

CONTINUING EDUCATION

A Comprehensive Approach to Improving Cancer Pain Management and Patient Satisfaction

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Purpose/Objectives: To report on the development and outcomes of a comprehensive program to improve cancer pain management and patient satisfaction.

Data Sources: Published research and guidelines, review articles, and patients' personal experiences.

Data Synthesis: A comprehensive cancer pain management program includes performance improvement, patient satisfaction, nursing education, and pain management rounds. This approach to pain can result in effective pain management, patients' reports of acceptable levels of pain, and an increase in patient satisfaction.

Conclusions: Semiweekly pain management rounds provided the opportunity for nurses to practice equianalgesic dosing and make recommendations for changes in pain management. Effective pain management plans can lead to an increase in scores that measure patient satisfaction.

Implications for Nursing: Nursing pain management education and subsequent use of pain management principles during and between pain management rounds can lead to effective pain management and satisfaction for patients with cancer. Research is needed to assess whether comprehensive programs can change pain management practices in other patient populations.

Cancer is diagnosed in more than 1,334,000 Americans annually (Jemal et al., 2003). Pain is experienced by 30%–50% of patients with cancer receiving treatment and by 70%–90% with advanced cancer (Portenoy, 1989). Estimates of pain in hospitalized patients with cancer have been reported to be as high as 90% (Brescia, Portenoy, Ryan, Krasnoff, & Gray, 1992; Jadlos, Kelman, Marra, & Lanoue, 1996; Oden, 1989). Although guidelines for the management of pain have been published, patients continue to experience pain despite these management regimens. Furthermore, a variety of studies of patient populations have confirmed that inadequate pain management exists (Bonica, Ventafridda, & Twycross, 1990; Brescia et al.; Jadlos et al.; McMillan & Tittle, 1995). A four-year study of 9,000 terminally ill patients in five teaching hospitals revealed that 50% of conscious patients who died in the hospital experienced moderate to severe pain at least half of the time (SUPPORT Principle Investigators, 1995).

The purpose of this article is to describe the development and evaluation of a comprehensive nursing pain management performance improvement program. An initial pain au-

Key Points . . .

- Pain continues to be prevalent among patients with cancer.
- Changes in nursing pain management practice begin with pain management education.
- Pain management rounds that incorporate pain practice principles can promote nursing advocacy for effective pain management.
- Patient satisfaction with pain management can improve when patients believe that their needs are being addressed.

Goal for CE Enrollees:

To further enhance nurses' knowledge regarding comprehensive pain management and patient satisfaction.

Objectives for CE Enrollees:

On completion of this CE, the participant will be able to

1. Describe a comprehensive nursing pain management performance improvement program.
2. Evaluate a comprehensive nursing pain management performance improvement program.
3. Describe nursing implications in pain management.

dit was conducted on a 19-bed inpatient medical oncology unit two months prior to the implementation of the performance improvement program. Data were collected using ongoing medical record audits and the Patient Satisfaction Pain Survey (see Figure 1). This survey was distributed to patients

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no pain 0	mild pain 1 2 3	moderate pain 4 5 6	severe pain 7 8 9	worst pain 10
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1. Using the pain scale above, please use a number to indicate the worst pain you had during your hospital stay.

2. What was the rating of your pain after you received pain medication?

3. Please choose the phrase that best describes your level of satisfaction with pain management.

☐ Very satisfied

☐ Satisfied

☐ Slightly satisfied

☐ Dissatisfied

☐ Very dissatisfied

4. When you asked for pain medication, did you feel that the nurse was quick in providing you with your pain medicine?

☐ Yes

☐ No

5. When you first arrived on the unit, did your nurses discuss with you the importance of your pain management?

☐ Yes

☐ No

6. When you first arrived on the unit, did the nurses tell you to be sure to let them know if you were having pain?

☐ Yes

☐ No

7. Using the 0–10 scale, what is an acceptable level of pain relief for you?

8. How has pain affected your quality of life?

9. This questionnaire was completed by

☐ Patient

☐ Family

☐ Staff

Thank you for taking the time to complete this survey. Our goal is to offer the best pain relief possible, and your help is appreciated.

Figure 1. Patient Satisfaction Pain Survey
Note. Survey courtesy of Newark Beth Israel Medical Center in New Jersey. Reprinted with permission.

upon discharge and returned that day. If a patient was unable to complete the survey but could answer the questions orally, the survey was completed by a family member or by the nursing staff.

The data collection was performed to gain an understanding of how well pain was being managed. In addition, the data served as a tool to gauge improvement after the plan was implemented.

