



ARSI UNIVERSITY COLLEGE OF HEALTH SCIENCES

**LEVEL OF PATIENT SATISFACTION WITH POSTOPERATIVE PAIN
MANAGEMENT AND ASSOCIATED FACTORS AMONG ADULT ELECTIVE
SURGICAL PATIENTS AT ASELLA TEACHING AND REFERRAL HOSPITAL**

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A RESEARCH THESIS TO BE SUBMITTED TO ARSI UNIVERSITY COLLEGE OF
HEALTH SCIENCES DEPARTMENT OF ANESTHESIA FOR PARTIAL FULFILLMENT OF
THE REQUIREMENT FOR MASTER OF SCIENCE IN ANESTHESIA.

September 2025 GC

ASELLA, ETHIOPIA

ACKNOWLEDGMENT

First and foremost, I express my deepest gratitude to Almighty God for the blessing that enables me to complete this study. I extend my heartfelt appreciation to Arsi University and the Anaesthesia department for providing an environment that fosters academic growth and research excellence. I am profoundly thankful to my Advisors, Dr Firaol Hailu (Anesthesiologist, Assistant Professor), Mr Belayneh Tefera (MSc in Anaesthesia), and Mrs Amina Abdulmelik (MSc in Anaesthesia) for all their invaluable contribution, scientific input, and fruitful comments throughout the process and completion of this research thesis.

To all who contributed in one way or another, I am sincerely grateful.

ABSTRACT

Background: Patient satisfaction with postoperative pain management reflects not only the degree of pain control but also the overall health professionals' institutional services. Undertreated postoperative pain negatively affects patient satisfaction by altering psychological, emotional disturbances, and physical function. Understanding factors influencing patient satisfaction with postoperative pain management can help improve care outcomes and tailor pain management strategies. Although various modern pain control methods have been introduced, in Asella teaching and referral hospital, including ultrasound-guided nerve block, no studies have been conducted in this study area.

Objectives: Assess the Level of patient satisfaction with postoperative pain management and its associated factors among adult elective surgical patients at Asella Teaching and Referral Hospital from July to September /2025

Method: - An institution-based cross-sectional study was conducted among 135 adult elective surgical patients by using a systematic random sampling technique. Data were collected using modified APS-POQ-R structured questionnaires, interviews, and Chart records in the KoboToolbox. The data was checked, downloaded, and then transferred to SPSS version 26 for analysis. Bivariate and Multivariate Binary logistic regression were used to identify associated factors. A p-value less than 0.05 was considered statistically significant. The study's findings were reported and presented in text, tables, graphs, and charts.

Result: The findings of this study revealed that 114(84.4%) of patients were satisfied with postoperative pain management services. Patients who received multimodal analgesics with nerve blocks (AOR = 2.43; 95%CI: (1.39-8.45)) were associated with a high level of satisfaction. Patients who experienced moderate interference of sleep (AOR 0.45; 95% CI: (0.21-0.96)) were associated with lower satisfaction with postoperative pain management.

Conclusion and recommendation: Our study showed that multimodal analgesia with PNB and the sleep interference from untreated acute postoperative pain were essential factors related to overall patient satisfaction. We recommend that all health professionals routinely follow, assess, and promptly provide multimodal analgesia to surgical patients to manage acute postoperative pain adequately.

Keywords: Postoperative Pain, Patient Satisfaction, Elective Surgery

Abbreviations and Acronyms

APS-POQ-R: American Pain Society Patient Outcome Questionnaire Revised

ADLs: Activities of Daily Living

ASA: American Society of Anesthesiologists

AOR: Adjusted Odd Ratio

ATRH: Asella Teaching and Referral Hospital

CI: Confidence Interval

COR: Crude Odd Ratio

ETB: Ethiopian Birr

GA: General Anesthesia

HCP: Health Care Professionals

MMA: Multi-Modal Analgesia

MSC: Master of Science

OR: Operation Room

PACU: Post-Anaesthesia Care Unit

PCA: Patient-Controlled Analgesia

PNB: Peripheral Nerve Block

POPM: Postoperative Pain Management

RA: Regional Anesthesia

SPSS: Statistical Package for Social Sciences

VIF: Variance Inflation Factor

VNRS: Verbally Numeric Rating Scale

U/S: Ultrasound

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1. INTRODUCTION

1.1. Background

Pain is defined as an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage. Postoperative pain is a mutually recognisable somatic experience that reflects a person's apprehension of threat to their bodily or existential integrity. Patients experience postoperative acute pain, which occurs following tissue injury and should resolve during the healing process. The high intensity of postoperative pain commonly experienced within the first 24 hour of surgery and become lower within 48 hours. According to numerous studies, shows that a patient's verbal description of postoperative pain, with a combination of using validated pain rating scale through establishes a good communication between patients and health professionals are the easiest and most accurate evaluation of pain (1,2,3).

Globally, each year an estimated of 240 million patients undergoes surgical operations, and 60 %–86.7 % of patients experience moderate to severe postoperative pain. Among adult patients who admitted to hospitals 37.7 % to 84 % of them reports different level of pain, from those patients 9 % to 36 % experienced severe pain. In addition, acute severe pain may affect patients' emotions, such as dissatisfaction and discomfort (4,5,6).

Patient satisfaction is a response of health service users to the suitability between the level of importance and expectations before and after receiving health services. Patient satisfaction with postoperative pain management reflects not only the degree of pain control but also the timeliness of intervention, adequacy of communication, respect for patient preferences, and the overall responsiveness of healthcare providers(7).

The foundation of acute pain teams, especially in large general hospitals, has significantly ameliorated the overall quality of pain management practice in acute settings. However, the unwanted analgesic-related side effects can contribute in reduction of patient satisfaction with postoperative pain management. The previous studies have indicated that Scio demographic characteristics such as age, sex, and the intensity of pain affected patient satisfaction with pain management(8,9)

Patient satisfaction monitoring through continuous pain scoring scale techniques during the postoperative period is a crucial part of minimizing the incidence and intensity of acute postoperative pain and enhance patient well-being. According to evidence, patient satisfaction with postoperative pain management associated with, prior pain experiences, type and duration of surgery, the analgesic modality used, the quality of counselling provided, the nature of treatment, patients preoperative knowledge, and actual pain experience(10).

By giving adequate preoperative information on postoperative pain, preoperative education, and nonpharmacological treatments could improve patient satisfaction. A global survey conducted across seven countries — specifically the UK, Germany, Italy, Korea, Mexico, Spain, and Finland — revealed that doctor-patient communication is key to accurate care, diagnosis, and improved patient satisfaction with postoperative pain management (11,12).

Patient satisfaction with their pain control is an index of ongoing quality enhancement and overall healthcare performance. It provides a power of acute observation in the effectiveness of clinical services, especially postoperative pain management services. As a result of this, various quality improvement programs, particularly those centered on rapid pain assessment and management, have been introduced(13,14).

Even though the American Society of Anesthesiologists and the Joint Commission on Accreditation of Healthcare Organisations (JCAHO) emphasized adequate pain management as patient right, in many resource limited area, inadequate analgesic availability, gaps in practice and knowledge on assessing and effectively managing postoperative pain, which in turn ultimately compromising patients physical, psychological wellbeing and overall quality of life(15).

1.2. Statement of the problem

Despite advances in pain management, the under-treatment of postoperative pain continues to affect acute care settings, leading to poor patient outcomes and satisfaction. Studies have shown that up to 83% of patients experience relief from severe pain and patient satisfaction with postoperative pain management. Inadequate and poorly executed pain assessments are due to an insufficient understanding of pain management strategies. This leads to adverse effects on patients' physical health, psychological well-being, and quality of life. Additionally, patient satisfaction was associated with both patient-defined outcome measures and the technical efficacy of pain-related care, as well as the psychosocial dimension of pain management. These are important considerations to address to improve the quality of care and surgical recovery experiences (16,17).

Achieving adequate post-operative pain management is not an easy task for health professionals. The common challenges are suboptimal pain assessment practices, a communication gap with patients, and the highly subjective nature of pain experience and expressions. In earlier clinical practice, absence of complications and stable vital signs was used as an indicator or standard of a good clinical care service. But now a days the health Institute have use patient-reported outcomes and patient satisfaction as a key measures to evaluate clinical care success(18).

