Patient Satisfaction With Anesthesia Care: What Do We Know?

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This evidence review aimed to conceptualize patient satisfaction with anesthesia care (PSAC), which has been linked to reimbursement, competency evaluations, and litigation; to describe factors affecting PSAC; and to develop provider recommendations to enhance PSAC. The search for systematic reviews, survey reports, qualitative studies, and consumer satisfaction reports within the last 20 years excluded pediatric and obstetric articles.

The search yielded 27 quantitative, 7 qualitative, and 9 consumer satisfaction articles. High levels of PSAC are reported using a variety of methods. Studies evaluating patient perioperative experiences document that fear and anxiety with prior patient experiences have an impact on anticipatory anxiety. Patients reported desiring positive experiences and emotional connections with anesthesia providers. Modifiable dissatisfiers included anxiety, inadequate explanation of anesthesia, postoperative pain and nausea or vomiting, long surgeries or wait times, and anesthesia complications. Besides providing preoperative information with reasonable expectations (eg, for nausea and vomiting) and treating discomfort, anesthetists must engage emotionally with patients. Measures of PSAC should include the emotional component of PSAC. Future research addressing patient experiences with differing anesthesia methods would be helpful for providers trying to understand and facilitate patient coping.

Keywords: Anesthesia care, patient satisfaction, perioperative, psychometric testing.

Nurse anesthetists provide anesthesia to millions of surgical patients annually. Typically, on patient transport to the postanesthesia care unit (PACU), anesthetists perform a cursory assessment of vital signs, physical status, and patient comfort before evaluating another patient and returning to the operating room. Because of rapid operating room turnover and short recovery room stays, insight into patient satisfaction with anesthesia care (PSAC) is often lost or not reliably evaluated. In some institutions, satisfaction with anesthesia care is included as part of the generic patient satisfaction surveys delivered to surgical patients 1 to 3 days after discharge. Anesthetists receive reports of patient dissatisfaction with anesthesia only in the event of negative feedback related to poor or catastrophic patient outcomes.

Much research related to PSAC documents satisfaction with postoperative physical outcomes (eg, pain, nausea). Patient satisfaction, however, also depends on patients’ thoughts, feelings, and values. These factors are difficult to measure and may not be reflected in current practice indicators.

• Best Practice. Interactions with patients before anesthesia can be conducted in ways that offer them a sense of personal control while relieving their anxiety and improving safety by providing opportunities for error reduction. Perioperative communication regarding the presence of comorbid conditions, past allergic reactions, surgical site markings, and potential postoperative complications not only aids in ensuring quality care but also promotes patient trust in providers.

Recently, in collaboration with the Agency for Healthcare Research and Quality, the Centers for Medicare and Medicaid Services (CMS) standardized patient satisfaction metrics. They recommend the use of 2 patient surveys: the Consumer Assessment of Healthcare Providers and Systems (CAHPS) and the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS). Beginning in 2008, CMS has used survey results to calculate value-based payments. Since 2012, according to the Patient Protection and Affordable Care Act, survey results are used in determining incentive payments; HCAHPS scores are coupled with annual payment updates. When hospitals subjected to inpatient prospective payment systems fail to report these, they can experience up to a 2% reduction in reimbursements. Additionally, poor scores measured by readmission rates due to heart failure and pneumonia can generate up to a 3% penalty. These payment trends suggest that patient satisfaction surveys could be used in calculating future anesthesia reimbursements.

Important to anesthesia providers, patient perspectives underpin the decision to pursue litigation. Specifically, positive patient-provider relationships before, during, and
after surgery have been found to mitigate litigation. In an analysis of Press Ganey satisfaction surveys from 1998 to 2006, providers who were rated as “very good” had no filed lawsuits (0% risk of litigation) in contrast to those rated as “very poor” who had up to a 20% risk of litigation.

- **Patient Satisfaction.** Patient satisfaction is viewed as a comparison between patient expectations of a health-related experience and actual outcomes. Hinging on patient values, perceptions, and honesty, it is most often measured using surveys or interviews. Given this, a definition of patient satisfaction should drive the specific questions or items in any survey used. Valid and reliable survey development is based on concept clarity.