The initial medical record audits revealed the following.

- All patients with cancer with pain had treatment plans. Seventy-five percent of them had acceptable relief (defined as a pain level less than 4 on a 0–10 pain scale), and 25% had unacceptable relief (defined as a pain level higher than 4).
- Only 33% of patients with unacceptable relief received changes to their pain treatment plans.
- All patients with unacceptable relief rated their worst pain during hospitalization at 8–10, and 40% of these patients had pain ratings of 8 after medication.
- Sixty percent of patients whose treatment plans were changed believed that they waited “a long time” to receive those changes.

Patient Satisfaction Pain Surveys revealed that no patients were very satisfied, 40% were satisfied, 40% were slightly

satisfied, and 20% were dissatisfied. No one was very dissatisfied with their pain management.

Medical center policy requires documentation of pain-intensity assessment using a 0–10 scale for all patients at least once a shift and before each pain intervention. Reassessment consists of using the same scale on a time frame based on the medication’s route and bioavailability. Review of nursing pain documentation indicated that pain-intensity assessments before pain interventions and reassessments after pain interventions were not performed consistently. In addition, nurses were not advocating consistently for changes in treatment plans when patients’ pain was unrelieved. Many nurses were informing patients that the time had not come yet for their medication.

Literature Review

Multiple studies in the 1980s and early 1990s examined knowledge, attitudes, and behaviors of nurses in relation to pain assessment and management (Dalton, 1989; Ferrell, McGuire, & Donovan, 1993; Fox, 1982; Rankin & Snider, 1984; Taylor, Skelton, & Butcher, 1984; Watt-Watson, 1987; Weis, Sriwatanakul, Alloza, Weintraub, & Lasagna, 1983). These studies indicated that nurses did not understand the magnitude of the problem of cancer pain management and were deficient in their knowledge of addiction potential, interactions, side effects, and dosing of opioids (Fife, Irick, & Painter, 1993; Fox; McCaffery & Ferrell, 1992; Ryan, Vortherms, & Ward, 1994; Watt-Watson). Nurses received inadequate information about the potential for addiction and respiratory depression and administered analgesics irregularly and at ineffective dosages (Carr, 1990; Closs, 1990; Hauck, 1986; Rankin & Snider).

Results of studies of nursing pain management education programs vary. Multiple studies of nursing education programs have indicated that one continuing education class often is not effective in increasing knowledge (Dalton et al., 1995; Ferrell et al., 1993; Hauck, 1986). However, another study demonstrated that a daylong cancer pain education workshop was as effective as hands-on experience in improving knowledge of and changing attitudes about cancer pain (Lasch, Wilkes, Lee, & Blanchard, 2000). Anecdotal reports have described feelings of empowerment and increased nurse-physician collaboration after pain education (Lin, Aikin, Fitzgerald, Mings, & Rigby, 1993). Another study revealed that six months after a pain management education program, nurses’ knowledge of the management of pain had increased, although the increase in documentation of pain-related data was small (Dalton et al.).

Additional studies of nursing education have suggested that interventions resulting in pain relief were missing, that dosing of medication was problematic, and that ongoing opportunities to implement newly acquired knowledge were needed. A commentary on one study suggested that nurses have been taught to assess and document the presence of pain but tend not to implement corrective measures for pain relief (Bookbinder et al., 1996; Miaskowski, Nichols, Brody, & Synold, 1996). Despite nursing pain management education in two Veterans Administration hospitals, patients reported moderate or higher levels of pain with no follow-up changes in treatment plans (McMillan, Tittle, Hagan, & Laughlin, 2000). Mean scores on application questions of the Boston Cancer

Pain Education Program decreased slightly during a six-month follow-up test (Lasch et al., 2000). Although a change was noted in knowledge and documentation of behavior in a program designed for nurses providing care to patients with cancer in a rural community, the authors suggested that future programs should emphasize analgesic dosing and calculation of equianalgesic doses (Dalton et al., 1995).

Role-model programs have provided information about cancer pain management and overcome barriers to effective pain management (Weissman & Dahl, 1994a, 1994b; Weissman, Dahl, & Beasley, 1993). These programs combined lectures on the diagnosis and treatment of cancer pain with case discussions that related attitudes and the application of knowledge. Significant improvements in knowledge and attitude were demonstrated when responses to the survey, administered before and after the workshop, were compared. Knowledge of and attitudes toward cancer pain management principles after a one-day role-model workshop improved and continued 4 and 12 months later (Janjan et al., 1996).

