



ORIGINAL RESEARCH PAPER

Anesthesiology

BIBLIOGRAPHIC REVIEW FACTORS INFLUENCING PATIENT'S ANESTHETIC SATISFACTION

KEY WORDS: satisfaction, anesthesia, general anesthesia, regional anesthesia, quality.

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ABSTRACT

Objective: Collect scientific evidence on the factors that influence the anesthetic satisfaction of patients, through a theoretical bibliographic review. Obtain an updated compendium of studies on user satisfaction, the instruments used to measure it and the influencing factors, which will be of great use to anesthesiology services to establish the actions that contribute to increasing satisfaction and the quality of the service provided.

Materials and Methods: Theoretical-descriptive review. Scientific articles were used as primary sources of information, the analysis material was collected from the following databases (secondary sources): Pubmed, Scielo, Wiley Online Library, Biomed Central. Articles on satisfaction of surgical patients in anesthesiology services were included, from 2016 to 2021.

Results: 41 articles were identified, including only 20 studies. Anesthetic satisfaction in the researches consulted was high. When analyzing the factors related to satisfaction, most of the researches consulted highlight that they are various and depend on the healthcare professional, the patient and the healthcare institution. The most important factors are the side effects that patients experience after anesthesia, such as nausea and vomiting. Validated instruments such as QoR-15, EVAN-G, LA-EQ, PSQ-2 or PQRS and others created for this purpose were used.

Conclusion: Patient satisfaction with anesthesia is an aspect of utmost importance in the context of the quality of anesthesiology services.

INTRODUCTION

The quality of health care has been defined as the degree to which health services increase the likelihood of the desired health outcome. Patient satisfaction has been defined as the benchmark that indicates the level at which patient expectations and the quality of medical care are met 1.

Patient satisfaction is an important subjective measure of the quality of medical care that contributes to the evaluation of the structure, process, and outcome of services. Many factors contribute, including institutional structure, interpersonal relationships, and patient expectations 2. Age, gender, social security, educational and social status also play a role. The key factor is adequate perioperative information between the patient or her family and healthcare providers 3.

The degree of patient satisfaction is an important indicator of the outcome of medical care and of the evaluation of the quality of services in anesthesiology. However, it is difficult to evaluate this result because satisfaction is a multidimensional concept with determinants that are not yet clearly defined. Although the role of patient satisfaction in anesthetic care has been increasingly investigated, many studies use only simple general questions to assess it, leading to high scoring results 4,5. The reliability of the global satisfaction ratings for a single item is poor and inadequate to address the complexity of this variable 6.

It is generally accepted that safe and effective pain relief contributes directly to satisfaction: the better the pain relief, the greater the satisfaction 7. Patient satisfaction is a subjective and challenging perception that links physical, expressive factors, psychological, social and cultural. Dissatisfaction occurs if the patient feels an inconsistency between the care expected and that provided. Due to the complexity, duration of surgery and pathophysiology of the disease, it is difficult to measure patient satisfaction related to perioperative anesthesia care. 8. According to many studies, levels of medical satisfaction are above 85% and satisfaction of the patient in terms of anesthesia is not very different 9.

At present it is considered that anesthesiologists have a greater participation in the preoperative evaluation and postoperative care, which may allow the prior identification and treatment of the adverse effects of this period. patient confidence through detailed discussion of the anesthetic plan

and response to any concerns about anesthesia; therefore, visiting him and discussing perioperative anesthesia problems, as well as resolving his concerns significantly improve patient satisfaction, regardless of the type of anesthesia performed 11.

Anesthesiology services will benefit from the above ideas about the results found in this research, since it will have a summary of the evidence about patient satisfaction with the service, the instruments used to measure it and the factors that influence this. This will allow to draw up strategies to increase the quality of the service and the satisfaction of the patients.

Consequently, the objective of this research is to collect up-to-date scientific evidence on the anesthetic satisfaction of surgical patients and the influencing factors, for which a theoretical bibliographic review will be carried out. With this review, an updated compendium of evidence of anesthetic satisfaction of patients was obtained, the instruments used to measure it and the factors that influence it, which will be of great use to anesthesiology services to establish actions that contribute to the increased satisfaction and quality of the service provided.