Dissatisfaction with inadequate postoperative pain management not only negatively affect patients' perception of surgical care and trust in the health system but also had serious clinical outcomes include pulmonary embolism, myocardial infarction, deep vein thrombosis, pneumonia poor wound healing, and emotional depletion, this could increase economic and medical burden's, by prolonged hospital stay and subsequent need for readmission(4).

There is some controversy about the association between patient satisfaction and pain intensity. In some studies, despite the presence of suffering from undertreated acute postoperative pain, the patients were satisfied. On the other hand, many studies conclude that intensity of postoperative pain have negative impacts on patients' satisfaction with postoperative pain management (17,19).

In our country, few studies have been conducted on this topic, and like global studies our search has yielded conflicting results regarding pain intensity and patient satisfaction. The study conducted at Yekatit hospital found an unexpected finding, which contrasts with the other similar

studies, which was that patients with mild pain experienced lower odds of satisfaction with postoperative pain management compared to those with severe pain(20).

In contrary to this a study conducted at Gondar reported that patients with lower pain scores had higher odds of satisfaction with postoperative pain management than those with severe pain(21).

Despite these challenges and controversies, no similar study has been conducted in the proposed study area. Notably, our current surgical setup has recently adopted ultrasound-guided nerve blocks as a routine technique for postoperative pain management.

The routine use of ultrasound-guided nerve blocks for anesthesia and analgesia has been in place since the start of postgraduate anesthesia classes; there is insufficient evidence on how this practice affects patient satisfaction. As this practice represents a significant shift in pain management strategies, evaluating patient satisfaction and its associated factors in this context is crucial for understanding the technique's effectiveness and guiding further improvements in patient-centred care.

1.3. Significance of the study

Understanding patient satisfaction with postoperative pain management is essential not only for improving clinical outcomes but also for strengthening institutional accountability and service delivery standards. While the burden of postoperative pain is well established in various studies, there is a critical lack of localised evidence regarding patient satisfaction, especially within the context of the recently adopted multimodal analgesia strategies, such as ultrasound-guided nerve blocks. This study aimed to fill this gap by examining patient satisfaction in the specific setting of the proposed study area.

This study can increase patient trust in surgical services by demonstrating a commitment to effectively addressing postoperative pain.

The finding of this study can support the hospital in enhancing its pain management protocols, encouraging analgesia resource allocation, and improving healthcare workers' responsiveness to patients' reported pain experiences.

At the community level, the study can increase patient trust in surgical services by encouraging the health professionals' commitment to effectively manage postoperative pain. By raising awareness of pain management rights and improving satisfaction outcomes, the research could empower patients to engage more actively in their care and recovery. Ultimately, this contributes to better health-seeking behaviours and strengthens the public perception of quality surgical and anaesthesia care.

This study may provide as a baseline for future research and policymakers with evidence-based knowledge into patient satisfaction with postoperative pain management.

2. LITERATURE REVIEWS

Patient satisfaction is closely linked to effective postoperative pain treatment in healthcare institutions, which depends on both psychosocial support and technical aspects of care. Patients' expectations regarding how their postoperative pain will be managed may influence their level of satisfaction with postoperative pain treatment. Undertreated postoperative pain has been regularly shown negatively affect patients' well-being and reduce their overall satisfaction. Therefore, assessing patient satisfaction with postoperative pain management is crucial(15,17). Studies have shown that despite the availability of advanced analgesics, a significant proportion of elective surgical patients continue to experience moderate to severe pain after surgery. Across countries, satisfaction rates vary widely depending on institutional practices and patient expectations.

2.1. Patient satisfaction with postoperative pain management

Recent studies have shown significant controversy regarding the effectiveness of postoperative pain management practices and patient satisfaction.

For instance, A prospective, multicenter survey conducted in India in 2017 among 1046 patients found that although approximately 88.4% still reported experiencing pain and difficulty in activities in bed, and 78.4% verbalised feelings of depression, within the first 24 hours, the majority (7.9/10) expressed moderate to high satisfaction with pain relief. Among those patients, those on patient-controlled analgesia had better satisfaction scores than those on other modalities. They found that a formal pain service alone does not ensure better outcomes; rather, evaluation of specific patient perceptions should be incorporated into postoperative pain management and patient satisfaction (22).

An observational study, conducted in India in 2020 on 200 postoperative adult patients, found that Patient involvement in managing their own acute postoperative pain was minimal and also their pain was poorly treated. This result, in a high proportion of patients (82.5%) were experienced acute postoperative pain, which significantly interfered their sleep quality, and emotional well-being and daily activities. Despite this, 69% of patients were satisfied with the overall pain management (69%). The researcher suggested that the high satisfaction rate could be due to patients expect that acute postoperative pain is inevitable(19).

In Bangladesh, a descriptive cross-sectional study was conducted at Chattagram Maa-O-Shishu Hospital Medical College in 2025 on 180 patients undergoing surgery. The majority of the appendectomy patients (76%) were satisfied with pain management. The study emphasised that routine postoperative pain scoring, using pain severity as an indicator, would facilitate healthcare providers in monitoring the physical recovery of the majority of patients in routine clinical practice. This improves patient satisfaction with POPM by minimising acute postoperative pain(10).

A descriptive study conducted in Egypt in 2018 on 135 patients found that despite the provision of different classes of analgesia postoperatively, the majority of patients (90.9%) reported experiencing severe pain, and 70.8% of patients interfered with their daily activities, sleep, mood, and emotional status. Also, the medication's side effects contribute to the patient's discomfort. Of the total patients, only 0.7% of surgical patients were satisfied with their pain management. The findings of this research highlight a critical gap between postoperative patient satisfaction and clinical pain control experience (23).

Likewise, a 1-year prospective study conducted in Nigeria in 2020 on 891 patients found that 53.3% (an average of 5.3/10) were satisfied with their postoperative pain management following emergency surgeries. While the Result of the overall pain scores indicated that 98.1% of the patients had pain within eight hours, whereas 96.4% had pain within 24 hours, with a pain score of 24, respectively.

A prospective cross-sectional study was conducted in Ghana in 2023 among 196 adult surgical patients. It shows that about 99.5% of the participants experienced some degree of pain, and 96% of the respondents were satisfied with their overall postoperative pain management. Satisfaction is enhanced by creating a good relationships between patient and health professionals, providing patients with adequate and useful information about their pain management, and give the opportunity for patients to participate in decisions regarding to their postoperative pain management(17).

Overall, different studies' results show a strong association between effective pain control and satisfaction; other studies argue that satisfaction may remain high even when pain persists, reflecting differences in pain management systems, communication practices, and patient expectations. The following subtopics review the factors that contribute to variation in patient satisfaction with postoperative pain management.

2.2. Socio-Demographic Factors with Postoperative Patient Satisfaction

Sociodemographic characteristics, including sex and age, have been found to influence how the patients perceive their pain and reports. Studies have reported that men tend to report pain less likely than women. Furthermore, research reports that older patients experience a higher rate of chronic pain than younger patients, this due to different comorbidities comes with increasing age(24).

For instance, a study conducted in Lebanon in 2018 found that there was a significant association between older age and lower patient satisfaction with pain management; this may be due to older patients have have a lower pain tolerance and tend to have more medical and cognitive issues which may negatively affect their satisfaction with postoperative pain treatment(15).

A study conducted in Ghana found that female participants (56.6%) were more satisfied with their pain management than males. In comparison, another study conducted in Ethiopia found that male patients reported higher satisfaction with postoperative pain management than females (17,25). This controversy suggests that the influence of gender on satisfaction with postoperative pain management was not well understood and may vary depending on the situation. Further research is needed to elucidate these discrepancies and other potential factors that could explain the differences across settings.

In most studies, the socio-demographic factors including age, sex, and educational level were not significantly associated with patient satisfaction with postoperative pain managements(22,26).

2.3. Patient-related and clinical factors with postoperative patient satisfaction of postoperative pain management

A prospective study was conducted in Bangladesh in 2024 among 190 adult patients, identifying several patient and clinical factors that affect patient satisfaction. The use of a multimodal analgesia technique, being ASA I, and the patients who timely get analgesia reported higher satisfaction. Patients with mild postoperative pain (VNRS 0–3), specifically those with no pain, are more satisfied (AOR = 6.7; 95% CI: 1.54–29.7). Most of the patients who reported greater satisfaction likely experienced a smoother recovery(27).

