

# Anesthetists and Surgeons Predict Postoperative Pain

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**Purpose:** Nurses, surgeons and anesthetists are responsible for the management of postoperative pain. This study aimed to investigate surgeons', surgical residents', anesthesiologists', and anesthetic residents' predictions of patients' postoperative pain and satisfaction with pain management, compared to patients' postoperative ratings.

**Design:** The bias and limits of agreement between physician and patient ratings of postoperative pain were compared.

**Methods:** Doctors and patients completed a pain questionnaire (Numeric Rating Scale 11-point) regarding patients' overall pain, worst pain, and dissatisfaction with pain management during the first three days postoperatively.

**Findings:** All doctors overestimated the degree of pain. Possible reasons include the efforts of the postoperative multidisciplinary team. Surgeons were the most accurate regarding patients' worst pain. The limits of agreement for doctor and patient ratings were very wide.

**Conclusions:** Postoperative pain management is better than predicted.

**Keywords:** postoperative pain, predict, nurses, anaesthetists, surgeons.

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**SURGICAL PATIENTS' EXPERIENCE** varying degrees of acute postoperative pain, as a direct result from the surgical procedure and/or exacerbated by preexisting conditions such as chronic pain<sup>1</sup> and anxiety.<sup>2</sup> Although pain is an expected outcome of surgery, it is often poorly managed.<sup>1,3-7</sup> Severe postoperative pain is common after surgery, occurring in between 20% and 40% of patients.<sup>7-9</sup> Inadequate pain management can have considerable detrimental physiologic effects, causing an increase in blood pressure, respiratory rate, and heart rate in addition to increased oxygen consumption, a weakened immune response, and reduction in gastric motility.<sup>10</sup> Thus, severe pain is associated with increased morbidity and mortality, delayed postoperative ambulation, increased hospital length of stay and cost of care, in addition to decreased patient satisfaction and the development of chronic postoperative pain.<sup>7-9,11,12</sup>

Predicting the extent of individual acute postoperative pain remains difficult. Several studies have shown possible predictors of acute postoperative pain. The most important predictor of postoperative pain is preoperative pain.<sup>13</sup> Other predictors include anticipated postoperative pain by the clinician, high preoperative anticipated pain by the patient, younger age, type of surgery, and fear of short-term consequences of the operation.<sup>13,14</sup> Other studies have shown factors, including depression, stress, substance abuse, previous surgical experience, state anxiety, specific anxieties, and neuroticism as predictors of postoperative pain.<sup>2,15-17</sup> Studies of orthopaedic surgery have found a significant correlation between independently completed patient and surgical assessments on postoperative pain, with respect to hip, knee, and shoulder arthroplasty procedures.<sup>18-20</sup> In these studies, the surgical postoperative pain prediction was made after a postoperative clinic appointment, after discussion with the patient. There are no known studies investigating the immediate postoperative pain predictions of surgeons and anesthesiologists without them first consulting the patient postoperatively.

## Design

This study aimed to estimate the bias and limits of agreement (LOAs) between physician and patient ratings of postoperative pain and compare the agreement of predictions of pain by different types of physicians: surgeons, surgical residents, anesthesiologists, and anesthetic residents with patient ratings of experienced pain. Secondary aims were to explore if patient-rated pain differed by different types of surgery.

## Methods

Ethical approval was obtained from the University of Otago Human Ethics Committee. A single research student was based in the operating theaters attached to the anesthetic team. As part of the preoperative consent form, patients were asked if they would allow the student researcher into the operating theater.

This study examined postoperative pain as a summer student project during 12 weeks in early 2014. The setting was 474-bed tertiary teaching hospital in Wellington, New Zealand. Patients

were recruited based on student availability, and patient selection was not randomized in any way. Patient participants rated the severity of pain and dissatisfaction using the 11-point Numeric Rating Scale (NRS-11) instrument, shown in [Figure 1](#). This has an NRS-11 with 0 representing no pain or completely satisfied and 10 being the worst pain imaginable or completely dissatisfied. The NRS-11 has been shown to be useful in the assessment of pain intensity in most settings and is the preferred pain intensity assessment by most patients in many different institutions.<sup>21,22</sup> The minimum clinically important difference for this instrument depends on the clinical setting, but is between one and two for overall pain.<sup>23-25</sup>

Patient participants were eligible for recruitment if they were 18 years or older, with no life-threatening or unstable conditions, no language barrier, cognitively intact, and undergoing elective surgery. Orthopaedic, gynecologic, and general surgical lists were targeted, with the summer student attaching herself to an entire list for the duration and thus surveying the surgical and anesthetic teams of consenting patients. In general, anesthesiologists and anesthetic residents completed the pain rating scores toward the end of each individual operation as at this time they could use important details, such as whether local anesthetic infiltrates were to be used. Surgeons and surgical residents completed the pain rating scores after the surgery was completed. For about 15 individual patients, the anesthetic and surgical physicians involved were asked to complete the rating forms for all the patients at the end of the operating list.

Patients were asked to rate the pain felt during the first 3 days after surgery either in the ward where they received postoperative care or by telephone within 3 weeks of discharge from hospital. The instrument was completed with the assistance of the student researcher.

Physician participants were treating physicians for each patient participant who was interviewed by the student researcher. Physician participants were asked to predict the pain of the patient participant they were caring for using the same instrument used by the patient participant. Physician participants took part if they had been

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