MATERIALS AND METHODS

Study design: a theoretical review, of a documentary type, was carried out.

Information sources: the following were used as primary information sources: scientific articles from indexed journals and as secondary information sources, specialized databases were taken into account: Pubmed, Scielo, Wiley Online Library or Biomed

Search criteria: the following Mesh Terms and Boolean operators were used: "Satisfaction" OR "patient satisfaction" OR "patient preference" AND "anesthesia" OR "anesthetic services" OR "anesthetic evaluation" OR "general anesthesia" OR "regional anesthesia "AND" healthcare evaluation "OR" healthcare quality assessment "AND" elective surgery "OR" emergency surgery "OR" laparoscopic surgery "OR" open surgery "AND" English (lang) "OR" Spanish (lang) ".

Selection criteria:

Inclusion Criteria:

- Articles on patient satisfaction with the anesthesiology service.

- Research carried out with adults (≥18 years).
- Articles in Spanish and English.
- Articles published from 2016 to April 2021.
- Analytical, observational, cohort design, systematic reviews and meta-analysis.
- Research carried out with elective surgery and emergency patients.
- Studies of patients who received general or regional anesthesia.

Exclusion Criteria:

- Research without bioethical statements.
- Incomplete articles.
- Investigations with unclear methodology, not reproducible.

METHODOLOGY:

a bibliographic search was carried out in specialized databases, using the search terms already described. The abstracts of the articles were read and downloaded. Once the articles had been identified, they proceeded to their detailed analysis, collecting in a data matrix information on author / s, year of publication, country, journal, database, characteristics of the analyzed population, degree of satisfaction, instrument used to measure satisfaction and factors that influence patient satisfaction with the anesthesiology service. Consecutively, the writing of the high-level scientific article began, using the Mendeley bibliography manager. Subsequently, the results, discussion and conclusion were elaborated.

RESULTS

41 articles were identified in the search carried out, of which 7 were eliminated for having been carried out with patients under 18 years of age, 4 that were published before 2016, 3 for having an unclear methodology and difficult to reproduce, 2 theses degree, 3 articles without ethical statements and 2 for studying satisfaction with obstetric anesthesia. At the end of the selection process, only 20 articles were identified, from which this theoretical review was carried out. Most of the selected articles were published in 2017 and 2019 (n = 7; 35%) respectively and 20% were published in Turkey (n = 4; 20%). See tables 1 and 2.

The findings found in relation to the subject studied are described below:

Degree of anesthetic satisfaction

The degree of anesthetic satisfaction in the researches consulted was high 3,8,9,12-18. When analyzing satisfaction for regional and general anesthesia, various results were obtained. In some studies, satisfaction was higher with regional anesthesia 19 than with general anesthesia 20. Research describing the use of non-pharmacological interventions, such as music therapy, was also evidenced. , which can increase patient satisfaction with anesthesia 21,22. Other studies defend a high degree of acceptance of general anesthesia among older adults 23. See table 3.

For his part, the author Tosuner 3 analyzed the degree of satisfaction with regional anesthesia in a series of 300 cases. The general level of satisfaction with regional anesthesia was 82.3%. In contrast, Berning et al. 8 describe 94.6% of anesthetic satisfaction and determined that the quality of postoperative recovery has little effect on the degree of satisfaction. And a study conducted in Ethiopia by Benwu et al. 9 reported 83.3% anesthetic satisfaction.

Likewise, four authors 12-15 describe a higher degree of satisfaction with regional anesthesia than with general anesthesia, however, Arenholt et al. 16 determined that 98.9% satisfaction with local anesthesia in patients who underwent surgery to fix the spinous sacral ligament.

Similarly, the group of researchers from Mracek et al. 17 who investigated the degree of satisfaction with general

anesthesia found that in 93.1% of the patients studied, it was higher than satisfaction with regional anesthesia (65.2%) in relation to those who underwent carotid endarterectomy. However, Wang et al. 18 describe a higher degree of satisfaction among patients who received general anesthesia compared to those who received regional anesthesia, in fusion surgery and anterior cervical discectomy. Factores condicionantes de la satisfacción con la anestesia

When analyzing the conditioning factors of satisfaction with anesthesia, most of the researches consulted highlight that there are several and they depend on the healthcare professional, the patient and the healthcare institution. Similarly, the most important factors for satisfaction include the side effects suffered by patients after anesthesia, nausea and vomiting being among the most frequent 9,12,17,19. Likewise, most researchers agree that female sex and high educational level are factors that are related to a lower degree of satisfaction with anesthesia 3,9. See table 4.

