Evaluating an Educational Approach to Improve Pain Assessment in Hospitalized Patients

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Pain assessment is a multifaceted process. A common assumption is that all nurses have the same baseline knowledge about pain, a potentially erroneous assumption that influences clinical practice. Nurses have varied experiences in education and pain management. This article describes a research project conducted by the hospital’s clinical nurse specialist group to evaluate the effects of a nursing education program on pain assessment and pain management of hospitalized patients in an 841-bed academic medical center. Key words: pain assessment, pain education, pain management, quality improvement

Pain is a multidimensional subjective experience for each person. Pain associated with surgery, procedures, and tests is a common occurrence for hospitalized patients. Patients worry about the uncertainty of what to expect in terms of pain during a hospitalization. Untreated pain may result in prolonged hospital stays, decreased patient satisfaction, and increased healthcare costs.

PAIN ASSESSMENT

The benefits of pain assessment and management include reduced pain for the patient, quicker postoperative recovery, improved sleep, increased mobility, and increased patient satisfaction. De Rond and colleagues concluded that pain management is often inadequate in hospitalized patients. Common reasons for poorly managed pain are lack of clinician skills needed to manage pain appropriately and inaccurate pain assessment. The literature supports that a pain-monitoring program that includes pain education programs for nurses in combination with performance of daily pain assessment results in improved pain communication and documentation.

The introduction of The Joint Commission pain standards led our hospital to establish a multidisciplinary pain management committee. The committee had the responsibility of developing a hospital-wide pain management policy to ensure that patients received the best level of pain control that could be
achieved safely. The policy delineated that assessment of pain would be a standard of clinical care with the expectation that every patient would have pain assessed at least once a shift. The policy outlined consistent guidelines for pain assessment and provided appropriate pain rating scales for specific populations.

**ASSESSMENT TOOLS**

Pain assessment tools provide information about patients’ pain experiences and documentation of pain ratings. Four pain assessment tools were initiated to measure patients’ pain: The Adult/Adolescent Pain Rating Scale, the Wong-Baker FACES Scale, the FLACC Scale, and the Comfort Scale. These tools were implemented in 2001 with the new pain management policy. Staff education included a self-study packet and a pocket-sized pain rating scale. One side of the scale included the 0–10 numeric scale, and the other side included the FACES scale. Since the pain standards were a Joint Commission requirement, department managers were required to keep a log of staff who received education about the new pain policy. The policy was also made available on the hospital’s internal Web site for continual access.

After the new policy and assessment tools had been in place for 6 months, staff nurses continued to verbalize confusion over what to do with pain assessment data once they obtained it. Nurses were focused on obtaining a number and not looking beyond the initial score to pain reassessment or the patient’s response to interventions. The Multidisciplinary Pain Management Committee’s hospital-wide pain assessment data reflected acceptable outcomes, but expert practitioners witnessed less than optimal pain management at the bedside. The clinical nurse specialist (CNS) group and the Multidisciplinary Pain Management Committee surmised that there was room for improving pain management throughout the hospital. The CNS group believed that we could provide pain education to various specialty areas, and perhaps this would lead to better pain management practices throughout the hospital.

**PURPOSE**

The purpose of this study was to evaluate the impact of a nursing education program on pain assessment and pain management in hospitalized patients. We hypothesized that

1. units that received education about pain assessment and pain management would have improved pain assessment and reassessment documentation,
2. units that received education about pain assessment and pain management would show significant improvement in patient/family survey results, and
3. nurses who received education about pain assessment and pain management would score higher on a pain knowledge test than nurses who did not receive the education.

**METHODS**

**Study design**

A quasi-experimental design was used. A total of 16 units were included: 8 intervention and 8 control units. The intervention units received a nursing education program on pain assessment and pain management while the control units did not.

**Sample and setting**

This study was completed at an 841-bed academic medical center in the southeastern United States. Staff nurses working on units in the specialty areas of adult medicine/surgery, adult critical care, geriatrics, and pediatrics participated in the study. Two units from each specialty area received education about pain assessment and pain management while the control units did not.

**Data collection**

Data were collected for a 9-month period, resulting in data on 911 patients. Ten CNSs
collected the data on the nursing units. Medical record reviews and patient surveys on all 16 units were completed at 3 different intervals: at baseline and 1 and 6 months after the intervention. Unit managers were informed of the research project and data-collection process, but only limited information about the study was provided. Nursing staff were accustomed to educational offerings on the unit level but were not aware that this educational intervention was part of a research study.

**Chart review**

Medical record reviews were conducted retrospectively by computer or paper chart review for a 24-hour period during a patient’s hospitalization. Data collected included documentation of pain assessment per shift, total number of pain scores during a 24-hour time period, documentation of follow-up pain assessment within 1 hour of intervention, and demographic data. Medical record reviews were conducted weekly for a period of 1 month. The desired goal was to review 5 patient charts per unit per week. This goal was not always met because of lack of new patient admissions on smaller units or chronic patients present in the ICU areas. A convenience sample was obtained on all 16 units. The patient must have been on the unit for at least 24 hours to be selected.

A data-collection tool for chart audits was created by the CNS group. A codebook was developed to direct data collectors about each variable on the data-collection tool. To ensure consistency, interrater reliability was assessed intermittently throughout data collection by the co-principal investigator. Completed data sheets were reviewed weekly, and clarification about ambiguous data was directed to the respective data collector.

**Patient/family survey**

Weekly surveys were completed with patients and/or family members. The goal was to survey approximately 50% of patients in the study whose chart was reviewed that week. Using a convenience sample, the data collectors for the unit selected patients to be interviewed. The survey was administered verbally by the data collector. Patients responded to questions about the pain management; if the patient was unable to respond, family members responded for them. Survey questions were based on our hospital quality improvement pain management tool and knowledge of pain scales and pain relief methods (Fig 1).