An institution-based cross-sectional study was conducted at the University of Gondar in 2020. The results showed that ASA status, pain intensity, method of analgesia, waiting time to get analgesia, and receiving adequate information about pain were significantly associated with patient satisfaction with pain management services. The key notable finding was that patients who were received information about pain management were 8.9 times more satisfied (AOR 8.97; 95% CI: 3.6–21.90). Additionally, the use of different types of nerve blocks significantly increased satisfaction levels; patients who received nerve blocks were more than 9 times as likely to be satisfied (AOR = 9.14; 95% CI: 3.93–20.86) (21).

A Cross-sectional study design conducted at Yekatit 12 Hospital Medical College, 2024. A total of 195 study participants were included. The study found that patients who reported alcohol use, who were given pre-operative analgesics, are more likely satisfied with postoperative pain management. The key finding was that patients who received preoperative analgesics showed a positive association with patient satisfaction; they were 2.68 times more likely to be satisfied (AOR = 2.68; 95% CI: 1.02–7.05), indicating the value of proactive pain control (20).

2.4. Post-operative pain experience and communication factors with patient satisfaction of postoperative pain management.

The availability of staff who valued pain management or expressed an intention to provide relief positively influenced patient satisfaction. The significant relationship between satisfaction and preoperative pain and patient expectation about postoperative pain has shown inconsistent findings. While being Optimistic had a positive influence, whereas preoperative anxiety, presence of mood disturbance with pain, and unwanted side effect analgesic medication negatively influence patient satisfaction. Higher satisfaction was linked to perceived an effective pain relief. Similarly, experiencing lower pain intensity was associated with higher patient satisfaction, although in some reports, this association appeared weak(28).

The observational, predictive study was conducted in Jordan in 2025 on 300 orthopaedic surgery patients. It shows that patients experienced significant pain in the first 24 h post-surgery, with an average maximum pain score of 8.52 and a minimum of 6.74, despite this patient having a moderate to high level of satisfaction (7.86/10). Higher satisfaction was associated with PCA use, non-pharmacological methods, and information on pain management options. On the other hand, the side effects of opioid use, such as nausea (vomiting), have been found to negatively affect patient satisfaction (30).

In the above study, it didn't directly measure how preoperative patient expectations for postoperative pain management affect patient satisfaction. Also, the degree to which the side effects of opioids affect patient satisfaction is not clearly stated in the study results.

A prospective cohort study was conducted in Australia in 2012 on 476 patients. A total of 190 patients. The study shows that the strongest factors for patient satisfaction were adequate analgesia (odds ratio [OR] = 7.8, 95% CI = 4.9 to 12.4), as defined by a reduction in postoperative pain intensity score and satisfaction levels more than 7 times higher than baseline. In addition, specific pain communication with clinicians was more than two times likely to be satisfied (OR = 2.3, 95% CI = 1.3 to 4.1). Oral opioid administration as rescue analgesia is critical to satisfaction (OR = 2.0, 95% CI = 1.1 to 3.4)(29).

A descriptive prospective study was conducted in Thailand in 2019 to identify factors influencing patient satisfaction among 280 surgical patients. The study found that lower VNRS was significantly associated with higher patient satisfaction, indicating that postoperative pain intensity remains a determinant of satisfaction. Similarly, use of PCA reduces the use of opioids and the side effects; the absence of vomiting is statistically linked with better patient satisfaction with postoperative pain management (OR = 0.327, P 0.003)(30).

A qualitative study using a phenomenological approach conducted in Britain in 2020 found that patient satisfaction with pain management is affected by good communication and information sharing, provision of adequate pain management, and a consistent companionate support of health professionals. In another cross-sectional study conducted in Beirut (Lebanon), Proper pain assessment and asking an HCP about pain condition significantly increased patients' satisfaction (AOR=30.403) (15,31).

A cross-sectional study conducted in Ghana in 2023 found that Duration of pain was negatively associated with patient satisfaction regarding to pain treatment ($r = 0.200$, $p\text{-value} = 0.005$). In contrast higher expectations for postoperative pain treatment ($r = 0.221$, $p\text{-value}=0.002$), adequacy of pain relief in the first 48 h ($r = 0.439$, $p\text{-value}<0.001$) and important and helpful information received ($r = 0.158$, $p\text{-value}=0.027$) were positively associated with satisfaction(17).

A descriptive cross-sectional study was conducted in Ghana in 2021 among 138 surgical patients. The type of analgesia administered, method of analgesic techniques used, and the patient ability to request additional analgesia were positively related with patient satisfaction. unexpectedly, the patients who get a full and adequate information from health professionals about their pain managements were statistically significant negative association with satisfaction(32).

An institution-based cross-sectional study was conducted in 2022 at Tikur Anbessa Specialised Hospital among 335 adult patients, using the modified APS-POQ to collect patient responses. Pain intensity, analgesic modality, time to get their requested analgesia, and receiving useful information about pain were significantly related with patient satisfaction (26).

In another a study in Carolina, 2013 results reported that the association between level of pain severity experienced by the patient and overall satisfaction with pain management were not significant (Spearman's rank correlation coefficient = -0.31 ; 95% confidence interval = -0.79 to 0.39). The majority of patients were satisfied with their overall pain management, irrespective of their pain severity score(33).

while, level of pain intensity remains a major determinant factor in patient satisfaction with patient control analgesia, patient satisfaction with postoperative pain management is multifaceted and can't be determined by pain intensity alone. Satisfaction with postoperative pain managements in the patient controlled analgesia can be enhanced by addressing different environmental factors, including as the frequency and level of out bed patient movements, management of unwanted side effects, and appropriate usage PCA usage(34).

Those findings indicate that, even when pain intensity and unwanted side effects are taken into account, patient participation and interpersonal communication are crucial factors of patient satisfaction with postoperative pain management.