For his part, the author Tosuner 3 mentions that the degree of satisfaction with anesthesia is higher in the age group 18-25 years, male, previous experience of having received regional anesthesia and that they were well informed about regional anesthesia in a preoperative anesthetic evaluation. There was a relationship between pain due to failed spinal anesthesia during surgery and dissatisfaction with regional anesthesia.

While Benwu et al. 9 observed that the factors that affected the degree of satisfaction with anesthesia were: female sex, higher educational level, use of regional anesthesia, presence of nausea, vomiting, pain, dyspnea and cold in the immediate postoperative period and, as a factor that increases the satisfaction describe effective communication with the anesthesiologist in the preoperative period.

Within this same framework, Wang et al. 18 state that among the factors that favor anesthetic satisfaction is that regional anesthesia may be insufficient versus general anesthesia, since the patients reported pain during surgery; Furthermore, in cervical discectomy, one of the most important adverse effects with regional anesthesia is Horner's syndrome.

On the other hand, three authors 21, 22, 24 assure that non-pharmacological strategies, based on an improvement in communication between the anesthesiologist and the patient, and intraoperative music therapy, considerably increase the degree of satisfaction with the service.

Mracek et al. 17 and Schiefer et al. 25 determined that the factors that affected the degree of satisfaction were postoperative nausea and vomiting and fear of anesthesia in the group that received general anesthesia, while among those that received regional anesthesia, the main factor of non-satisfaction was the intraoperative pain.

Wazir et al. 26 describe, among the determinants of anesthetic satisfaction, factors related to the professionals and the health institution. Effective communication with the patient, spending more time with the patient, the skills of the professional, empathy and extraverbal language are some of the factors related to the professionals that influence the degree of patient satisfaction. In addition, it is known that high educational level, female sex, marital status or social class, are factors that also influence satisfaction. Likewise, health institutions with a high degree of hygiene, availability of personnel and resources, also contribute to increase patient satisfaction in the postoperative period.

Sinbukhova and Lubnin 23 describe as factors that affected satisfaction in geriatric patients: excess anxiety before surgery about the operation and anesthesia, the fact that the anesthesiologist does not visit the patient pre and

postoperatively, insufficient attention from the anesthesiologist in the operating room before anesthesia and the presence of nausea, vomiting, pain, dizziness, general malaise and thirst in the immediate postoperative period.

Additionally, Greimel et al. 27 in a series of 15,326 patients who underwent knee arthroplasty, which measured postoperative pain, need for analgesics, and satisfaction with the anesthesiology service; it was concluded that the factors favoring anesthetic satisfaction were the use of a combination of general and spinal anesthesia. Furthermore, the use of a combination of general and regional anesthesia was associated with a very significant advantage over other anesthetic techniques with respect to perioperative pain management, with low reports of side effects and greater subjective well-being. The use of regional anesthesia or the combination of general and regional was associated with higher degrees of satisfaction when compared with general anesthesia alone. This higher degree of satisfaction was associated with the lower need for the use of analgesia in the postoperative period, faster functional recovery and overall satisfaction.

Instruments to measure anesthetic satisfaction in surgical patients Regarding the instruments used to measure the degree of satisfaction with anesthesia, the researches consulted describe some that have been previously validated, such as QoR-15 ("Quality of recovery-15"), EVAN-G (Evaluation du Vecu de l'Anesthesie Generale), CSQ-8 ("Client Satisfaction Questionnaire-8"), PSQ-2 or PQRS ("Physician Quality Reporting System"), m-PSI ("Modified Patient Satisfaction Index") 8,12,13 , 16,18,21-23,25,28; while other authors created their own instruments to measure satisfaction 3,9,17,19,20,24,26. See table 5.

