

## Patient Satisfaction Assessment Scales in Postoperative Anesthetic Recovery

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### Abstract

Several scales have been used to evaluate anesthetic satisfaction. Among them: the Iowa Scale, the Royse Scale, just to name a few.

The objective of this review article was to describe two different evaluation scales of patient satisfaction in the postoperative anesthetic recovery.

The Iowa scale is one of the most often-used tools to evaluate patient satisfaction. This is a written questionnaire, self-administered and completed by patients prior to discharge. On the other hand, some other scales consist on a rigorous protocol with a psychometric questionnaire to evaluate. Post-operative Quality Recovery Scale (QoR) is a tool for evaluating recovery that objectively measures patient recovery over time in multiple domains (physiological, nociceptive, emotive, cognitive and activities of daily living) compared to baseline values acquired prior to surgery. Quality of care scale evaluates anesthetic satisfaction according to the results.

Evaluating satisfaction of the post-anesthetic recovery is essential to provide better perioperative results. Applying quality scales related to the satisfaction of patients may help to identify the best current practice in anesthetics.

**Keywords:** Patient Satisfaction Scale; Iowa Scale; Postoperative Quality of Recovery Scale Anesthesia

### Abbreviations

ISAS: Iowa Scale with Anesthesia Scale; QoR: Postoperative Quality of Recovery Scale; QoR-15: Postoperative Quality of Recovery Scale (15-item questionnaire); QoR-40: Postoperative Quality of Recovery Scale (40-item questionnaire); VAS: Visual Analogue Scale

### Introduction

Quality of care is generally assessed on the basis of results and currently has well-defined standards of morbidity and mortality [1-3].

Iowa Scale with Anesthesia Scale (ISAS) and Postoperative Quality of Recovery Scale (QoR), are the most used scores to evaluate patient satisfaction after any anesthetic procedure, as an important parameter for quality control and continuous improvement in hospital care [4-7] though QoR is possibly more objective in this evaluation.

We agree with the approach taken by Barnett, *et al.* [5], who has underline that satisfaction with anesthesia is currently used as an outcome measure in clinical trials, and patient satisfaction is considered to be an integral part of service quality. This approach is also required to fulfill performance improvement and revalidation agendas for healthcare professionals. However, clinical experience tells us that appropriately developed or validated instruments are not widely used in any of these settings [6-8].

The objective of this article is to give an opinion about two different evaluation scales of patient satisfaction in the postoperative anesthetic recovery.

### Discussion

The assistance process is better appreciated from the patient perspective through satisfaction surveys. This approach complements the classic one based on results, and, though less technical, points out different subjective elements of the medical attention.

In the post-anesthetic care unit, the satisfaction for the anesthetic treatment is evaluated by some scales:

**Iowa Scale with Anesthesia Scale (ISAS):** Dexter, *et al.* [3], reported that the ISAS is a questionnaire that measures patient satisfaction with monitored anesthesia care. The completion the all items take a few minutes. The ISAS measures satisfaction with the anesthetic, also assessment of satisfaction with the perioperative period in patients undergoing general anesthesia.

Although Barnett, *et al.* [5], recommend its application only for research and quality improvements studies, some investigators use it in clinical settings for the evaluation of satisfaction after anesthetic procedures. They found that there are few appropriately developed and validated questionnaires available. The authors conducted a systematic review to identify all tools used to measure patient satisfaction with anesthesia, which have undergone a psychometric development and validation process, appraised the quality of these processes, and made recommendations of tools that may be suitable for use in different clinical and academic settings.

Vargo, *et al.* [6], used ISAS in patients randomized to sedation regimens for colonoscopy. Kennedy, *et al.* [7], developed an investigation with the main purpose of evaluating the relationship between patient satisfaction and favorable outcomes the cognitive function related to anesthetic recovery after surgery procedures. Jiménez García [8], valided a Spanish version of ISAS in ophthalmology.

**Post-operative Quality Recovery Scale (QoR):** Myles and colleagues [4,9], developed a psychometric test of a quality of recovery score after general anesthesia and surgery in adults (1999). They draw up a 61-item questionnaire that asked individuals (patients and relatives, medical and nursing staff; total (n = 136) to rate various postoperative items describing features a patient may experience post-operatively. The most highly ranked items were included in a final nine-point index score, which we called the "QoR Score." There was a significant difference between the groups of patients recovering from major and minor surgery ( $p < 0.001$ ). This study demonstrated that the QoR Score has good validity, reliability, and clinical acceptability in patients undergoing many types of surgery, and was preceded by a previous research developed in 1997.