2.5. Conceptual framework

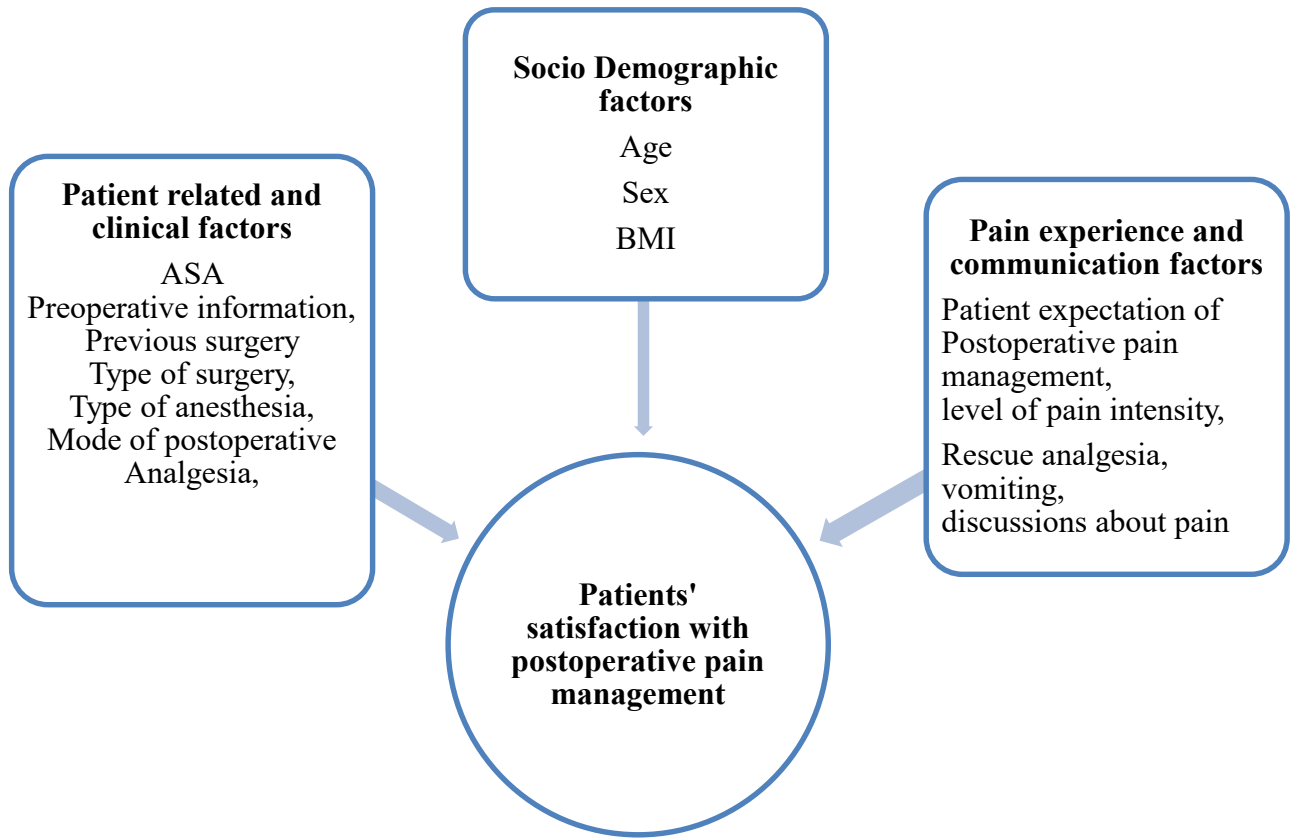


Figure 1: Conceptual framework developed by the investigator based on the literature reviews (17,20,21,26,27,30,31)

3. OBJECTIVE

3.1. General objective

- ✓ To assess the level of patient satisfaction with postoperative pain management and its associated factors in adult elective surgical patients at ATRH from July to September 2025 GC.

3.2. Specific objectives

- ✓ To determine the level of patient satisfaction with postoperative pain management in adult elective surgical patients at ATRH from July to September,2025 GC.
- ✓ To identify factors affecting patient satisfaction with postoperative pain management in adult elective surgical patients at ATRH from July to September 2025 GC.

4. METHODOLOGY

4.1. Study Area

The study was conducted in Asella Teaching and Referral Hospital, located in Asella Town. It is located in the Oromia Region, Arsi zone, and 175 km southeast of the capital city of Addis Ababa. The hospital was established in 1964 G.C. and Rebuilt in 1992 G.C. with Italian Government cooperation, with a capacity of 250 beds. Starting in 2014, the hospital was re-established under Arsi University. The hospital serves an estimated 3.5 million people across the Arsi zone and surrounding areas in south-east Ethiopia. ATRH has evolved into a multidisciplinary teaching institution offering specialised services in general surgery, obstetrics and gynaecology, paediatrics, internal medicine, anaesthesia, and intensive care. It has six operating theatres. According to the hospital's annual report, more than 3,500 patients underwent surgery each year. Following the launch of the MSc program in anaesthesia, the routine use of ultrasound-guided nerve blocks has been introduced as part of standard anaesthesia for surgery and pain management as multimodal analgesia in the operating room.

4.2. Study design and period

An institution-based cross-sectional study design was conducted from July to September, 2025 GC.

4.3. Source and study population

4.3.1. Source population

All adult surgical patients who underwent elective surgery at ATRH during the study period.

4.3.2. Study population

Adult elective surgical patients who met the inclusion criteria at ATRH during the study period.

4.4. Inclusion and exclusion criteria

4.4.3. Inclusion criteria

- ✓ Surgical patients aged 18 years and above who are admitted to the surgical ward.
- ✓ ASA I, II and III

4.4.4.Exclusion criteria

- ✓ Those patients who were not alert enough to respond
- ✓ Patients with chronic pain
- ✓ Psychiatric patients
- ✓ Critical patients who need postoperative ICU admission

4.5. Sample size determination and Sampling technique

4.5.5.Sample size for the general objective

Sample size was determined by the single population proportion formula for the general objective, with the following assumptions made: level of confidence 95%; $Z_{\alpha/2}=1.96$, a 5% margin of error ($d=0.05$), and proportion of previous study done at Tikur Anbessa Specialised Hospital was (74.5%)(26).

The following sample size determination formula was used

$$n = \frac{Z_{\alpha/2}^2 P(1 - p)}{w^2}$$

Where n = minimum sample size required

P = from a previous study conducted at Tikur Anbessa Specialised Hospital.

Z= the standard normal variable with 95% CI at $\alpha = 0.05$ =1.96

w = the standard error = 0.05

$$n = \frac{Z^2 P (1-p)}{w^2}$$

$$w^2$$

$$n = \frac{(1.96)^2 0.74(1-0.74)}{(0.05)^2} = 296$$

$$(0.05)^2$$

However, the total population that was admitted within the study period is less than 10,000, so the adjustment formula is used as follows: $Nf=n/[1+(n/N)]$

Where n = sample size for a population of size above 10,000 people

N = average number of patients scheduled for surgery in the past three months from the log book.

Nf = the final required sample size (adjusted sample size).

Therefore, $Nf = 296 / (1 + (296/205)) = 123$

By considering non-respondents' patients 10% the sample size would be 135

4.5.6. Sampling Technique

Situational analysis taken from adult elective surgery, log books including general, orthopaedics, urology, and head and neck surgeries, and about 205 elective adult surgeries were done in the last 3 months. Participants were selected with $K_{th} = 205/135 = 1.52 \sim 2$

The total sample size was selected by using a systematic random sampling technique. The sampling interval (k) was set to 2; every second patient on the list was selected. Using the Lottery method for the first participant registration list from the operating theatre as a sampling frame.

4.6. Study variables

4.6.7. Dependent Variable

- ✓ Patient satisfaction with postoperative pain management

4.6.8. Independent Variables

- ✓ **Sociodemographic Factors:** Age, sex and BMI.
- ✓ **Patient-related and clinical factors:** ASA, Preoperative information, previous surgery, Type of surgery, Type of anesthesia, Mode of Analgesia
- ✓ **Pain experience and communication factors:** Patient expectation of postoperative pain management, level of pain intensity, Rescue analgesia, vomiting, and discussions about pain

4.7. Operational definitions

Satisfaction: subjective response, when their reported satisfaction score meets or exceeds the computed threshold mean(≥ 18), was categorised as satisfied, and those scoring below the threshold mean were classified as dissatisfied based on the demarcation threshold formula(7).

Acute postoperative pain: pain present in a surgical patient within the first 24 hours after surgery and typically subsides within 48 hours.

VNRS: is a valid pain intensity assessment tool that asks patients to rate their pain on a verbal descriptor scale, with 0 indicating no pain and 10 indicating severe pain (35).

Mild pain – when the VNRS score is one to three

Moderate pain – when the VNRS score is four to six

Severe pain – when the VNRS score is greater than or equal to seven(4).

Adult elective surgical patient: Any individual aged 18 years or older who will undergo a planned (elective) surgical procedure under anaesthesia and transferred to the surgical ward for postoperative care(36,37).

Multimodal analgesia: the combination of systemic analgesics and regional analgesics given for perioperative pain management(1).

Pain management education: providing patients with helpful information about their pain treatment, and allowing patients to participate in decisions about their pain management.

Systemic analgesia: opioids and/ or non-opioid analgesic drugs given for postoperative pain

Waiting times (in minutes): the time from when the client is asked for pain medication to when they receive it.

4.8. Data collection tools and procedures

The Revised American Pain Society Patient Outcome Questionnaire (APS-POQ-R) was used for data collection (38). The survey consists of questions that assess various aspects of the patient's postoperative pain experience. Pain intensity was measured using verbally administered numerical rating scales (VNRS) with response options ranging from 0 to 10. For the satisfaction response six, a 5-point Likert scale question was administered. The data were collected using the KoboToolbox. The tool was translated into Afaan Oromo and Amharic from English using forward and backward translation methods to ensure cultural and linguistic appropriateness.

Data were collected by three trained MSc anaesthesia students using the electronic KoboToolbox. Before data collection, they received training on interview techniques, ethical issues, and questionnaire administration. The patient interview was conducted 24 hours after surgery, focusing on the patient's experience with postoperative pain management following their operation. Anaesthetic charts were reviewed to collect supplementary information on pain management interventions and the anaesthesia techniques used.