Tosuner et al. 3 applied a questionnaire on regional anesthesia to determine patient satisfaction and mood during the procedure. Patients could only mark one option: satisfied or dissatisfied. In the study by Berning et al. 8 used the questionnaire validated by Stark et al. 29 "Quality of recovery-15" QoR-15, which provides a valid, reliable, responsive and easy-to-use method to measure the quality of a patient's postoperative recovery.

In contrast, Benwu et al. 9 prepared a structured questionnaire previously tested by reviewing previously conducted studies on the subject of a prospective study on the satisfaction of the elective surgical hospitalized patient with the perioperative anesthesia service.

De los Ríos et al. 12 used in their research the Postoperative Recovery Quality Scale (PQRS), which includes an assessment of the physiological domains (cold, thirst, nausea, vomiting, pain) and, in addition, they used a verbal numerical rating scale (VNR) , in which when obtaining more than 5 points, it indicated that the patient was satisfied with the anesthesia received.

To measure the degree of satisfaction, Kreutziger et al. 13 used the German version of the customer satisfaction questionnaire (CSQ-8), which consists of eight questions (items); each provides a Likert-type scale with four response levels numbered 1 through 4. Agreements have low-level numbers (1 and 2) and disagreements have higher-level numbers (3 and 4). Overall satisfaction is reflected in the sum of the level numbers; therefore, the lower the number, the greater the patient satisfaction.

In other research by Arenholt et al. 16 who used the local anesthetic intraoperative experience questionnaire (LA-EQ) to evaluate the patient's experience with local anesthesia, who had undergone surgery to fix the spinous sacral ligament. The LA-EQ was developed to assess the patient's

experience with carotid endarterectomy performed under local anesthesia. The aspects that are evaluated with this questionnaire are: previous experiences of surgery with local anesthesia, discomfort at the time of injection, pain and discomfort during surgery, nervousness and difficulty in staying calm during surgery.

In the research by Mracek et al. 17 the instrument was designed to assess satisfaction. It is a simple questionnaire, which the patients answered at the time of discharge. This questionnaire inquired about satisfaction with the anesthesia received and, if they needed a new surgery, they were asked if they would choose the same form of anesthesia again.

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DISCUSSION

At present, it is considered that the patient-centered health system has quality of care among its objectives. Therefore, satisfaction is a key component of patient-oriented healthcare. Although the surgeon and the patient should be satisfied with the anesthesia, the goals are not the same. In fact, high satisfaction does not necessarily correspond to safe

and effective care. Given the above, patient satisfaction as well as that of the surgeon should be two important objectives in current quality medicine in anesthesiology, which represent an index of safe and effective medical care 14.

In this research, it was observed that most of the authors consulted agree that the degree of satisfaction with anesthesia in surgical patients was high 3,8,9,12-18, which means that, although the reported figures are very Depending on the instrument used and the type of patients studied, in general, it can be said that there is a high degree of satisfaction with anesthesia services.

This is explained because patient satisfaction with anesthesia is a complex concept, since it includes not only the level of satisfaction with the anesthesia itself but also the presence of fears, depression, worries, evaluation of the anesthesiologist's work, as well as dysfunction cognitive as a possible negative consequence of anesthesia 32; additionally, Castellanos et al. 33 ensure that the role of the anesthesiologist is not restricted to the operating room, but rather that its action is expected to transcend the operating room, with greater interaction with patients, in other services such as lithotripsy, endoscopy, electroconvulsive therapy, cardiac catheterization, among other procedures; Therefore, guaranteeing a quality service, with high levels of patient satisfaction, is essential.

Based on these considerations, some of the authors consulted describe higher levels of satisfaction with regional anesthesia than with general anesthesia 12-15. This mainly responds to the fact that with general anesthesia, important side effects are described more frequently, which can become disabling 16. These differences could be explained because satisfaction with anesthesia depends on several factors, including the previous experiences of the patients, patients, and communication with the anesthesiologist, resulting in the effect of the interaction of multiple variables, among which the immediate postoperative period also plays an important role 34.