An exploration of a concept analysis offers insight for a definition and clarification of patient satisfaction. Taxonomies of patient satisfaction with care include dimensions such as care thoroughness, giving and receiving information, and provider characteristics such as courtesy, concern, respect, and demeanor. Antecedents of satisfaction include social influences, patient characteristics, prior experiences with healthcare (eg, surgery/anesthesia), environmental influences, cognitive status, and affective responses related to the care experience. Most descriptions of patient satisfaction with care delivery describe a link between patient satisfaction and expectations. That is, patients compare the actual care experience with a subjective standard or expectation. Consequently, expectations generate emotional responses that evolve from cognitive processes when the patient compares prior expectations with an actual experience.

The disconfirmation theory, developed by Oliver, explores this link between patient satisfaction and expectations. Disconfirmation theory highlights an imbalance between consumer expectations of service and perceived performance. When a consumer does not experience what is expected, he or she feels dissatisfied. Perceived performance cannot be distinguished from actual or technical performance, especially when the consumer is not familiar with the service. This is often the case with anesthesia services.

Based on the disconfirmation model, the PSAC model (Figure 1) underscores the relationship between patient expectations with perceived service as part of an interdependent loop shaping perceptions of satisfaction. Additionally, the model takes into account prior patient experiences and provider influence. Inputs such as the type of surgery, previous anesthetic experiences, comorbid conditions, learning or literacy needs, and healthcare values are factors that shape the expectations that patients have before a surgical procedure. Importantly, emotional responses (ie, patient preoperative emotions) act as a determinant in shaping patient expectations and, consequently, satisfaction. Across the research using the disconfirmation theory, responses such as joy, interest, attention, and anger create positive or negative feelings, which shape perceptions of satisfaction.

The PSAC model suggests that personal contact with providers is important in influencing patient satisfaction or dissatisfaction. Findings from Linder-Peltz, as cited by Newsome and Wright, reveal that although expectations, values, and perceptions shape patient satisfaction with healthcare, patient beliefs about a provider and the provider’s performance play an even larger role. These findings highlight the importance of the anesthetist’s knowledge of patient expectations as well as the importance of the preoperative evaluation in determining patient satisfaction. The dynamic feedback loop in the anesthesia satisfaction model establishes a framework that may aid anesthetists in identifying and influencing some modifiable factors related to satisfaction with anesthesia care.

The purpose of this integrative review was to examine published evidence about patient satisfaction as it relates to anesthesia care to:

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**Figure 1. Patient Satisfaction With Anesthesia Care Model**

Abbreviation: Pre-op, preoperative.

This model incorporates disconfirmation theory, a differentiation between actual and perceived service and emotions that reflects the dynamic nature of satisfaction.
Figure 2. Percentage of Studies Supporting Specific Dimensions (Modifiable and Nonmodifiable) Leading to Dissatisfaction With Anesthesia Care

Abbreviations: AC, anesthesia complications; IA, intraoperative awareness; IDM, involvement in decision making; PONV, postoperative nausea and vomiting; RBA, risks and benefits assessment.

1. Identify modifiable factors related to satisfaction with anesthesia care.

2. Integrate findings that will provide recommendations for anesthesia providers regarding PSAC.

History and Review of Literature

The literature search covered English-language sources published from 1993 to 2015. Articles included those about PSAC; pediatric and obstetric studies were excluded. The following online resources were searched: PubMed, Google Scholar, Cumulative Index to Nursing & Allied Health Literature (ESCO), Business (EBSCO), ABI/Inform Complete (ProQuest LLC), and ScienceDirect (Elsevier). Databases were searched for publications relevant to PSAC that included reports of survey results and qualitative study findings, psychometric characteristics of survey tools, and select consumer satisfaction studies used to inform model generation. Additionally, reference lists were searched to find related articles. The following search terms were used in all combinations: patient satisfaction, perioperative, surveys, questionnaires, anesthesia, anesthesia care, patient experience, healthcare, qualitative studies, consumer satisfaction, disconfirmation theory, customer satisfaction, and marketing theory. The search yielded 7 systematic reviews, 27 relevant quantitative studies, 7 qualitative studies, and 9 consumer satisfaction articles (used for concept clarification and framework development).

