



# Patient assessment of postoperative pain management – Orthopaedic patients compared to other surgical patients

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## KEYWORDS

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**Summary** We used a 14-item patient questionnaire, Strategic and Clinical Quality Indicators in Postoperative Pain Management, to describe how orthopaedic patients assessed the quality of care they received. The patients highest and lowest assessments were compared to assessments by other groups of surgical patients as reported in studies being published. Our study included 300 inpatients from four different orthopaedic wards in two county councils in Sweden. Patients answered a questionnaire on the day of discharge. The response rate was 74%, and 44% of the respondents were male. Elective surgery was the main reason for admission, and the mean length of stay was 7.3 days. One of the items rated highest was that pain relief was given quickly when requested. A literature review showed that this item also received a high rating in other studies using the same patient questionnaire. The item rated lowest concerned the regular use of a pain assessment instrument, which also received a low rating from patient groups other than the orthopaedics in this study. In conclusion, we found that orthopaedic patients and other groups of surgical patients gave similar assessments concerning the highest and lowest assessments of postoperative pain management. Nevertheless, further improvement is needed.

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## Introduction

Continuous quality improvement and regular measurement of indicators for interpretation and discussion are important and should already be routine in hospitals (SOSFS, 2005). Postoperative pain management is an essential care component in surgical

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wards. As such, it should receive particular attention when identifying potential areas for improvement. Several significant goals have been established for postoperative pain management (IASP, 1992), and it must be regarded as unethical to let patients suffer from pain without adequate efforts to provide high-quality treatment. Rawal and Berggren (1994) reported that the tools necessary to manage pain are usually available, but new technologies must be considered and discussed along with the patients' perspective (Carr and Thomas, 1997). A study by Dihle et al. (2006) identified a gap between words and actions in postoperative pain management by observing what nurses did and then interviewing these nurses to ask how they helped patients manage pain. Hence, it is also important to identify the patients' experiences and their opinions concerning the quality of care.

Strategic and Clinical Quality Indicators in Postoperative Pain Management (SCQIPP) is a 14-item patient questionnaire developed to measure the quality of postoperative pain management (Idvall et al., 2002b). Development of this instrument started with a qualitative approach using interviews (Idvall and Rooke, 1998) and a literature review (Idvall et al., 1999) that led to the items tested for content validity (Idvall et al., 2001). Content validity and psychometric properties gave initial support for the instrument with a Cronbach's alpha of 0.84 and inter-item correlation of 0.32 (Idvall et al., 2002a).

The quality of postoperative pain management measured with the SCQIPP instrument has been reported on an item level for mixed surgical patients and for thoracic patients (Idvall et al., 2002b, 2005; Gunningberg and Idvall, 2007). However, the present study used this instrument: (1) to describe orthopaedic patients' assessment of the quality of care in postoperative pain management and (2) to compare the highest and lowest assessments with other patient groups in similar studies being published.

## Methods

### Sample

The study included 300 inpatients from four orthopaedic wards in two county councils in Sweden. Inclusion criteria were: at least 18 years of age, able to read and understand the questions, oriented to person and place, and a minimum postsurgical stay of 48 h in the ward. Data were collected as a convenience sample during 2005. We found no systematic

errors, e.g. sampling confined to specific days or surgeons.

### SCQIPP

To measure the quality of postoperative pain management, we used a somewhat revised version of the SCQIPP patient questionnaire developed by Idvall et al. (2002a,b). Revisions included:

- Items were slightly refined semantically.
- Items that referred to "the nurses..." were revised to "the staff"...
- Items were scored on a verbal five-point scale: "Do you: (1) totally disagree, (2) kind of disagree, (3) neither agree or disagree, (4) kind of agree, or (5) totally agree" instead of the earlier five-point scale using only the verbal endpoints, strongly disagree (1) and strongly agree (5).

These changes were made as a part of an improvement process to further refine the SCQIPP instrument. The semantic changes did not change the meaning of the items. We changed "nurses" to "staff" because some patients might find it difficult to distinguish between different categories of staff, and it is the patient's overall experience of quality that matters. Scoring was revised to make it easier for patients by using verbal expressions instead of numbers for rating. The items are presented in Table 1 (revised version) and Table 2 (original version). Cronbach's alpha in the present study is 0.88.

### Procedure

Specific data collectors recruited patients at the four orthopaedic wards. They ensured that patients were informed both verbally and in writing about the study, and gave patients the option to decline participation. A questionnaire was given to the patient at the time of discharge. Participants were given a prepaid, addressed envelope to return the questionnaire, or they could leave the questionnaire in a box located in the wards. The study was approved by the heads of the respective orthopaedic departments. Formal approval by the ethics committee was not required according to national directives by Swedish law (SFS, 2003).