4.9. Data processing and analysis

The data were automatically checked for completeness, then downloaded and transferred to SPSS version 26. Nominal variables were summarised using frequencies and percentages; categorical data were presented as numbers and frequencies (percentages), and continuous data were presented as mean $\pm$ SD or median (IQR) where appropriate—the patient's satisfaction questions were assessed on a 5-point Likert scale, and their internal consistency was tested using Cronbach's alpha. The overall results were dichotomised into satisfied and dissatisfied groups based on the demarcation threshold formula. = $[\text{total highest score total} - \text{lowest score}]/2] + (\text{total lowest score})$. The model of fitness was assessed using the Hosmer-Lemeshow goodness-of-fit test, and the magnitude and associated factors were analysed using binary and multivariable logistic regression. Variables with a P-value < 0.2 in the binary logistic regression were included in a multivariable logistic regression. Before performing multivariable logistic regression, multicollinearity among independent variables was assessed using variance inflation factors (VIFs). Finally, p-values of 0.05 or less were considered statistically significant. AORs with 95% CIs were calculated to determine the strength of the association between the dependent variable and the independent variables. Finally, the result was presented in narrative, graph and table forms.

4.10. Data quality assurance

The principal investigator provided a one-day orientation to the data collectors on the study objectives, the electronic data collection instrument, and procedures for facilitating data collection. At the end of each day, the submitted forms were reviewed by the principal investigator for completeness, consistency, and accuracy, and then stored securely. A pretest study was conducted at Adama Hospital Medical College on 5% of the sample size to test questionnaire clarity.

4.11. Ethical consideration

Ethical clearance was obtained from the Research Committee of Arsi University College of Health Science. With Reference Number A/U/H/S/C/120/962/17 and Project Protocol Number CoHS/R/188/2025. Permission was obtained from the Department of Anaesthesia to conduct the research. After explaining the aim and benefits of the study, written and verbal informed consent was obtained from each study participant, and their confidentiality was guaranteed throughout the study.

4.12. Dissemination plan

The copies of the final results will be disseminated to the Arsi University College of Health Sciences. The findings of this study will be published locally and presented in the library for learning purposes.

5. RESULT

5.1. Demographics Characteristics of Study Participants

A total of 135 patients were enrolled in the study, with a 100% response rate. All patients' information was complete, with no missing data. We have checked the normality of continuous variables (Age and BMI) using the Shapiro-Wilk test. Both had $p < 0.001$, so they were not normally distributed. Most of the respondents, 69 (51.1%), were male. Forty-five (33.3%) of the participants were in the 30 to 44 years age group, with a median age of 40 (IQR=32) years. In addition, 68 (50.4%) participants had a normal BMI of 18.5-24.9 kg/m², with a median BMI of 21 kg/m² (IQR=6.4). (Table 1)

Table 1: Socio-demographic characteristics of surgical patients who underwent elective surgery at ATRH, 2025

Variable		Frequency (135)	Percent %
Sex	Male	69	51.1
	Female	66	48.9
Age	18-29	31	23.0
	30-44	45	33.3
	45-59	20	14.8
	>=60	39	28.9
BMI	<18.5	39	28.9
	18.5-24.9	68	50.4
	25-29.9	24	17.8
	>=30	4	3.0

5.2. Clinical Characteristics of Study Participants

117 (86.7%) participants were classified as ASA class I, and 28 (20.7%) had a history of previous surgery. Only 48 (35.6%) participants had preoperative information about postoperative pain management. Half of the cases (68, 50.4%) were done under GA, 47 (34.8%) under SA, 17 (12.6%) with PNB, and 3 (2.2%) with EA (Figure 2). Of those participants, 68 (50.4%) received multimodal analgesia with nerve blocks, with variation across surgical sites (Figure 3).

Of the total 101 participants (74.8%), the surgical site was on the abdomen in 17 (12.5%), on the head and neck in 17 (12.5%), and on the extremity in 17 (12.5%). All participants were admitted to the surgical ward postoperatively (Table 2).

Table 2: Frequency distribution of clinical characteristics among adult elective surgical patients at ATRH,2025

Variable		Frequency	Percent (%)
ASA status	ASA I	117	86.7
	ASA II	17	12.6
	ASA III	1	.7
Previous surgery	No	107	79.3
	Yes	28	20.7
Preoperative information about postoperative pain management	No	87	64.4
	Yes	48	35.6
Surgical site	Abdomen	59	43.7
	Head and neck	17	11.9
	Lower abdomen	48	35.2
	Lower extremity	8	5.9
	Upper extremity	9	6.7
Type of anesthesia	EA	3	2.2
	GA	68	50.4
	PNB	17	12.6
	SA	47	34.8
Mode of analgesia	Systemic only	67	49.6
	Multimodal with PNB	68	50.4

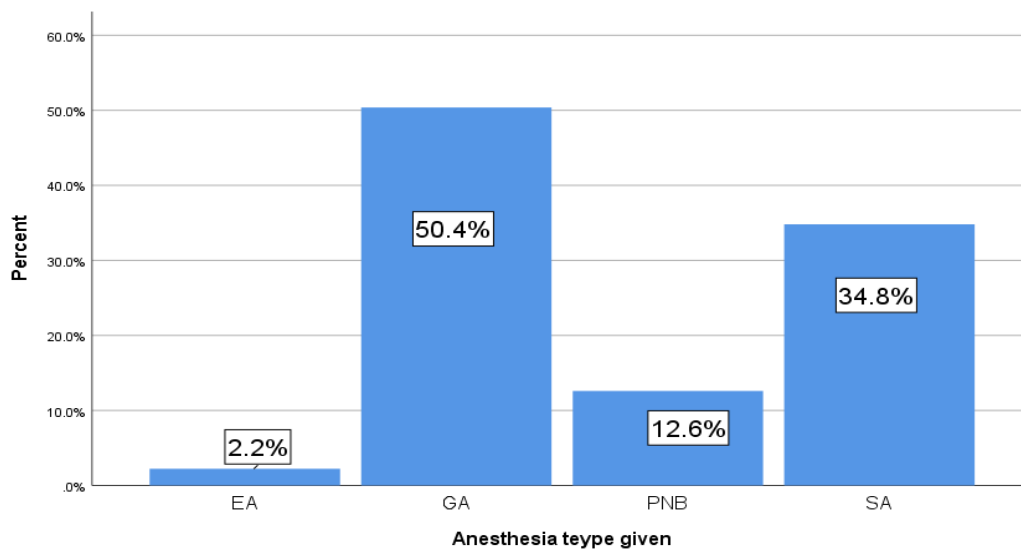


Figure 2: Frequency distribution of type of anesthesia used among adult elective surgical patients at ATRH 2025.

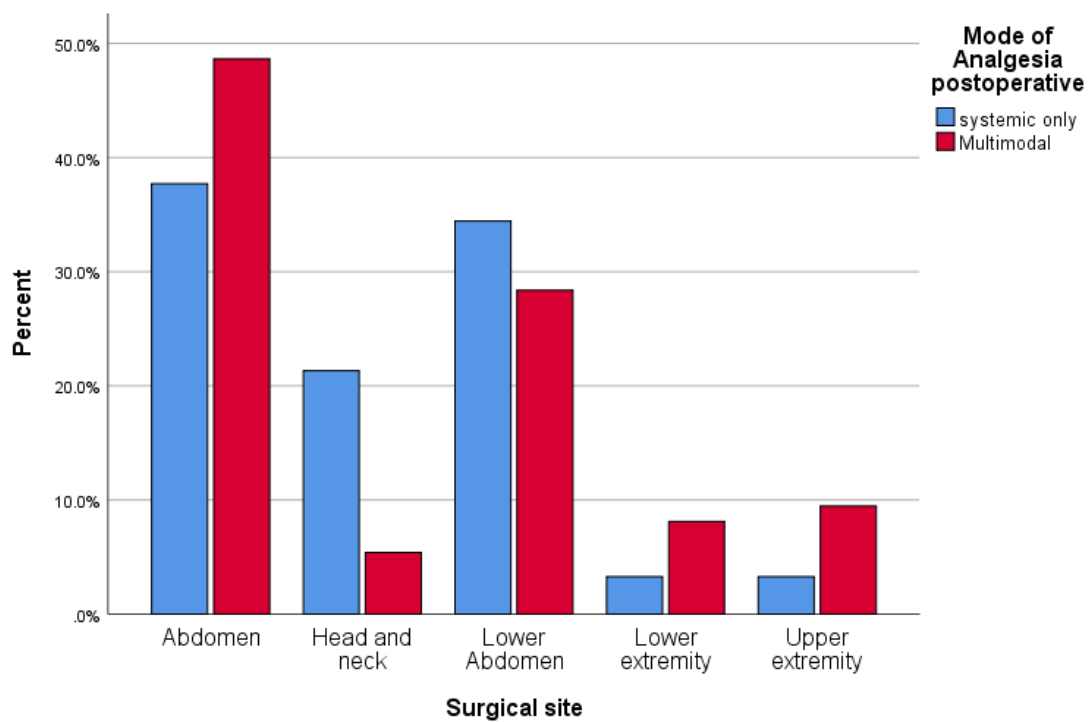


Figure 3: Mode of postoperative analgesia distribution in different surgical procedures among adult elective surgical patients at ATRH.