- Systematic Reviews. The systematic reviews about patient satisfaction focused primarily on psychometric testing of measures but revealed high levels of PSAC overall. Patients reported their satisfaction with anesthesia care from immediately after surgery to several months postoperatively using mail-back questionnaires, face-to-face interviews, phone interviews, or a combination of each method.9-12

Cross-sectional surveys using a Likert-response format formed the basis of most measures of PSAC. Few primary studies reviewed contained rigorous psychometric testing.9-15 Barnett et al9 reviewed more than 3,000 articles with a patient satisfaction outcome and found only 71 that reported psychometric testing of the patient satisfaction measure. Specific to anesthesia care, Bell et al15 Le May et al,11 and Fung and Cohen12 reported a high likelihood of measurement error across studies, limited psychometric testing, and no control for confounding variables.

Despite the reported lack of rigor in development of patient satisfaction measures, Hawkins et al14 and Chanthong et al10 disclosed common factors (inputs) affecting patient satisfaction: information, pain, postoperative nausea and vomiting (PONV), wait times, interpersonal skills of providers, privacy, safety, continuity of care, emergence, and awareness.11

- Individual Studies Measuring Patient Satisfaction. Across 27 studies, PSAC was reported to be high. Congruence between survey item dimensions and patient satisfaction was consistent with the anesthesia satisfaction model as well as review findings (Figure 2).16-39 Patient satisfaction scores were higher when providers communicated risks, benefits, and alternative anesthesia options and answered questions before patients received anesthesia. Similarly, patients were more likely to report higher levels of satisfaction when engaged and included by anesthetists in decision making than when not included.16-19,22,26,27 Saal et al23 documented that continuity of care (eg, postoperative visit by the anesthesia provider caring for the patient) also increased PSAC scores.

The collective evidence supports postoperative nausea, vomiting, and pain as major contributors to decreased patient satisfaction scores. Interestingly, younger, educated women were the most dissatisfied. Other dissatisfiers include preoperative fear and anxiety, postoperative complications, lack of inclusion of patients in decision making, type of surgery, long perioperative wait times, ASA class 1 or 2, alcohol habits (nondrinkers), and experiencing awareness under anesthesia (see Figure 2).16-21,23,26,32,35-37,39,40 Additionally, Hocking et al,19 Royse et al,21 Schiff et al29 and Myles et al35 found that patients undergoing longer surgical procedures reported more dissatisfaction (see Figure 2).

Multiple researchers found that providing patients with information, conducting a thorough risk-to-benefit assessment, and including patients in preoperative decision making enhanced patient satisfaction.16-20,22,23-27,30,31,33,34,36,39 However, Gurusamy et al,13 in a Cochrane review of clinical trials of education in laparoscopy, found no clear evidence that patient education improved satisfaction.

Developed in an effort to create a standardized instrument to measure patient satisfaction, the commonly used HCAHPS survey was meant to be useful for patients in
all hospital settings and exhibited sound psychometric testing. However, items in the final version are not specific to anesthesia care. Each requires a dichotomous answer choice (yes or no) and reflects a patient’s overall hospital experience (Table 1).

Despite consistent findings of the 27 studies with patient satisfaction survey results, only 14 studies disclosed reliability and validity information on measures. Of these, methods of reliability testing and validation differed. Surveys were developed using expert panels, patient interviews, literature searches, individual researchers, or adapted from other questionnaires. Survey or interview questions varied greatly (see Table 1).

Data capture differed across studies as well. Patients might have been interviewed, received a mailed survey, or provided with a handout by anesthesia providers or other persons. Complicating this, the timing of survey administration or patient interview varied from immediately after surgery (often in the PACU) to days, weeks, or months postoperatively. Given that test-retest reliability of a measure is sensitive to time, these outcome measures may be compromised.

Although useful as an outcome measure in research, well-developed or validated questionnaires are not frequently used in clinical settings. This applies to those specific to anesthesia care. This lack of precision in operationalizing PSAC questionnaires results in equivocal findings.

