in which pain evaluation was insufficient.

METHODS

Study Population

In this observational retrospective study, medical records of randomly chosen patients who were admitted in one of the six internal medicine wards of the Soroka University Medical Center, Tertiary medical center, Southern Israel, in February-December 2009 were reviewed. Exclusion criteria were: 1) patients discharged or deceased $\leq$24 hours after admission; and 2) patients who were transfered between various wards.

The local Ethics Committee approved the study, which was performed in accordance with the Helsinki declaration.

Data Sources and Classifications

Data relating to pain evaluation and management were obtained per hospitalization day from every patient. The data included the time, pain level according to the visual analog scale (VAS), and whether treatment was administered for pain relief after the evaluation. The obtained data were compared with the guidelines of the medical center, based on the guidelines of the Israel Ministry of Health, which include the following recommendations (Ministry of Health, Israel, 2011):

- Pain evaluation should be performed in every patient on admission and at least once a day afterwards.
- Whenever the VAS is $\geq$3, a pain relief treatment (e.g., nonsteroidal antiinflammatory drugs, opioids, etc.) should be administered and pain level reevaluated.
- Furthermore, in patients with VAS $\geq$3, pain evaluation should be performed more frequently, at least once more during that day (preferably once every shift).
- This process should be repeatedly followed until the patient is pain free (VAS = 0) or suffers only mild pain (VAS 1-2), considering the safety of pain relief administration.

The following additional data were obtained from the hospital records and patient files: demographics (age, gender, mother tongue, primary caregiver, etc.), clinical characteristics of the admission (type of admission [urgent or elective], reason for admission, medical history, etc.), and administrative characteristics of the hospitalization (date, hour, ward, length of stay, etc.).

Performance of pain evaluation according to the above guidelines was a primary endpoint. Additional outcomes were the VAS values and pain management (administration of treatment).

Statistics

The statistical analyses were performed using Predictive Analytics Software (PASW) Statistics 18. The analyses were performed on a per patient-day basis. We used OpenEpi Software (http://www.openepi.com) to calculate the sample size. It was based on preliminary results in ten subjects, in whom pain was evaluated in 63% in accordance with the guidelines. We assumed the annual hospital population of 88,000 patient-days ($\sim$245 internal medicine patients daily). Additional assumptions were the possible percentage of pain assessments up to 70% (e.g., $\pm$7%), the mean length of