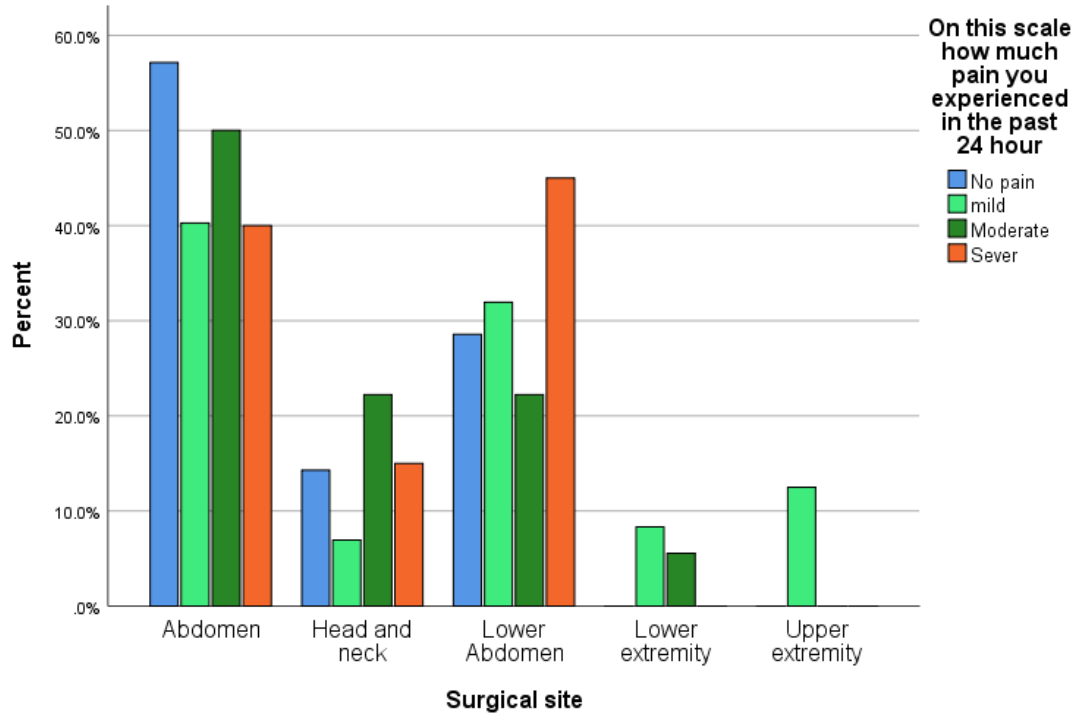


Figure 4: Postoperative pain intensity among different surgical site of adult elective surgical patients at ATRH,2025

5.3. Postoperative Pain Experience

Five questions were asked 24 hr after surgery regarding the patient's pain experience. Include the worst current pain experienced during the first 24 hr after surgery, and the pain interference with their sleep and with in-bed and out-of-bed activities. All questions were measured on an NRS scale from 0 to 10, with 0 = no pain and 10 = worst pain.

Overall, 128 (94.8%) patients experienced varying degrees of pain; of these, 72 (53.3%) experienced mild, 36 (26.7%) moderate, and 20 (14.8%) severe pain, while only 7 (5.2%) experienced any pain within the first 24 hr after surgery. Of the participants, 50 (37.03%) and 39 (28.9%) reported no or mild interference of sleep with pain, respectively, and only 5 (3.7%) were severely interfered with by pain within 24 hr of surgery. Of the total, most participants (109 [80%]) and 119 (88%) reported that the pain interfered with their in-bed and out-of-bed movements, respectively, on different scales.

After 24 hr of the surgeries, the pain experienced by the participants was of different degrees. Most participants, 86 (63.7%), experienced mild surgical site pain; 13 (9.6%) had no pain; and 29 (21.5%) and 7 (5.2%) experienced moderate to severe surgical site pain, respectively.

Of the total participants who transferred to the surgical ward postoperatively, 126(93%) were requested rescue analgesia within the first 24 hr after surgery, and 9 (7%) never requested any rescue analgesia. Of those who requested rescue analgesia, 75 (55.5%) waited 30-60 minutes, 47 (34.8%) received rescue analgesia within 30 minutes, and four didn't receive rescue analgesia postoperatively within 24 hr of surgery. Almost all participants received similar IV or IM rescue analgesia; 69(51.1%) took both tramadol IV and diclofenac IM, 28(20.7%), and 18(13.3%) took diclofenac and tramadol alone, respectively, and none of them used any non-pharmacological methods. From those who took rescue analgesia only 32(23.2%) of them experienced different side effects, 24(17.8) had nausea, 5(3.7%) drowsiness and 3(2.2%) had experienced dizziness.

Concerning expectations towards to postoperative pain management, 36(26.7%) of the respondents reported high expectations, 28(20%) moderate expectations, 36(26.7%) low and 35(25.9%) reported no expectations (Table 3)

Table 3: The frequency distribution of postoperative pain experience of adult elective surgical patients at ATRH,2025.

Variable		Frequency (135)	Percent (%)
How much pain have you experienced in the past 24 hours?	No pain	7	5.2
	mild	72	53.3
	Moderate	36	26.7
	Sever	20	14.8
How has pain interfered with staying asleep after surgery?	none	41	30.3
	mild	50	37.03
	moderate	39	28.88
	severe	5	3.7
How pain has interfered with movement in bed, after surgery	none	26	19.3
	mild	81	60.0
	moderate	23	17.0
	severe	5	3.7
How pain has interfered with movement out of bed, after surgery	none	16	11.9
	mild	56	41.5
	moderate	47	34.8
	severe	16	11.9
How much pain you have right now	none	13	9.6
	mild	86	63.7
	moderate	29	21.5
	severe	7	5.2
What was the longest time you had to wait to get pain medicine	Never asked	9	6.7
	15 minutes or less	6	4.4
	15-30 minutes	15	11.1
	30-60 minutes	75	55.6
	More than an hour	26	19.3
	Never given	4	3.0

Rescue analgesia given (pharmacology methods) to relieve your pain	Tramadol	18	13.3
	Diclofenac	28	20.7
	Both	69	51.1
Any Side Effects of Rescue Analgesia Drugs	Dizziness	3	2.2
	Drowsiness	5	3.7
	Nausea and vomiting	24	17.8
	None	103	76.3
To what extent did you expect that your postoperative pain would be well managed?	High expectation	36	26.7
	Low expectation	36	26.7
	Moderate expectation	28	20.8
	No expectation	35	25.9

5.4. Patient satisfaction

Patient satisfaction with postoperative pain management was assessed using a six-item questionnaire. The items were responsiveness to pain reports, adequacy of information provided by the health professionals, discussion with medical staff about pain, timeliness of response to requests for pain medication, level of pain relief obtained, and willingness to recommend the same treatment for self or friends. Each item was rated on a modified 5-point Likert scale. The total score was obtained by summing all six items, which ranged from 6 to 30. The responses were dichotomised into high satisfaction and low satisfaction (dissatisfied) using the demarcation formula, with scores above the cut-off (≥ 18) classified as satisfied and those below as unsatisfied. The questionnaire demonstrated excellent internal consistency (Cronbach's $\alpha = 0.892$), confirming that the items reliably measured overall satisfaction.