- **The Patient Experience.** Studies exploring satisfaction with anesthesia include patient experiences with retinal eye surgery, hip or knee replacement surgery, general surgery, and experiences specific to the perioperative period. Patients in most studies expressed strong preoperative feelings of anxiety and fear. Patients undergoing general anesthesia paradoxically reported high anxiety when being given information and when not being given enough information. Patients undergoing regional anesthesia showed decreased anxiety and increased satisfaction scores following a music intervention. In addition, patients expressed anxiety and multiple fears regarding surgery, anesthesia, pain, being awake during surgery, feeling helpless, loss of control, death, and fear of being cut. Past patient experiences influenced anxiety levels. For example, patients with positive prior experiences reported less and lower levels of anxiety.

Prior patient surgical/anesthetic experience may have an impact on the patient’s anticipatory anxiety when he or she is considering general or regional anesthesia. In a study describing patient experiences of having both regional and general anesthesia for hip or knee surgery, patients reported a preference for regional anesthesia if they had a prior negative experience with general anesthesia; however, overall, patients described greater fear and anxiety in anticipation of regional anesthesia. In addition, patients often preferred the anesthesia type recommended by the anesthetist or surgeon.

Across the qualitative studies, patients desired positive experiences with providers. Patients wanted to feel cared for and be known as a unique person throughout the perioperative period. Anesthesia providers who listened, were attentive, showed supportive behaviors, answered questions, and provided anesthesia information to their patients could emotionally connect with them; this emotional connection translated into patient satisfaction.

### Current Practice: Patient Satisfaction With Anesthesia Care

Patient satisfaction with anesthesia care has tradition-
satisfaction domains | Potential action
---|---
Fear/anxiety | Emotionally engage with patients.
Information/risks and benefits explained | Listen to patient fears/anxiety.
Answer questions | Set reasonable expectations.
Pain/discomfort | Address patient concerns and answer questions truthfully.
Postoperative nausea and vomiting | Emotionally engage with patients.
Involvement in decision making | Present reasonable expectations for pain/discomfort preoperatively.
  
Table 2. Modifiable Factors of Patient Satisfaction and Recommendations for Practice

ally been a desired goal and a measure of good care (eg, determinant of care quality). Although many nurse anesthetists understand the importance of having patients feel satisfied with their anesthesia care, few understand the complex process driving patient satisfaction. This process includes prior patient surgical/anesthetic experiences, patient expectations, provider interactions, and perceived quality outcomes; all these are affected by patient emotions (eg, fear and anxiety). Complicating this further, published evidence documents multiple ways to measure PSAC. However, lack of a standard measure may also be partly due to the complexity of issues surrounding the surgical experience. In addition, questionnaires do not differentiate between differing anesthesia practice models such as: anesthesiologist, nurse anesthetist, or an anesthesia care team model. Failure to understand patient satisfaction and its correlates may limit anesthesia providers’ ability to positively impact patients’ satisfaction with their care.

This integrative evidence review found support for the PSAC model, adapted from consumer research completed outside healthcare settings. The model postulates that expectations, values, and perceptions shape patient satisfaction6 with patient beliefs about providers and provider performance playing a large role.8 In fact, perceptions of high quality in the absence of actual high-quality service can occur, such as when a patient, in the absence of being seen or treated, recommends a provider to a friend.8 Patients presented with a written anesthetic report during a visit from an anesthesia provider outlining the type of anesthesia given, including procedures and medications, were more satisfied with the quality of their anesthesia than were patients receiving the same anesthesia care without the visit or report.11,36 In addition, patient perceptions charged with intense and personal emotions may lead to a reevaluation of prior feelings of dissatisfaction.48 Pain and nausea strongly predicted patient dissatisfaction, yet perceptions of satisfaction changed at differing time points dependent on patient symptoms.21 Patients who experience relief of severe pain may no longer focus on earlier feelings of dissatisfaction. Interestingly, postanesthesia patient satisfaction scores can even be unchanged in the event of unintended and untoward anesthetic events.11 This phenomenon occurs in part because of the inherent bias in the questionnaire. Survey developers do not always incorporate questions specific to dissatisfaction.11 The regard that patients hold for their anesthesia provider also strongly influences their satisfaction. In a systematic review, Le May et al11 describe an awake, uncomfortable patient during an esophagoscope who reported her overall satisfaction as high based on how much she liked her anesthetist.