Later (2000), they attempted to develop a valid, reliable and responsive measure of quality of recovery after anaesthesia and surgery. The studied 160 patients and asked them to rate postoperative recovery using three methods: a 100-mm visual analogue scale, a nine-item questionnaire and a 50-item questionnaire. They were repeated later on the same day. From these results, we developed a 40-item questionnaire as a measure of quality of recovery (QoR-40; maximum score 200). They found good convergent validity between QoR-40 and visual analogue scale (VAS) and concluded that the QoR-40 is a good objective measure of quality of recovery after anaesthesia and surgery. It would be a useful end-point in perioperative clinical studies [10].

Soon after [11], the same authors measured the validity and reliability of QoR score in a large number of patients recovering from a diverse range of surgical procedures. They published a report of more than 10,811 patients applying the QoR score. The level of satisfaction of patient was high (96.8%); 246 (2.3%) patients were 'somewhat dissatisfied' and 97 (0.9%) were 'dissatisfied' with their anesthetic

care. After adjustment for patient and surgical factors, there was a strong relation between patient dissatisfaction: intraoperative with awareness, moderate or severe postoperative pain, severe nausea and vomiting and any other postoperative complications. They conclude that several factors associated with dissatisfaction may be preventable or better treated.

Rando., *et al.* [1], evaluated the quality and satisfaction of post-anesthetic recovery applying QoR of patients operated in the Clinics Hospital, in Montevideo, Uruguay and according to the results leaves the subjective experience of the patient, in anesthetic recovery area.

More recently, Stark., *et al.* [11], developed a new tool: QoR-15 after anesthesia as an important measure of the early postoperative health status of patients. The aim was to develop a short-form postoperative QoR score, and tested its validity, reliability, responsiveness, and clinical acceptability and feasibility. Finally, they concluded that the QoR-15 provides a valid, extensive, and yet efficient evaluation of postoperative QoR.

Royse., *et al.* [13], evaluated viability and validation using the QoR questionnaires. These authors reported that 95.8% of the patients were “completely satisfied” or “satisfied” after three days of having undergone a surgical procedure. Of 701 patients, 573 completed the satisfaction question on day 3. Satisfaction was rated by a single five-point rating question. Patients were divided into two groups: 477 (83%) were completely satisfied and 96 (17%) were not completely satisfied. Recovery was defined as return to baseline values or better for all questions within each domain. They evidenced that incomplete satisfaction was predicted by persistent pain or nausea at day 3 ( $P < 0.01$ ) and incomplete satisfaction at day 1 ( $p < 0.01$ ). Paradoxically, incomplete satisfaction was less likely to occur if pain or nausea was present 15 min after surgery ( $p < 0.05$ ) or at day 1 ( $p = 0.03$ ). Incomplete recovery in the other domains did not influence satisfaction. They concluded that the recovery domains measured using the QoR, only nociception (pain or nausea) contributed to incomplete satisfaction following anaesthesia and surgery.

Chazapis and co-workers [14], studied the QoR after day case orthopedic surgery. They concluded that the QoR-15 is a clinically acceptable and feasible patient-centred outcome measure after day case surgery. The score demonstrated good validity, reliability and responsiveness in ambulatory surgery.

Gornall., *et al.* [15], published that several rating scales have been developed to measure quality of recovery after surgery and anaesthesia, but the most extensively used is the QoR-40, (40-item questionnaire) that provides a global score and subscores across five dimensions: patient support, comfort, emotions, physical independence, and pain. They found that the QoR-40 is a widely used and extensively validated measure of quality of recovery. The QoR-40 is a suitable measure of postoperative quality of recovery in a range of clinical and research situations.

