Student's Journal of Health Research Africa
e-ISSN: 2709-9997, p-ISSN: 3006-1059
Vol. 6 No. 3 (2025): March 2025 Issue
https://doi.org/10.51168/sjhrafrica.v6i3.1669
Original Article

PATIENT SATISFACTION WITH REGIONAL ANESTHESIA AND GENERAL ANESTHESIA IN UPPER LIMB SURGERIES: A CROSS-SECTIONAL STUDY.

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ABSTRACT

Background
Assessing patient satisfaction following anesthesia is a crucial metric for both quality control and raising hospital care standards.
Objectives- For upper limb procedures, the purpose of this study is to assess and contrast the patient satisfaction levels of regional and general anesthesia.

Materials and Methods
It was an open-label, cross-sectional study that took place at Shree Narayan Medical Institute & Hospital, Bihar, India, between January 2023 to January 2024. Overall, 200 patients were enrolled in the study. Among all participants, 100 were those who underwent regional anesthesia, and the other 100 underwent general anesthesia.

Results
Most of the patients were more than 50 years of age in both the respective groups of regional anesthesia and general anesthesia groups. It was observed that 55 (55%) underwent minor surgery in the regional anesthesia group and 45 (45%) underwent major surgery. While in the general anesthesia group, 40 (40%) of patients underwent minor surgery and 60 (60%) of patients underwent major surgery. Furthermore, patients receiving regional anesthesia reported higher overall satisfaction (4.2 vs. 4.1), better pain management (4.1 vs. 3.9), and faster recovery times (4.3 vs. 3.6) compared to those receiving general anesthesia. However, general anesthesia was associated with fewer postoperative nausea (3.4 vs. 2.7) and complications (3.1 vs. 2.4).

Conclusion
The study highlights that regional anesthesia significantly improves patient satisfaction, particularly in pain management and recovery, making it a preferable option for upper limb procedures.

Recommendation
It is recommended to consider regional anesthesia for upper limb procedures due to its superior patient satisfaction, particularly in pain management and recovery.

Keywords: *Upper Limb Surgeries, General anesthesia, Patient satisfaction, Regional anesthesia*
Submitted: *2025-02-09* ***Accepted:*** *2024-03-24* ***Published: 2025-03-30***

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INTRODUCTION

Assessing patient satisfaction following anesthesia is a crucial metric for both quality control and raising hospital care standards. The healthcare sector views patient satisfaction as a multifaceted concept that balances expectations and results [1, 2].
This encompasses elements like the simplicity of the anesthetic process, the negative consequences of anesthetics, and interpersonal and emotional aspects [3]. According to Pascoe, patient satisfaction is the result of the patient's "emotional response" and "cognitive evaluation" of the care they receive. Patient satisfaction is recognized to be influenced by several sociodemographic characteristics, cultural influences, and patient cognition [2].
For surgical procedures, especially those involving the upper limbs, the decision between regional anesthesia and general anesthesia is crucial to the patient's experience and recuperation [4]. Optimizing perioperative care strategies and enhancing healthcare delivery requires an understanding of the ability to measure patient satisfaction with different anesthesia modalities [5, 6].

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Regional or general anesthesia entails intricate considerations that strike a balance between surgical needs, patient safety, and personal preferences [7]. Nevertheless, the anesthesiologist's method might not always produce the best patient pleasure [1, 2].

By reducing systemic effects and improving postoperative pain management, regional anesthesia procedures like peripheral nerve blocks and epidurals might potentially increase patient comfort and satisfaction [8, 9]. For more involved or invasive surgical operations, on the other hand, general anesthesia offers unconsciousness and muscle relaxation. In order to determine the type of anesthesia, patients, surgeons, and anesthesiologists frequently consult together while taking the patient's preferences, medical history, and the nature of the surgery into account [10, 11].

Variability in patient satisfaction results continues despite improvements in perioperative care and anesthesia procedures. These variations can be attributed to a variety of factors, from the perceived quality of postoperative recovery to anesthesia-related side effects [12, 13].

The purpose of this study is to assess and contrast the patient satisfaction levels of upper limb procedures performed under regional anesthesia versus general anesthesia.