Evidence from patient surgical experiences further underscores differences between patient satisfaction and care quality. Patients can be satisfied in the face of poor care, and dissatisfied on receiving excellent care. This is problematic since patient satisfaction results are often used to assess quality. Evaluation of the evidence, however, elucidates and strengthens the heightened impact of perioperative patient emotions as well as patient-provider relationships in determining patient perceptions of satisfaction or dissatisfaction.27,42,45,47 Patients critique their care quality based on emotions.49 Hudson et al41 identified a theme of caring as instrumental to patients’ positive perceptions of satisfaction. Provider reassurance, good communication, and a balance between providing anesthetic information and listening can help to significantly reduce preoperative anxiety, thereby improving patient satisfaction scores.42,44,45,47 The important message to anesthesia providers is that patient emotions must be addressed to enhance patient satisfaction.

Although the qualitative evidence and research outside healthcare support the importance of patient emotions on satisfaction with a care experience,8,27,42,44,45,47,48 most survey studies focused on anesthesia care do not consider patient emotions. In fact, only half of the 8 studies that offered a conceptual definition of PSAC included patient emotions as a unique component of patient perceptions.17,26,29,31,35,38,41 However, all 8 did consider patient perceptions and outcomes as influential to PSAC.28,30,38,41
• Implications for Anesthesia Practice: Enhancing Patient Satisfaction. Because of the financial incentives generated by positive patient satisfaction surveys, hospitals and anesthesia groups are compelled to consider patient satisfaction as a measure of care quality. What can anesthesia providers do? Although surgery is often an emotionally charged experience for patients, anesthesia providers tend to approach the patient from a cognitive perspective.49 However, the evidence from this review supports that in addition to providing excellent technical care, anesthetists need to engage emotionally with patients. They must listen to their concerns and fears, allay their preoperative anxiety, and answer their questions (see Figure 2 and Table 2). These actions show patients that anesthesia providers care.

• Future Considerations and Recommendations. Scarce evidence describing patient experiences with anesthesia was found. Therefore, more qualitative research specific to these patient experiences with anesthesia care is needed; results would be insightful in furthering anesthetists’ comprehension of this stressful patient experience. Particularly needed is information about what patients expect and how they interpret care delivery by anesthesia providers.

Future development of a standardized valid and reliable patient satisfaction survey with anesthesia care that accounts for differing anesthesia practice models is needed. Such a survey would measure dimensions that address the emotional component that drives patient expectations, perceptions, and satisfaction. In addition, it would offer a unified and more accurate approach to satisfaction measurement.

Another future consideration is implementing education and training for anesthesia providers that focus on effective communication skills with patients. This might be instituted through role-play or simulation training. Scenarios could be constructed that specifically addresses the highly anxious preoperative patient and how positive rapport through communication and listening can be developed.

Although patient satisfaction survey results will likely continue to incentivize hospital payments, providers must advocate with administrators and regulatory agencies for the inclusion of other quality measures, such as patient outcomes, safety measures, collegial communication, Anesthesia Department professionalism, surgeon satisfaction of anesthesia services, efficiency, and unplanned admissions. Based on the evidence, patient satisfaction survey results used as a single measure of quality may not accurately evaluate the quality of anesthesia care.

According to the Institute of Medicine (as cited by McIlraith49), satisfied patients have improved outcomes and are more compliant with treatment and less likely to pursue litigation. Because the establishment of reimbursement is made primarily from patient surveys (CAHPS or HCAHPS) that lack inquiry regarding PSAC and do not equate to high-quality anesthesia care, a false sense of satisfaction and quality of anesthesia care is reflected. Currently, there are no guidelines established for treating patients as whole persons. In addition, by considering the PSAC model as a guide, anesthetists can intervene in patient care, address patient emotions, and influence patient perceptions at points that will achieve the greatest impact in improving patient satisfaction.

REFERENCES