### Literature review

Using PubMed, a literature review was undertaken to compare the quality of postoperative pain

**Table 1** Percentage of patients scoring “totally agree” (% (*n*)) and patients’ mean (SD) score (five-point scale, 1–5) of each statement in SCQIPP (*n* = 221)

Item	Totally agree-assessment, % ( <i>n</i> )	Mean (SD)
Before my operation I was told about the type of pain treatment I would be offered after surgery	55 (121)	4.2 (1.3)
I was given an opportunity to influence how I wanted my pain to be treated	48 (107)	4.3 (0.9)
I received help in finding a comfortable position in bed to avoid pain	50 (111)	4.3 (0.9)
There was peace and quiet in my room at night	51 (112)	4.2 (1.0)
I was given pain medication daily, even if I did not always ask for it	71 (157)	4.6 (0.7)
The staff asked me every day about the pain I had when I breathed deeply, sat up, or moved around	34 (76)	3.6 (1.4)
To determine my level of pain, several times every day a member of staff asked me to pick a number between 1 and 10, or make a mark on a straight line	21 (47)	2.9 (1.6)
I was given help with pain treatment until I was satisfied with the effects of pain relief	42 (93)	4.1 (1.1)
My bed was in a pleasant room	60 (133)	4.4 (0.8)
When I asked for pain relief someone was quick to respond	65 (143)	4.6 (0.7)
When staff came on duty, they knew how much pain I had been having and the pain treatment I had received	33 (73)	3.8 (1.2)
The staff were knowledgeable about how to relieve my pain	60 (133)	4.5 (0.7)
The staff believed me when I told them about my pain	64 (142)	4.5 (0.8)
The staff cooperated well in treating my pain	67 (148)	4.6 (0.8)

management with findings from other similar studies and patient groups that have used the SCQIPP instrument.

### Data analysis

Data were analysed using Statistica, 1999 version. Descriptive statistics are presented as arithmetic means with standard deviation and frequencies. To compare the highest and lowest assessments in different studies the high limit was set as a mean score of >4.5 and the low limit was <4.0 (scale range 1–5).

## Results

### Assessment by orthopaedic patients

The response rate was 74% (*n* = 221), and 44% (*n* = 95) of the respondents were male. Mean age was 65.0 years (12.0) for males and 65.8 years (10.2) for females. Elective surgery was the primary reason for admission (83%), and the length of stay had a mean value of 7.3 (4.8) days. From the sample of 221 patients, 178 questionnaires were fully completed, and missing data in 43 questionnaires for each item ranged between 4 and 19.

The mean scores of the individual SCQIPP items (*n* = 14) varied between 2.9 and 4.6 (scale range 1–5, higher score better quality of care). The percentage of patients who scored “totally agree” (5 on the five-point verbal scale) on the items varied from 21% (*n* = 47) to 67% (*n* = 148). Three items had high mean scores (>4.5), e.g. “The staff cooperated well in treating my pain” and two items had low mean scores (<4.0), e.g. “When staff came on duty, they knew how much pain I had been having and the pain treatment I had received” (Table 1).

### High and low assessments in different studies and patient groups

The literature review revealed three published papers concerning four samples (Idvall et al., 2002b, 2005; Gunningberg and Idvall, 2007) using the SCQIPP instrument to assess the quality of care in postoperative pain management. In all samples including the present study (*n* = 5), the item “to determine my level of pain, a member of the staff asked me to pick a number between 0 and 10 (or make a mark on a straight line) at least every morning, afternoon, and evening” had a mean score <4.0 (low assessment). The items that were scored high (>4.5) in four of the five samples were “there have been enough nurses on duty for someone to respond quickly to my request for pain relief”

**Table 2** Description of papers published with five samples of patients using SCQIPP (part 1) and items assessed with mean score >4.5 (H) and <4.0 (L) on five-point scale (higher score means higher quality of care) (part 2)

	Idvall et al., 2002, 2005 N=198	Idvall et al., 2005 N=74	Gunningberg & Idvall, 2007:1 N=61	Gunningberg & Idvall, 2007:2 N=60	Idvall & Berg, present N=221
<b>PART 1</b>					
Female, %	61	76	51	30	55
Mean age (SD), years	62 (15)	57 (17)	60 (16)	64 (10)	66 (11)
Surgical procedures	General, orthopaedic, gynaecology	General, orthopaedic, gynaecology	General	Thoracic	Orthopaedic
Day of answering the SCQIPP	2 <sup>nd</sup> postop	2 <sup>nd</sup> postop	2 <sup>nd</sup> postop	3rd postop	discharge
Number of items with a mean score > 4.5, n	3	2	4	5	3
Number of items with a mean score < 4.0, n	3	3	1	1	2
<b>PART 2</b>					
• Before my operation I was told about the type of pain treatment I would be offered after surgery					
• After my operation I talked with a nurse about how I wanted my pain to be treated	L	L			
• I received support or help in finding a comfortable position in bed to help avoid pain				H	
• I was given the opportunity for peace and quiet so I could sleep at night					H
• Even if I did not always ask for it, I was given pain medication					H
• The staff asked me about the pain I had when I breathed deeply, sat up, or moved around	L	L		H	L
• To determine my level of pain, a member of the staff asked me to pick a number between 1 and 10 (or make a mark on a straight line) at least once every morning, afternoon, and evening	L	L	L	L	L
• The nurses helped me with pain treatment until I was satisfied with the effects of pain relief					
• I have a pleasant room			H	H	
• There have been enough nurses on duty for someone to respond quickly to my request for pain relief	H	H		H	H
• When nurses come on duty, they know everything about how much pain I have had and the pain treatment I have received					L
• The nurses are knowledgeable about how to relieve my pain	H		H		
• The nurses believe me when I tell them about my pain	H	H	H	H	
• The nurses and doctors have cooperated in treating my pain			H		H