**Nurse pain knowledge test**

Nurses’ knowledge of pain assessment and management was also evaluated in this study. An abbreviated form of the Nurses’ Knowledge and Attitudes Survey Regarding Pain was used to measure nurses’ knowledge. The original instrument created by Ferrell and McCaffery consists of 37 questions including true/false, multiple-choice, and case-study items. The CNS group selected 15 questions from the instrument to create an abbreviated version of the tools for adult and pediatric populations. The authors of the instrument provided permission for use of all or part of the tool.

This measure was administered at the beginning of the study to nursing staff on all 16 units and given again after the final data collection was completed at the 6-month interval. Nurses on intervention units completed the test before the educational intervention and returned the tests to the CNS leading the class. Nurses on control units received the pretest in their mailbox on the nursing unit with a brief cover letter and instructions regarding where to return the completed test. The posttest was distributed to nurses on intervention and control units in their mailbox. Tests were taken anonymously, and the tests were not coded to track for individual returns.

**Intervention**

Nursing staff on intervention units were encouraged to attend a 20- to 30-minute educational session and demonstrate competency with the use of specific pain assessment tools. Objectives of the educational session included the following:

1. differentiate between acute pain and chronic pain;
2. discuss common myths and barriers regarding pain management;
3. assess pain using the hospital-designated pain scales;
4. state pharmacological and nonpharmacological interventions for pain; and
5. evaluate pain interventions and document pain reassessment.

The educational intervention provided by the CNS group offered pragmatic examples of how to assess and manage pain in various patient populations. For consistency, 4 CNSs provided the education. An outline for the education sessions was developed and followed throughout to ensure that the educational content was consistent among units.

After the educational session, a short video clip was shown depicting either an adult or a child pain scenario. To assess competency, participants were asked to complete a pain assessment using the proper pain assessment tool. The pain assessments were then discussed and reviewed as a group. At the conclusion of the session, a pain management resource notebook was provided for each of the intervention units. The notebook contained slides from the educational session, examples of each of the pain scales, guidelines
for assessment and management of pain, and our hospital’s pain management policy. The notebook also contained a review of the literature that provided several articles and resources for pain management. We did not monitor staff use of the resource notebook. The educational sessions provided a forum for misconceptions to be clarified and questions to be answered.

RESULTS

Chart review

The intervention and control groups were similarly matched in patient age, gender, and ethnicity. Weekly chart reviews examined nurses’ documentation of pain assessment. We were looking for documentation of pain assessment at least once every shift. There were 911 patient responses documented. Using chi-square analysis, no statistically significant differences were found between nursing units that received the educational program and those that did not. Additional analyses were completed to compare outcomes. Data from the first phase units were compared with those from the second phase; control units were compared with intervention units for both phases I and II; and comparisons were made across the 3 data-collection time periods. There were no statistically significant differences.

In reviewing pain quality improvement data collected prior to our study, we incidentally noted that there was a slight improvement in overall documentation after our study. Baseline data on pain scores requiring reassessment found that 43% were assessed appropriately according to criteria in comparison with 52% assessed during our study.

Patient/family survey

Overall, 86% of the patients reported that they understood how to use the pain scale, 83% in the control group and 88% in the intervention group. No significant difference was noted between the 2 groups. Patient survey data for “reports of pain treated promptly” found that overall 93% of patients reported prompt treatment, 91% for the control group, and 97% for the intervention group. Again, no significant difference was noted between the groups.

Nurse pain knowledge test

The difference between the pretest and the posttest was measured using several different statistical measures. The only test that was significant at the 0.05 level was between all pretests and posttests. Overall the posttest scores were slightly higher than the pretest scores. There was no statistically significant difference between control and intervention units. Test scores were also analyzed on the unit level. No significant difference was found between pretest and posttest or between the control and intervention units.

Limitations

The design of the study was problematic in that it was lengthy and complex for novice researchers. Data collection was performed at baseline and at 1- and 6-month intervals, taking 1 year to complete. Since 10 data collectors were used, interrater reliability may have been affected. The intervention educational session was not mandatory, so attendance of nurses varied. This may have affected overall results of study. We did not code the Nurses Pain Knowledge tests to track for individual returns, which may have limited generalizability of test results. Patient satisfaction surveys were not randomly sampled; thus, self-selection bias also may be present.

DISCUSSION

The implications of this study demonstrate that nurses have varied experiences in pain education and pain management. We hypothesized that teaching nurses about pain would make a difference in documentation of pain, patient satisfaction scores, and knowledge. Providing brief education about pain only touches the surface. We learned that one initial education session is not sufficient. Pain education needs to be ongoing to change practice and affect overall pain management.
Perhaps as healthcare providers we do not understand the complexity of the pain management process. Efforts to improve the quality of the pain management process must move beyond assessment and communication to implementation and evaluation of improvements in pain management that are safe, opportune, evidence-based, and interdisciplinary. Our hospital needs to recognize the complexity of pain assessment and management by providing ongoing pain education and continuous monitoring of documentation of pain assessment.

Despite the limitations and the lack of significance in the data analysis, individual learning may have occurred. The importance of pain management was brought to the forefront of many nursing units throughout our hospital. The nursing staff was responsive and receptive to the educational intervention, and we clarified many misconceptions about pain management. Ongoing pain management education is essential if we are going to change attitudes and knowledge and affect pain management practices. Studies that investigate methods to promote uniform approaches to pain management are worthwhile to pursue. Further studies could examine pain practices in a more narrow scope, perhaps using a simpler design and focusing on a specific population with 1 pain scale.

REFERENCES