Consequently, it can be described that regional and general anesthesia is used depending on the type and duration of surgery. Each has advantages and disadvantages and can have distinctive effects on the perioperative outcome. The potential advantages of regional anesthesia include: the absence of airway instrumentation, deep analgesia, stable hemodynamics, less surgical blood loss, and therefore better operative conditions; however, reported disadvantages include: intraoperative anxiety, cough, hiccups, and movement. In contrast, general anesthesia leaves the patient immobile throughout the procedure and provides a safe airway, although it can cause hemodynamic instability and greater intraoperative blood loss, analgesic requirements, and postoperative nausea and vomiting 35.

Regarding the factors that influence patient satisfaction, several are described in this research that are related to the patients, the anesthesiologist and the institution. Most of the authors consulted agree that side effects, such as nausea and vomiting, or pain, reduce the degree of satisfaction. Furthermore, it is known that a very important factor in satisfaction depends on the ability of the anesthesiologist to generate empathy and achieve effective communication with patients; Additionally, most authors agree that other factors such as the sex, age or educational level of the patient also have an important influence on the level of satisfaction with anesthesia 3,9,12,17,19.

Additionally, it can be determined that most of the authors consulted agree that guaranteeing patient satisfaction is one of the main indicators of anesthesiology service quality and the recommendations they provide to achieve this include

offering users the necessary information about anesthetics, their possible risks and side effects; likewise, allow them to participate in making decisions about the type of anesthesia they wish to receive; which is based on an adequate doctor-patient relationship with the anesthesiology staff, respect for their privacy during surgery and postoperatively, anxiety management in the preoperative period, and adequate postoperative pain control, among others 3,9,12,17,19.

In any case, these aforementioned findings can also be supported by the retrospective study by Pozdnyakova et al. 36 in which 51,676 surgical patients were included and, where they also describe that the factors that most affected patient satisfaction were age ≥ 55 years, surgery performed at night, or not being hospitalized. These authors acknowledge that many of the factors cannot be controlled.

For their part, Echevarría et al. 37 describe results that support the findings of this research. These authors, when conducting a survey on satisfaction with the anesthesiology consultation, which included 4006 patients, determined that the main factor influencing the degree of patient satisfaction is the communication skills of the anesthesiologist, in addition to respectful treatment, and the degree of information received during the consultation.

Despite the above, it can be stated that patient satisfaction with anesthesia is high, with differing opinions as to whether this satisfaction is higher among patients receiving general or regional anesthesia. The explanation for these divergences has been based on the presence of adverse events related to anesthesia (nausea, vomiting, pain, cold and urinary retention) and the time it takes for patients to regain their functional independence in the immediate postoperative period.

In addition, with this theoretical review the authors showed that the factors that determine satisfaction are several and diverse and include aspects related to the patient, the anesthesiology staff, the surgery and the health institution. Another finding of this review is that various instruments are used to measure patient satisfaction with anesthesia, some of these have been widely validated 8,12,13,16,18,21-23,25,28, while others are less robust and were created only to analyze a specific case series 3,9,17,19,20,24,26. These variations could be the explanation for the notable differences between the satisfaction reports observed in this research.

In this same context, this research showed that the degree of satisfaction of patients with anesthesia is high, however, as this is a multifactorial phenomenon and, when using various instruments to measure satisfaction, it is described that these results can be generalized, which constitutes one of the limitations of this research, in which, due to its theoretical review design, a quantitative analysis of the quality of the evidence (meta-analysis) was not performed.

Finally, it is worth mentioning the strengths and limitations found during the performance of this bibliographic review; Among the methodological strengths, the availability of specific scientific literature based on the search criteria used, updated studies in relation to the subject discussed, and categorization of the subject stand out. Likewise, within the limitations of this review, the need for larger-scale and better-designed studies can be mentioned.

CONCLUSION

Patient satisfaction with anesthesia is extremely important in the context of the quality of anesthesiology services. In the consulted literature, high levels of satisfaction are reported, as a result of several factors, related to the patient, the anesthesiologist and the institution; as well as the application of various instruments for its determination, many times

created ad hoc and without validation. When analyzing satisfaction for regional and general anesthesia, diverse results were obtained. In some investigations, satisfaction was higher with regional anesthesia than with general anesthesia. In another study, it was determined that the combination of general and regional anesthesia achieved a high degree of satisfaction in patients. There is also research that describes the use of non-pharmacological interventions, such as music therapy, which can increase patient satisfaction with anesthesia.