METHODOLOGY

Study Design and study setting

It was an open-label, cross-sectional study that took place at Shree Narayan Medical Institute & Hospital, a tertiary care teaching hospital located in Saharsa, Bihar, offering comprehensive medical education and healthcare services. The study duration was from January 2023-2024.

Study Population

The study included 200 patients in total. One hundred subjects had localized anesthesia, while the remaining 100 received general anesthesia. Patients who were 18 years of age or older, undergoing elective upper limb procedures under either general or regional anesthesia, and giving their informed agreement to participate in the study were the requirements for inclusion. Patients who were having emergency surgery or who had cognitive problems that made it difficult for them to answer satisfaction surveys were excluded.

Study Size

A total sample size of 200 participants was selected to ensure adequate power to detect differences in patient satisfaction between the two anesthesia groups. This number was estimated based on previous literature, assuming a medium effect size, a 95% confidence level, and 80% statistical power. Additionally, equal allocation (100 patients in each group) allowed for a balanced comparison and minimized variability across groups, thus strengthening the validity of the findings.

Data Collection

Basic information such as patient demographics (age, gender, and comorbidities), anesthesia type (regional or general), upper limb surgery type, and patient satisfaction assessment were among the data gathered for the study. Standardized satisfaction surveys were used to gauge patient satisfaction after surgery.

Bias

Selection bias was minimized by enrolling consecutive eligible patients, and information bias was reduced using a standardized satisfaction questionnaire. Data analysis was blinded to anesthesia type to prevent interpretation bias.

Statistical Analysis

The surgical features and patient demographics will be summed up using descriptive statistics. The proper statistical tests (such as t-tests and chi-square tests) for continuous and categorical variables, respectively, will be used in comparisons between the groups under regional anesthetic and general anesthesia. In order to account for possible confounding variables, regression analysis may be utilized.

RESULTS

A total of 250 patients were initially assessed for eligibility. Among these, 220 met the inclusion criteria and were invited to participate. Of the 220 eligible patients, 200 gave informed consent and were enrolled in the study. The remaining 20 either declined participation (n=12) or had incomplete records that precluded analysis (n=8). All 200 participants completed the study and were included in the final analysis. No loss to follow-up was reported.

The participant demographics are shown in Table 1. In both the general anesthetic and regional anesthesia groups, the majority of the patients were over 50. In the group receiving regional anesthesia, it was found that 45 (45%) had major surgery and 55 (55%) had minor surgery. In contrast, 40 patients (40%) and 60 patients (60%) in the general anesthesia group had minor and major surgeries, respectively.

In addition to demographic details, data on comorbidities were collected during patient evaluation. Among the 200 participants, the most common comorbidity was hypertension, present in 80 patients (40%), followed by diabetes mellitus in 60 patients (30%), and respiratory conditions such as asthma or COPD in 25 patients (12.5%).

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A smaller proportion had cardiac disorders (10%), while 30 participants (15%) had no known comorbidities. These comorbidities were evenly distributed across both anesthesia groups and considered in outcome analysis.

Table 1. Demographics of Participants

Parameters	Regional Anesthesia (n=100)	General Anesthesia (n=100)
Age (in years)		
18-30	10 (10%)	20 (20%)
31-50	30 (30%)	25 (25%)
More than 50	60 (60%)	55 (55%)
Female Participants	25 (25%)	20 (20%)
Male Participants	75 (75%)	80 (80%)
Minor Surgery	55 (55%)	40 (40%)
Major Surgery	45 (45%)	60 (60%)
Comorbidities		
Hypertension	35 (35%)	45 (45%)
Diabetes Mellitus	28 (28%)	32 (32%)
Respiratory Disease	10 (10%)	15 (15%)
Cardiac Disease	7 (7%)	13 (13%)
No Comorbidity	20 (20%)	15 (15%)

Data were presented as n (%)

A standardized questionnaire with values ranging from 1 (very dissatisfied) to 5 (extremely satisfied) was used to gauge patient satisfaction. The average satisfaction ratings from Table 2 are displayed in the following table.