Of the participants, 114 (84.4%) were satisfied with their pain management, and 21 (15.6%) were dissatisfied, with a mean $\pm$ SD total score of 22.57 ± 4.7 . Among the six questions, 'willingness to recommend the same treatment for self or friends' reported the highest satisfaction; the majority of patients (68, 50.4%) were very satisfied, with a mean $\pm$ SD score of 4.25 ± 0.99 (range 1-5). Regarding the question 'discussion with medical staff about pain', reported lower satisfaction with a mean $\pm$ SD score of 2.99 ± 0.62 .

Table 4: Means and Standard deviation of the 5-point Likert questions asked for patient satisfaction with postoperative pain management among elective surgical patients at ATRH,2025.

Variables	Mean $\pm$ SD	Min-Max
How you satisfied with the way a medical staff adequately discuss about the pain with you	$2.99 \pm .617$	1 - 5
How you satisfied with the medical staff giving of analgesic drugs when you complain the pain	$3.59 \pm .736$	1 - 5
How you satisfied with the way you responded to your reports of pain	3.93 ± 1.090	1 - 5
How you satisfied with information received about pain management	3.66 ± 1.229	1 - 5
How much relief you obtained (after rescue analgesia)	$4.16 \pm .992$	1 - 5
Would you recommend the same treatment for yourself and friends	$4.25 \pm .990$	1 - 5

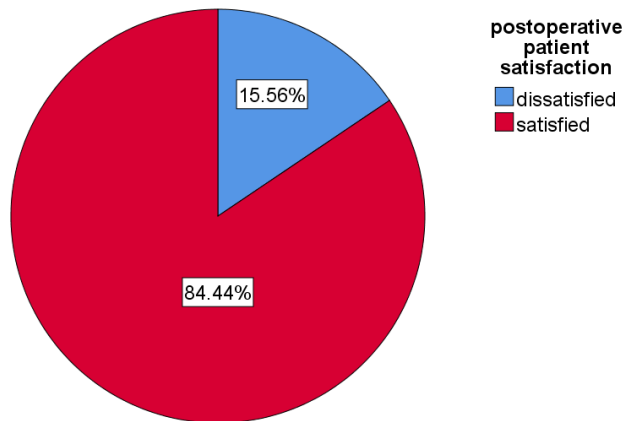


Figure 5: Overall patient satisfaction with postoperative pain management at ATRH, 2025.

5.5. Factors Associated with Patients' Satisfaction with Pain Management

The association between participants' categorical independent variables and overall satisfaction was examined using Bivariate and multivariate Binary logistic regression models, and the strength of the relationships was quantified using Odds ratios (ORs) and 95% confidence intervals. Among those variables, preoperative information, surgical site, Mode of analgesia, pain experienced within 24 hours, pain interference with sleep, Rescue analgesia, and side effects of rescue analgesia were found to be significantly associated with overall satisfaction at p-value <0.2

Table 5: Bi-variable logistic regression analysis result of patient satisfaction with postoperative pain management at ATRH, 2025

Variables		Satisfied (%)	Dissatisfied (%)	COR (95% CI)	P value
Preoperative information	Yes	46(40.4%)	2(9.5%)	1	
	No	68(59.6%)	19(90.5%)	0.156(0.035-0.7)	0.015
Surgical site	Abdomen	50(43.9%)	9(42.9%)	1.58(0.283-8.9)	0.599
	Head and neck	10(8.8%)	7(33.3%)	0.48(0.065-2.582)	0.341
	Lower abdomen	39(34.2%)	3(14.3%)	3.7(0.522-26.415)	0.19
	Lower extremity	8(7%)	0(0%)	1.2(0.87-4.54)	0.99
	Upper extremity	7(6.1%)	2(9.5%)	1	
Mode of postoperative analgesia	Systemic only	43(37.7%)	18(85.7%)	1	
	Multimodal with PNB	71(62.3%)	3(14.3%)	9.9(2.75-35.7)	0.000
Pain experienced within 24 hr	No pain	7(6.1%)	0(0%)	2.06(1.77, 4.15)	0.27
	Mild	69(60.5%)	3(14.3%)	12.38(2.83-54.2)	0.001
	Moderate	25(21.9%)	11(52.4%)	1.22(0.383-3.906)	0.733
	Sever	13(11.4%)	7(33.3%)	1	
Pain interference of sleep	None	39(34.2%)	2(9.5%)	1	
	Mild	46(40.4%)	4(19.04%)	0.60(0.08-3.84)	0.67
	Moderate	25(21.9%)	14(66.7%)	0.25(0.145-0.832)	0.000
	Severe	4(3.5%)	1(4.76%)	0.28(0.15-2.632)	0.32
Rescue analgesia	Yes	103(90.4%)	15(71.4%)	3.7(1.27-11.65)	0.23
	No	11(9.6%)	6(28.6%)	1	

5.6. Multivariable Logistic Regression with overall satisfaction

Before performing Multivariable logistic regression, multicollinearity among independent variables was assessed, and all had VIF values less than 2. The model of fitness was assessed using the Hosmer-Lemeshow goodness-of-fit test, with an A-p-value of 0.99, indicating adequate fit. After adjusting for confounders, in the multivariable logistic regression analysis, mode of postoperative analgesia and pain interference with sleep were significantly associated with satisfaction (Table 6).

The result of multivariable binary logistic regression indicated that patients who received multimodal analgesia with PNB for postoperative pain management were 2.4 times more likely to be satisfied than those who received systemic-only analgesia (AOR=2.43, CI: 1.39-8.45). On the other hand, patients who experienced moderate sleep interference due to pain had 55% lower odds of being satisfied than those without sleep interference (AOR=0.45, CI: 0.21-0.96).

Table 6: Multivariate Binary Logistic Regression result of patient satisfaction with postoperative pain management at ATRH, 2025

Variables		Satisfied (%)	Dissatisfied (%)	COR (95% CI)	AOR (95% CI)	P value
Mode of postoperative analgesia	Systemic only	43(37.7%)	18(85.7%)	1		
	Multimodal with PNB	71(62.3%)	3(14.3%)	9.9(2.75-35.7)	2.43(1.39-8.45)	0.01
Pain interference of sleep	None	39(34.2%)	2(9.5%)	1		
	Mild	46(40.4%)	4(19.04%)	0.60(0.08-3.84)	0.5(0.35-9.42)	0.56
	Moderate	25(21.9%)	14(66.7%)	0.25(0.145-0.832)	0.45(0.21-0.96)	0.043
	Severe	4(3.5%)	1(4.76%)	0.28(0.15-2.632)	0.42(0.24-3.23)	0.41

6. DISCUSSION

This study was designed to assess the patients' satisfaction and factors associated with postoperative pain management among elective surgical patients at ATRH. We adopted the modified APS-POQ-R Questionnaire, which has been considered a valid research tool for assessing patient satisfaction and postoperative pain severity(38).

The overall study results for the total of 135 patients' satisfaction with their postoperative pain management were 114 (84.4%). This indicates that the majority of patients were satisfied with the pain relief care they received after surgery. The satisfaction level observed in our study is relatively high compared with previous prospective studies conducted in Ethiopia, India, Egypt, and Nigeria(10,19,20,22,23,39,40). This higher satisfaction may be explained by differences in postoperative pain management practices, such as the routine use of multimodal analgesia and postoperative patient follow-up, which improve pain relief and patient satisfaction.

On the other hand, the finding of this study was lower than the result reported in Ghana, where 96% of patients were satisfied with their postoperative pain management. This result is due to the compassion of pain management service teams, the high rate of pain education, effective communication, and superior use of analgesics(17).

The multivariable analysis showed that postoperative pain management was a significant factor associated with patient satisfaction. The factors identified were postoperative Mode of analgesia and moderate pain interference with sleep.