Authors' contribution

The research protocol and its design, data collection, statistical analysis, data assessment and interpretation, critical analysis, discussion, writing and approval of the final manuscript were carried out by the authors, who contributed in the same way throughout the process. The corresponding author represents the collective of authors.

Availability of data and materials

The data supporting this manuscript are available upon request from the corresponding author.

Consent for publication

No specific consent was obtained for its publication, since it is a bibliographic review.

Approval and consent

The protocol was approved in a timely manner.

Financing

This research was funded exclusively by the authors, without receiving external funding.

Declaration of conflict of interest

The authors of this research declare that they have no conflict of interest.

Table 1. Year of publication of the articles

Year	n	%
2016	1	5
2017	7	35
2018	2	10
2019	7	35
2020	2	10
2021	1	5
Total	20	100

Source: indexed journals

Elaboration: authors

Table 2. Country of publication of the articles

Country	n	%
Turkey	4	20
Sweden	1	5
Ethiopia	1	5
China	2	10
Cuba	1	5
Czech Republic	1	5
India	1	5
USA	1	5
Tunisia	1	5
Russia	1	5
Germany	2	10
Austria	1	5
France	1	5
Italy	1	5
Denmark	1	5
Total	20	100

Source: indexed journals

Elaboration: authors

Table 3. Degree of patient satisfaction with anesthesia

Author/year	Type of anesthesia	Satisfaction
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Tosuner et al., (2019).	Regional	82,3%
Berning et al., (2017).	General	94,6%
Menjie et al., (2019).	General	83,3%
De los Ríos (2017).	General	78,6%
	Regional	91,0%
Mraceck et al., (2018).	General	93,1%
	Regional	65,2%
Subramanian et al., (2017)	General	79,0%
Uzman et al., (2019).	Regional	94,0%
Gökçek et al., (2020).	General	73,3%
Kahloul et al., (2017).	General	81,4%
Sinbukhova y Lubnin (2019).	General	70,0%
Capdevila et al., (2016).	Regional	99,4%
	General	94,4%
Arenholt et al., (2019).	General	98,9%

Source: indexed journals

Elaboration: authors

Table 4. Factors that determine satisfaction

Author/year	Facts
Tosuner et al., (2019).	Age: 18-25 years.
	Male gender.
	Male gender.
Berning et al., (2017).	Previous regional anesthesia.
	Adequate communication with the patient increases safety.
Benwu et al., (2019).	The quality of the recovery had little influence on the degree of satisfaction
Chuang et al., (2017).	Nausea, vomiting, pain, dyspnea, and cold
	Women had less satisfaction than men
De los Ríos (2017).	The higher the educational level, the lower the satisfaction
	Effective communication is a non-pharmacological tool that improves patient satisfaction
Mraceck et al., (2018).	Thirst, cold, pain, nausea and vomiting. These are more common in general anesthesia patients.
	Postoperative nausea and vomiting, postoperative psychological disturbances and fear of general anesthesia.
Subramanian et al., (2017)	Intraoperative pain. Respiratory problems. Intraoperative stress and discomfort.
	Poorly managed postoperative pain
Uzman et al., (2019).	Headache, urinary retention, and pain in the right shoulder postoperatively
Wazir et al., (2018).	Effective communication with the patient, spending more time with the patient, professional skills, empathy and extraverbal language
	High educational level, female gender, marital status or social class, are factors that also influence satisfaction and concern patients
Gökçek et al., (2020).	Pharmacological interventions such as music therapy
Sinbukhova y Lubnin (2019).	Anxiety before surgery about the operation and anesthesia, no postoperative visit of the anesthesiologist, no visit of the anesthesiologist before the operation, insufficient attention of the anesthesiologist in the operating room before anesthesia, nausea, vomiting, pain, dizziness, general malaise and thirst.
	Nausea, postoperative pain management. Lack of information on anesthetic options.
Schifer et al., (2019).	Less need for the use of analgesia in the postoperative period, faster functional recovery and overall satisfaction
Greimel et al., (2017).	

Source: indexed journals
Elaboration: authors

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