Royse., *et al.* [13], evaluated the satisfaction of care through results (morbidity and mortality). In this study, the subjective aspect of anesthesia recovery was analyzed using a visual analogue satisfaction scale. They compared the results with the QoR in 166 patients interviewed 24 hours after discharge from the recovery room. Each question was assigned a numerical value and a comprehensive quality survey was constructed. The questions were grouped according to five aspects of the recovery: satisfaction, emotions, physical independence, psychological support and pain. The aspects that obtained higher scores were psychological support and pain; and the lowest were physical independence and satisfaction. Emotions obtained an intermediate value. The patient’s experience assessed through global satisfaction and QoR is a quantitative measure of the quality of postoperative recovery and allows us to follow the process of care, identifying the aspects that are most affected by surgery and anesthesia in the hospital population.

Recently, Myles., *et al.* [16], studied the safety and effectiveness of modern anesthesia has led to a stronger emphasis on patient-centered out-come measures. These outcome measures assess quality of life, patient satisfaction, disability-free survival, and aspects of the postoperative experience that encompass well-being, physical functioning, and comfort. The authors enrolled 204 patients at the first postoperative visit, 199 were available for a second interview, and further 24 patients were available at the third interview. The QoR

scores improved significantly between the first two interviews. The authors enrolled a sequential, unselected cohort of patients recovering from surgery and used three QoR scales (the 9-item QoR score, the 15-item QoR-15, and the 40-item QoR-40) to quantify a patient's recovery after surgery and anesthesia. They compared changes in patient QoR scores with a global rating of change questionnaire using an anchor-based method and three distribution-based methods. The authors then averaged the change estimates to determine the minimal clinically important difference for each QoR scale. They found that perioperative interventions that result in a change of 0.9 for the QoR score, 8.0 for the QoR-15, or 6.3 for the QoR-40 signify a clinically important improvement or deterioration.

In spite of the advantages derived from the application of the afore mentioned scales, the intraoperative recall is not considered though this aspect when ignored might represent an important bias when evaluating the quality of post-anesthetic recovery.

In our experience, intraoperative recall should be adequately considered in any scale to assess satisfaction, because of their overall negative influence. However some investigators consider the intraoperative recall has no repercussion in patient satisfaction [7,17-21]. For example, Freeston., *et al.* [22], determined the prevalence of patient recall and its relationship between sedation depth, pain and patient satisfaction in a sample of patients receiving procedural sedation in the emergency department. Recall, pain and patient satisfaction were measured on a scale of 0 - 10 and sedation depth a scale of 1 - 4 (American Society of Anesthesiologists sedation scale). Spearman's correlation test showed sedation depth was significantly related to recall and increased recall was associated with higher pain scores and lower patient satisfaction.

Castella., *et al.* [23], studied the recall and anesthesia awareness are well distinct phenomena. Although the incidence of intraoperative awareness is more common among patients who reported a dream after surgery, the exact correlation between the two phenomena remains unsolved. The main purpose of this study was to investigate anesthetic dreaming, anesthesia awareness and psychological consequences eventually occurred under deep sedation. Intraoperative experiences were correlated with dream features in natural sleep.

The vast majority of studies related to anesthesia do not use validated tools to measure satisfaction, where it is believed that this result would be of great importance. This omission can lead to biased results in clinical efficacy studies. In addition to focus on a reassessment of existing measurement scales and the development of new tools is necessary, there is a need to encourage physicians and researchers to incorporate validated scales into daily practice and clinical trials. This qualitative assessment of the literature should provide a guide for anesthesiologists on the best available scales, and therefore help to increase reporting standards in academic studies, improving the clinical practice [12-15].

The satisfaction of the postoperative care is generally evaluated according to the results. At present, there are defined standards of morbidity and mortality. However, the assessment according to the results leaves out the subjective experience of the patient. In the area of anesthetic recovery, several studies have highlighted its importance in the attempt that constitutes a reflection of the quality of anesthesia care [7,16-20]. Patient satisfactions coupled with objective quality markers is currently used to assess the care process. Satisfaction is quantified by numerical or nominal scales that do not allow discernment of the positive and negative aspects of the patient experience [7,17-21].

## Conclusions

Quality of medical care, particularly those points regarding anesthetic recovery, is currently assessed in terms of outcomes. The patient satisfaction after anesthetic recovery is fundamental to provide a better perioperative care, so it should be measured. Applying quality of care scales concerning the satisfaction of patients may help to improve the practice in anesthesiology.

## Conflict of Interest

We declare that there is no conflict of interest.

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