Few studies have related nursing pain education and patient outcomes. However, they have demonstrated that surgical patients had fewer pain complaints, lower pain intensity, and fewer hours of pain on postoperative days zero and one after nurses completed pain education. Patients with cancer had more pain-free periods, and surgical patients with colon and breast cancer had lower pain-intensity scores (Degner, Fujii, & Levitt, 1982; Fogelson, 1983; Fogelson, Lambert, & Emerick, 1987; Francke et al., 1997).

In 1990, the American Pain Society specified that patient satisfaction with pain management should be assessed. However, research findings conflict on this issue. Two studies have shown that patient satisfaction ratings correlate with quality health care (Cleary & McNeil, 1988; Donabedian, 1982). However, several studies that evaluated hospitalized patients' satisfaction with various aspects of pain management revealed that satisfaction with pain management did not indicate that patients were experiencing pain relief (Corizzo, Baker, & Henkelmann, 2000; Donovan, 1983; Lavies, Hart, Rounsefell, & Runciman, 1992; Miaskowski et al., 1996; Ward & Gordon, 1994). In one study, 70% of patients were satisfied with their pain management despite experiencing moderate to severe pain and waiting relatively long periods for pain management (Miaskowski et al.). In another study (Ward & Gordon), patients with high levels of pain were very satisfied with the pain management they received. Satisfaction was related to whether physicians and nurses communicated to patients that pain management had a high priority. Patients seemed to be satisfied if healthcare providers stated that they wanted to provide relief.

Other studies contradict these findings. In these studies, dissatisfaction was associated with how long patients waited for medications, the extent of relief obtained, and the amount of time taken to change medication for pain (Bookbinder et al., 1996). Corizzo et al. (2000) found that higher pain intensity and relief were related to lower satisfaction with current pain intensity. Patients had inadequate pain relief, little knowledge of how much pain to expect, and inaccurate information about how pain medication should be taken and the potential side effects of medication. Again, communication rather than effectiveness of pain management appeared to play a key role in patient satisfaction.

Personal expectations appear to influence patient satisfaction. When 200 postoperative patients were asked why they were satisfied if they still had pain, their responses were that pain after an operation was expected (Donovan, 1983). Research is needed to clarify the interrelation among expectations about pain, pain perception, and actual pain relief.

Studies have been conducted on knowledge, attitudes, and behaviors of nurses in relation to pain assessment and management. Other studies have examined pain education separately from patient outcomes and satisfaction. No studies have correlated nursing education, changes in treatment plans for pain management, and patient satisfaction.

Implementation of the Cancer Pain Performance Improvement Program

The Nursing Pain Education Program

The pain education program was designed to expand the nursing staff's knowledge, with the goal of improving pain management practice. The education program consisted of five half-hour sessions that were scheduled at least a month apart. All nurses on the unit were required to attend each session. Lecture, discussion, handouts, and audiovisual aids were used at each session. The topics and content follow.

- **Session I: Pain Assessment**
 - Pain descriptions and their relationship to somatic, visceral, and neuropathic pain
 - Types of pain-intensity scales and their appropriate use
 - Acute versus chronic pain
 - Cultural considerations
 - Cognitively impaired patients who are experiencing pain
 - Patient empowerment
- **Session II: Pharmacologic Management of Pain**
 - The World Health Organization analgesic ladder
 - Key principles: using the least invasive route and avoiding intramuscular injections
 - Medicating to prevent pain with long-acting and around-the-clock schedules
 - Types of nonopioid, opioid, and adjuvant medications and appropriate uses based on pain type
 - Management of side effects of analgesics
- **Session III: Dosage Conversion and Equianalgesic Dosing**

Three case studies were presented involving patients with varying pain types and the use of the three categories of analgesics. Each nurse practiced

 - Determining appropriate pain management based on characteristics of pain.
 - Converting dosages from one opioid to another.
 - Calculating long-acting and breakthrough doses.
- **Session IV: Nonpharmacologic and Procedural Pain Management**
 - Nonpharmacologic pain management modalities available to the patient population
 - Approaches to procedural pain
- **Session V: Pain in Special Populations**
 - Pain management in the elderly
 - Patients with chronic nonmalignant pain such as frequent sickle cell crisis, low back pain, and HIV or AIDS
 - Patients with a history of substance abuse

During each session, examples of past and present patients on the unit were used for discussion.