and “the nurses believe me when I tell them about my pain”. Table 2 presents the data from the different studies and patient groups.

## Discussion

According to the Joint Commission (Katz and Green, 1992, p. 107), a threshold is “a level or point at which the results of data collection in monitoring and evaluation trigger intensive evaluation of a particular important aspect of care to determine whether an actual problem or opportunity for improvement exists”. But, what score or threshold constitutes high quality of care? For each item in the SCQIPP instrument, a mean score that exceeds 4.5 (scale range 1–5) has been suggested as the level required for high quality of care (Idvall et al., 2002b). The items have been validated as essential for the quality of care, realistic to carry out, and possible for nurses to influence management (Idvall et al., 1999, 2001), and therefore a high threshold has been set. In this study, low quality of care was set at a mean score <4.0 to facilitate comparison of different patient outcomes in other studies. Clearly, it is important to improve everything that is not assessed as high quality.

Nevertheless, high quality of postoperative pain management for orthopaedic patients was achieved on important patient experiences. For example, patients reported that they received pain medication regularly and got pain medication quickly when they requested it. Important areas for improvement were also addressed and need to be discussed in the wards. For example, to assess pain intensity when patients move or breathe and to use pain assessment instruments more frequently. Good routines need to be developed and established, and further follow-up evaluations are needed. It is important to measure the quality of care so staff can receive feedback on both good and deficient performance that can be monitored over time.

Interestingly, in all studies found (including the present study), the use of pain assessment instruments received a mean score <4.0, indicating low quality of care. Obviously, this has been a low priority for nurses in pain management over the years, regardless of patient group. The study by Dihle et al. (2006) found unsystematic and insufficient evaluation of pain. They observed many situations where assessments were not performed, although the nurses in the same study said that they routinely evaluated pain by asking. A gap ex-

isted between what was observed and what the nurses reported. Another study concluded that nurses generally held a somewhat positive attitude about the use of pain management tools (Layman Young et al., 2006). Perhaps this suggests that nurses are aware that the task is important, but for some reason they do not act as they know they should.

A positive finding in several of the studies was that patients felt that the staff believed them and responded quickly to their requests for pain relief. The nurses encouraged patients to “ring the bell if still in pain” (Dihle et al., 2006). Clearly, this is important and appreciated by patients, but from a professional standpoint this must not replace routines involving frequent nurse evaluations based on pain assessment instruments.

Postoperative pain management has been a focus of quality improvement for many years, but many studies included in a literature review report that pain care continues to be inconsistent and inadequate (Gordon et al., 2002). The authors recommended six quality indicators for hospital-based pain management that are in line with several items in the SCQIPP instrument. For example, pain intensity should be documented at frequent intervals with an assessment instrument, and pain should be treated by regularly administering analgesics. Such findings appear time and again in the literature.

What should be done? We believe it is essential for leaders at different organisational levels to highlight and take responsibility for this issue. How should evidence based knowledge be implemented and evaluated? A literature review by Brown and McCormack (2005) identified important factors on using evidence in practice as regards postoperative pain management, such as the need for a systematic approach to implement research.

The studies that were compared according to high and low assessments had somewhat different designs. The day that patients were asked to fill in the questionnaire varied, but the items in the SCQIPP instrument should be valid in day two, day three, or at discharge. The assessments concern structures and processes and not explicit outcomes such as pain intensity scores or complications, which are much more sensitive to the point in time when they are measured. This is a weakness in the instrument, but general satisfaction questions and pain intensity scores can be used to complement the questionnaire in quality improvement.

In the present study, items in the SCQIPP instrument were revised for orthopaedic patients, which must be considered in comparisons with other stud-

ies. These minor revisions were not intended to change the meaning of the questions, and the findings revealed no systematic differences that could be attributed to the revisions.

## Conclusion and clinical implication

The conclusion of this study is that postoperative pain management still needs to be improved, a finding that is consistent with other similar studies and patient groups found. More focus should be directed at how evidence based knowledge can be implemented and evaluated for feedback purposes. This is a matter for all healthcare professionals, but also for leaders at all levels. The common goal for all these efforts should be high quality of care for patients in postoperative pain.

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