Table 2. Scores of Patient Satisfaction

Satisfaction Metrics	Regional Anesthesia	General Anesthesia
Overall Satisfaction	4.2	4.1
Pain Management	4.1	3.9
Time to recovery	4.3	3.6
Communication with staff	4.5	4.1
Post-operative Nausea	2.7	3.4
Post-operative Complications	2.4	3.1

Significant disparities between the two groups were shown by statistical analysis. Compared to patients under general anesthesia, those under regional anesthetic reported better pain control with a p-value less than 0.01, faster recovery times with a p-value less than 0.0), and higher overall satisfaction with a p-value less than 0.05. However, the group under general anesthesia experienced a considerably decreased incidence of postoperative nausea and problems with a p-value less than 0.05.

DISCUSSION

This study aimed to compare patient satisfaction between regional and general anesthesia in elective upper limb surgeries. The findings revealed a clear preference for regional anesthesia, particularly in terms of postoperative pain control and faster recovery. Additionally, patients in the regional anesthesia group reported higher overall satisfaction, aligning with the study's objective to assess the impact of anesthesia type on patient-centered outcomes.

These results suggest that regional anesthesia may provide superior postoperative experiences by improving pain management and reducing recovery time. This supports the hypothesis that localized anesthesia, by minimizing systemic drug exposure, enhances site-specific analgesia and reduces the need for opioids. Our findings are consistent with existing literature, including a 2018 systematic review [14] and subsequent meta-analyses [15], which highlighted reduced opioid use and better pain outcomes with regional techniques [16, 17].

However, our study also diverged from certain prior reports. Notably, patients in the general anesthesia group experienced fewer incidences of postoperative nausea and complications, contrary to Greene's 2019 study [18], which found no significant difference between the two modalities

[19]. This discrepancy could stem from variations in surgical procedures, anesthesia protocols, or patient characteristics. Overall, these results have both theoretical and practical implications. Theoretically, they reinforce the benefits of regional anesthesia in minimizing systemic effects and improving pain-specific outcomes. Practically, they stress the importance of personalized anesthesia planning, considering individual patient needs, surgical factors, and potential side effects. Tailoring anesthesia choice in this manner could enhance patient satisfaction and improve overall surgical care quality [20, 21].

GENERALIZABILITY

The study's findings are primarily generalizable to adult patients undergoing elective upper limb surgeries in similar tertiary care settings. However, variations in surgical protocols, anesthesia techniques, and patient demographics across regions may limit broader applicability. Further multicenter studies are needed to enhance generalizability.

CONCLUSION

The study found strong evidence that, especially when it comes to pain management and recovery durations, regional anesthesia greatly improves patient satisfaction after upper limb procedures. These results highlight the value of a patient-centered approach when selecting an anesthetic, indicating that regional anesthesia may be the better option due to its specific advantages. But because every patient has different postoperative nausea and consequences, it is important to have a sophisticated grasp of and respect for each patient's particular demands. This study encourages integrating patient preferences and specific health profiles into the decision-making process to optimize surgical outcomes and enhance overall patient satisfaction in upper limb treatments.

LIMITATIONS

The limitations of this study include its non-randomized design and reliance on self-reported patient feedback, which may introduce bias. Additionally, the finding that general anesthesia was associated with lower rates of postoperative nausea requires further investigation through controlled clinical trials. Future research should involve randomized studies to more accurately compare anesthesia outcomes and explore the long-term impact of different anesthesia techniques on post-surgical recovery, functionality, and quality of life.

RECOMMENDATIONS

Based on the results, regional anesthesia is recommended for elective upper limb surgeries due to its superior pain control, faster recovery, and higher patient satisfaction. However, individual patient factors and potential for postoperative nausea should also be considered when selecting the anesthesia technique.

SOURCE OF FUNDING

The study had no funding.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

ACKNOWLEDGMENT

We would like to thank the medical staff at Shree Narayan Medical Institute & Hospital for their support in conducting this study.

AUTHOR CONTRIBUTIONS

All authors contributed equally to the design, data collection, analysis, and manuscript preparation.

DATA AVAILABILITY

The data used in this study are available upon request from the corresponding author.

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PUBLISHER DETAILS

Student's Journal of Health Research (SJHR)
(ISSN 2709-9997) Online
(ISSN 3006-1059) Print
Category: Non-Governmental & Non-profit Organization
Email: studentsjournal2020@gmail.com
WhatsApp: +256 775 434 261
Location: Scholar's Summit Nakigalala, P. O. Box 701432, Entebbe Uganda, East Africa