Pain Management Rounds With Outcome Documentation

To reinforce the content of the pain education, change pain management practice, and improve patient satisfaction, the nurses began pain management rounds. Initially, they were scheduled on Tuesdays during interdisciplinary discharge rounds. During rounds, nurses evaluated each patient's pain level and pain-frequency trends by reviewing pain documentation. For patients with pain, the team discussed the current pain regimen and made changes when appropriate. Nurses were mentored by an advanced practice nurse (APN) or the nursing director about ways to recommend changes in approach and dosage. Because physicians participate in rounds, orders could be revised immediately. Aspects of the pain management rounds outcomes (see Figure 2) appropriate to each patient then were reviewed to determine successful interventions and facilitate documentation. Nurses followed up with patient education and pain documentation during their shifts.

Later, a second set of pain rounds was implemented every Friday and included the nurse caring for the patient, with either an APN or the nursing director. The format was the same as for the Tuesday rounds, except the entire healthcare team did not participate. After rounds, nurses followed up by contacting physicians to discuss recommended changes in pain management.

For patients requiring modification of their pain regimens outside of scheduled rounds, physicians were notified promptly. In addition, an APN or the nursing director was available for consultation on a 24-hour basis. The goal was to ensure that a pain level of less than 4 would be met within an hour.

Outcomes

During the implementation of the pain education and the initiation of the pain rounds, performance improvement data and patient pain surveys continued to be collected. One hundred percent of patients continued to have pain treatment plans. An improvement in pain relief was noted within the first month of education and rounds (see Figure 3). Overall on

1. Was pain assessment documented at least once a shift?
 - Before medication was given?
 - At time of evaluation of medication effectiveness?
 - Before painful procedure?
 - After painful procedure?
2. If pain level was higher than 4, was the physician called for a change in treatment plan?
3. Was a new treatment plan initiated?
4. Was the new plan effective?
5. Was the patient's comfort goal documented?
6. Was the patient's comfort goal met?
7. Is a summary of the effectiveness of pain treatment in the progress note?
8. Has patient education on pain management been documented?
9. Did pain management education include (as applicable)
 - Name of medication, dosage, how and when to take the medication, and side effects?
 - Differences among addiction, tolerance, and dependence?
 - Nonpharmacologic pain management techniques?

Figure 2. Pain Management Rounds Outcomes Guidelines

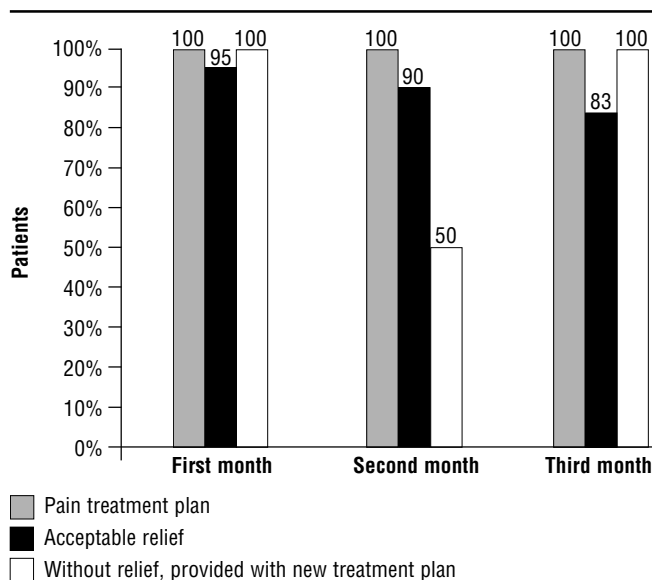


Figure 3. Performance Improvement Pain Audit After Nursing Education and Rounds

the unit, 95% (an increase of 20% of patients) reported acceptable pain relief with their initial treatment plans. One hundred percent (an increase of 70% of patients who initially did not have acceptable relief) received subsequent changes in their treatment plans that relieved their pain. During rounds, patients reported that their pain was reduced more quickly than previously. In addition, these patients also reported having less frequent bouts of severe pain. During the second month of the pain program, a 5% decrease occurred in patients who had acceptable relief initially, and a 50% drop occurred in the implementation of changes to treatment plans. This decline in performance improvement may have been related directly to the percentage of staff on vacation when coverage for the unit required the use of other hospital staff nurses not familiar with the pain initiatives. Subsequent months of data collection revealed an increase in patient satisfaction, and overall pain management continued to show that patients' pain was being addressed efficiently.

After the implementation of the performance improvement plan on the oncology unit, the program was initiated throughout the hospital, enabling staff who float to the oncology unit to provide the same level of pain interventions.