Our study found that patients who received Multimodal postoperative analgesia with PNB were 2.4 times more likely to be satisfied than those who received systemic analgesia only (AOR = 2.43, CI = 1.39-8.45). This result is in line with studies conducted in Ethiopia at Addis Abeba, Tikur Anbesa, and Gondar, where patients who received nerve blocks for postoperative pain management were 4 and 9 times more satisfied than those who did not (20,21). This result is also consistent with other studies showing that the use of multimodal analgesia is positively associated with higher patient satisfaction(27,29). In addition, a survey conducted in Seoul, Korea, found that patients in the group whose acute postoperative pain was well managed had higher satisfaction than those whose pain was not well managed(9).

This higher satisfaction may be due to the use of multimodal analgesia, especially nerve blocks, which enhance quality and provide better pain relief with reduced systemic side effects by minimising dosing.

In contrast, research done in India reported that patients were more satisfied with IV patient-controlled analgesia than with multimodal analgesia with epidural. This discrepancy may be attributed to variations in analgesic dosing for that group of patients, the reluctance of patients to self-administer, and the discomfort of the epidural catheter(22).

This study found that moderate sleep interference with untreated acute postoperative pain was a significant predictor of patient satisfaction. Our finding indicates that patients who experienced moderate sleep interference due to pain had 55% lower odds of being satisfied than those without sleep interference (AOR=0.45, CI: 0.21-0.96). This result aligns with a study conducted in Ghana, which found that untreated pain could interfere with their sleep and significantly affect patient satisfaction. This could be due to when the patient's daily activities, including sleep, are interfered with by untreated pain, which can negatively impact their emotions and reduce overall satisfaction(17).

In contrast to this result, a study done in India showed that although acute postoperative pain has significant interference with their daily activities, quality of sleep, and emotions due to poor pain management, patients' satisfaction with pain management was relatively high. In addition, a study conducted in Ghana found that patients were highly satisfied despite persistent acute postoperative pain. Which could be that patients expect that pain is inevitable after surgery(19,32).

In our study, several factors reported as significant were not found to be statistically significant. Some commonly examined characteristics were sociodemographic characteristics (15,17,22), ASA status, pain intensity, waiting time for rescue analgesia, and the pain information discussed with patients (21,26,27,29–31,41).

6.1. Limitations of the study

This study was limited by its relatively small sample size and single-center design. Because only adult elective surgical patients were included, the findings may not be generalizable to pediatric, gynecologic, obstetric, outpatient, or emergency populations. In addition, the study design's weaknesses and the subjectivity of patient responses may affect the study's results.

7. CONCLUSION AND RECOMMENDATION

7.1. Conclusion

Overall, patient satisfaction with postoperative pain management was relatively high (84.4%) compared with other Ethiopian studies. Postoperative analgesia mode and moderate pain interference with sleep were significantly associated with patient satisfaction in different ways. Patients who received multimodal analgesia with nerve blocks reported higher satisfaction than those who did not. The presence of sleep interference with untreated pain was associated with lower satisfaction. This finding suggests that managing acute postoperative pain is essential to enhance patient satisfaction with postoperative pain management.

7.2. Recommendation

- ✓ For clinical practice
 - Multimodal analgesia with regional nerve blocks should be administered for all major surgeries as postoperative pain management.
 - Health professionals should use a different class of drugs as multimodal analgesia, including opioid for rescue analgesia, to enhance analgesia quality and optimise rescue analgesic timing in the ward.
- ✓ For policy makers
 - Implement pain management protocol.
 - Provide training on enhancing postoperative pain management knowledge.
- ✓ For future research
 - Conduct a multicenter study with a large number of participants.

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9. ANNEXES

9.1. Annexe 1: Information Sheet and Consent Form

Arsi University department of Anesthesia

Dear Participant,

Hello, my name is _____. I am collecting data on behalf of Natnael Tesfaye, a second-year MSC student at Arsi University College of Health Sciences, Department of Anaesthesia. Currently, he is researching the Level of Patient Satisfaction with Postoperative Pain Management and associated factors in Adult elective surgical Patients at ATRH. He has received permission from the Department of Anaesthesia, Arsi University College of Health Science, to conduct the study.

You have been selected to be one of the participants in this study. Your data was kept strictly confidential and managed with the utmost ethical care. If you feel uncomfortable, you can stop your participation in this study at any point.

The information that you provided was kept confidential by using only code numbers and locking the data. Only members of the research team will have access to the non-coded data, and the data will not be used for any purpose other than the study. Your willingness and active participation are essential for the success of this study.

For further clarity, you can contact the investigator by:

Phone: 251946940413

Email: tesfayenatnael8@gmail.com

Are you willing to participate in the study, please? A) YES B) NO

Thank you in advance for your time and participation in this study

Annexe 2: Questionnaire

Instruction: For each question, please circle the letter of the alternative(s) that best fit the response, or fill in the blank space provided.

Part I: Patients ' Socio-demographic Characteristics

1. Age (in years): ____ in years
2. Gender: A. Male B. Female
3. BMI _____

Part II: Preoperative Factors

4. ASA status A. ASAI B. ASA II C. ASA III
5. History of previous surgery
6. Preoperative information about postoperative pain management

Part III: Intraoperative Factors

7. Surgical site: A) Head and neck B) Abdominal C) upper extremity D) lower extremity
8. Anaesthesia type given: A) GA: B) SA C) PNB
9. Mode of postoperative Analgesia A. Opioids B. NSAIDS D. PNB E. Multi-modal analgesia

Part IV:- Postoperative Factors

Revised American Pain Society Patient Outcome Questionnaire Rate with VNRS (35)

301 On this scale, how much pain did you experience in the past 24 hours? ____

0 1 2 3 4 5 6 7 8 9 10

302 How has pain interfered with staying asleep after surgery? _____

0 1 2 3 4 5 6 7 8 9 10

303 How has pain interfered with movement in bed after surgery?

0 1 2 3 4 5 6 7 8 9 10

304 How has pain interfered with movement out of bed after surgery?

0 1 2 3 4 5 6 7 8 9 10

305 On this scale, how much pain do you have right now? _____

0 1 2 3 4 5 6 7 8 9 10

306 Type of Rescue Analgesia A) Opioid(specify) _____ B) NSAID (specify) _____ C) Non-Pharmacologic (specify)_____

306 What was the longest time you had to wait to get pain medicine?

1. Never asked
2. 15 minutes or less
3. 15–30 minutes
4. 30–60 minutes
5. More than an hour
6. Never given

305

306 Any Side Effect of Rescue Analgesia Drugs A) nausea____ B) vomiting_ C) Drowsiness
D) Dizziness E) other (specify)

305 To what extent did you expect that your postoperative pain would be well-managed?

- A. No expectation B. Low expectation C. Moderate expectation D. High expectation

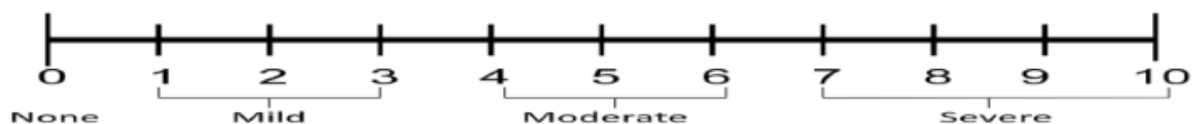
306 Did you use any non-medical methods to relieve your pain? _____No _____Yes,

if yes what_____

307 How often did a health professional encourage you to use a non-medication method?

_____Never _____Sometimes _____Often

Annexe 3: VNRS and 5- LIKERT SCALE of satisfaction level (26)



Part IV. Patient Responses to the Level of Satisfaction with Pain Management

Select the phrase that indicates your satisfaction level

401 How are you satisfied with the way you responded to your reports of pain?

1 2 3 4 5

402 How satisfied are you with the information received about pain management?

1 2 3 4 5

403 How satisfied are you with the way the medical staff adequately discuss the pain with you?

1 2 3 4 5

404 How often did nurses/doctors respond quickly to your requests for pain medication?

1 2 3 4 5

405 How much relief you obtained (no relief to best relief)

0 1 2 3 4 5

406 Would you recommend the same treatment for yourself and friends?

1 2 3 4 5

Extremely dissatisfied Extremely satisfied

Very Dissatisfied (1)	Dissatisfied (2)	Neither Satisfied nor Dissatisfied (3)	Satisfied (4)	Very Satisfied (5)
☐	☐	☐	☐	☐

Thank you!!