The improvement in pain management can be attributed to two distinct changes in practice. First, unrelieved pain was being addressed immediately; changes in treatment plans occurred within the hour. Second, reassessment was performed consistently according to policy, and breakthrough doses were provided in a timely manner.

Since the implementation of the performance improvement program, 70% of patients have reported being very satisfied with nurses' treatment of their pain. Prior to the initiation of this program, no patients rated themselves as very satisfied. This included patients with self-reported pain rated as severe (7–9) (see Figure 4). These findings correlate with other studies cited in the literature. This improvement most likely is a result of patients' perceptions of improvement in nurses' attitudes toward managing their pain. Nurses reported that, as their knowledge increased, they felt more comfortable educating patients

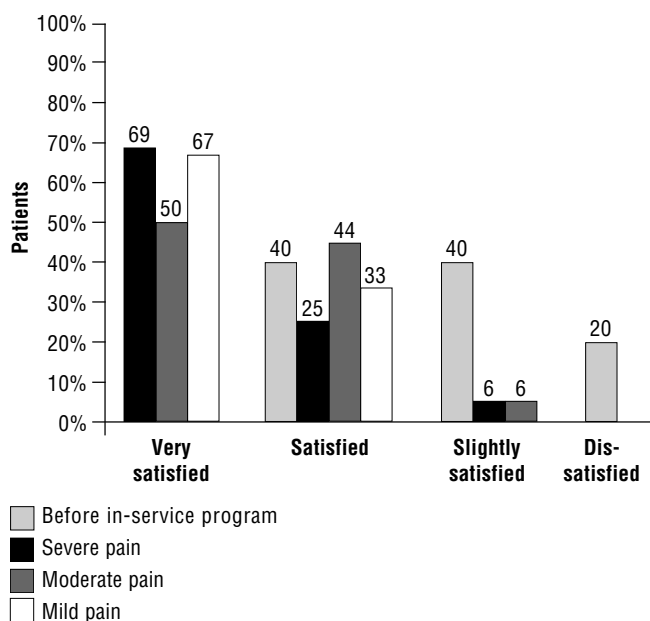


Figure 4. Level of Patient Satisfaction With Pain Management

about their pain and reinforcing patients' participation in pain management. In addition, nurses became more assertive in ensuring that patients' reports of unrelieved pain were followed up by physicians. Performance improvement data collection and patient pain surveys continue to be collected and assessed on a monthly basis.

Implications for Nursing

Pain assessment, often referred to as the fifth vital sign, is an integral component of nursing assessment. Pain characteristics, including onset, intensity, location, duration, aggravating and relieving factors, and previous treatment, must be assessed to complete the pictures of the types of pain that patients are experiencing. Pain intensity, using a pain scale

appropriate for the patients, must be assessed at least once per 8–12 hour shift if pain levels have been 0, more frequently if levels have been above that, and before and after each pain intervention. However, pain assessment is only the first component of nursing responsibility in the management of pain. To achieve and maintain pain levels in the satisfactory range (0–3), appropriate interventions and subsequent evaluations of results sometimes must be done multiple times in a 24-hour period.

Changes in pain practice begin with education. Education not only includes theory but incorporates examples of actual patients and case studies so that hands-on learning can occur. It also explores previously accepted attitudes and misconceptions, with a focus on re-education, so that knowledge is based on currently accepted practice.

Studies have found that pain education may change attitudes and beliefs but, by itself, may not be enough to change practice. Nurses go back to healthcare teams that may be resistant to change or may not have had the same level of education. Rounds with a mentor who is adept with pain management provide a safe environment to evaluate each patient's pain management, discuss changes that may improve outcomes, verify dosage calculation, and encourage assertiveness when dealing with those resistant to change. Ongoing pain auditing can evaluate outcomes of the pain management program and identify areas that need improvement.

Patient satisfaction is a top priority for many healthcare facilities, in part because of competition for patients, particularly when the same services are offered at multiple local facilities. Studies support that communication with patients about their pain management plans enhances patient satisfaction. Communicating with patients about their comfort goals, tailoring pain management to reach these goals, and educating patients regarding treatment plans enhance patient satisfaction. Results of satisfaction surveys relating to pain show trends toward meeting patients' perceived needs and outline areas where improvement is needed.

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For more information . . .

- Cancer-Pain.org
www.cancer-pain.org
- NOAH Cancer Pain
www.noah-health.org/english/illness/cancer/cancpain.html
- Pain Clinical Trials: Improving Cancer Pain Management
www.clinicaltrials.gov

Links can be found using ONS Online at www.ons.org.

The continuing education examination and test form for the preceding article appear on the following pages.