

## Original Article

## Exploring Pain Management Strategies and Their Influence on Patient Satisfaction After Abdominal Surgeries: A Qualitative Inquiry in Federal Teaching Hospitals, South-West Nigeria



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### ARTICLE INFO

#### Article History

Submit : Feb 1, 2025  
Accepted : June 22, 2025  
Published : July 8, 2025

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#### Citation:

Dada, R. W., Nwaomah, E., Jummai, W., Bello, Q., Abiodun, T., Opaleye, T., Ogunleye, A., Omitogun, O., Orunmuyiwa, G., & Dada, A. Exploring Pain Management Strategies and Their Influence on Patient Satisfaction After Abdominal Surgeries: A Qualitative Inquiry in Federal Teaching Hospitals, South-West Nigeria. *Journal of Applied Nursing and Health*, 7(2).

<https://doi.org/10.55018/janh.v7i2.271>

### ABSTRACT

**Background:** Patient satisfaction is a key indicator of healthcare quality, particularly about postoperative pain management. Abdominal surgery remains one of the most common major procedures performed in teaching hospitals across Nigeria. However, previous studies have reported prolonged hospital stays, delayed recovery, and increased postoperative complications due to inadequate pain control. Despite the high volume of abdominal surgeries, there is limited evidence on the most effective pain management strategies to improve patient satisfaction. Notably, many patients in federal teaching hospitals in South-West Nigeria continue to express dissatisfaction following surgery. This study examined pain management strategies that enhance patient satisfaction following abdominal surgery in selected federal teaching hospitals in South-Western Nigeria.

**Methods:** A qualitative research design was employed. Twelve patients undergoing postoperative abdominal surgery were purposively selected until data saturation was achieved. Semi-structured interviews were conducted using an interview guide, and the data were analyzed thematically.

**Results:** Six major themes emerged from the analysis: (1) patients' experiences of abdominal surgical pain, (2) satisfaction with current pain management methods, (3) factors promoting coping mechanisms, (4) fear of drug-related adverse effects, (5) strategies adopted for pain management, and (6) patients' suggestions for improving pain control.

**Conclusion:** The study concluded that the use of a combination of pain management strategies significantly enhanced patient satisfaction following abdominal surgery. It is recommended that hospital management implement policies that support the use of multimodal pain management approaches by nurses, with a focus on personalized and compassionate care, to optimize postoperative outcomes and patient satisfaction.

**Keywords:** Postoperative Pain Management; Patient Satisfaction; Abdominal Surgery; Multimodal Analgesia; Qualitative Research.

### Implications for Practice:

- Encouraging the adoption of multimodal pain management strategies can significantly enhance patient satisfaction and recovery after abdominal surgeries.
- Integrating patient-centered and compassionate approaches into postoperative care promotes emotional comfort and better coping mechanisms.
- Continuous training of nurses on non-pharmacological and pharmacological pain management options can improve clinical decision-making.
- Developing institutional policies that support personalized pain care pathways may reduce postoperative complications and hospital stays.
- Involving patients in shared decision-making regarding pain control methods can strengthen trust and optimize care outcomes.

## Introduction

Postoperative pain remains a significant global health concern, particularly following abdominal surgeries—procedures that include appendectomies, hernia repairs, and oncologic resections ([Ladjević et al., 2023](#); [Xuan et al., 2022](#)). These surgeries serve both diagnostic and therapeutic functions, aimed at restoring organ function and quality of life. Despite their clinical importance, postoperative pain is often undertreated, leading to prolonged recovery, increased morbidity, psychological distress, and reduced patient satisfaction. The World Health Organization and other international bodies have consistently emphasized the need for effective pain management as a core indicator of quality surgical care.

Globally, best practices in postoperative pain management emphasize a multidisciplinary approach, incorporating pre-operative education, individualized care plans, and evidence-based strategies such as multimodal analgesia and regional anesthesia ([Dieu et al., 2021](#); [Waelkens et al., 2021](#)). While technological advancements like laparoscopic techniques and wearable monitoring devices have improved pain control outcomes, challenges persist. These include disparities in access to care, limited availability of trained pain specialists, and variability in pain tolerance influenced by socio-demographic and clinical factors. Patient satisfaction, therefore, extends beyond

mere pain relief—it is closely linked to perceived quality of care, involvement in clinical decision-making, communication, and the availability of psychosocial support ([Tufegdžic et al., 2024](#); [Wong et al., 2022](#))

In the African context, particularly in Nigeria, postoperative pain management remains suboptimal. A combination of systemic barriers—limited resources, inadequate staff training, outdated protocols, and cultural reluctance to report pain—contribute to poor outcomes ([Bedwell et al., 2023](#); [Ofor et al., 2022](#); [Osaheni et al., 2020](#)). Studies have shown that many Nigerian patients continue to endure moderate to severe pain following abdominal surgeries, which impairs recovery and reduces trust in healthcare providers ([Nnagbo et al., 2023](#); [Ogbuanya et al., 2023](#); [Seyi-Olajide et al., 2020](#)). Although strategies like multimodal analgesia, patient-controlled analgesia, and non-pharmacological approaches have demonstrated efficacy elsewhere, they are inconsistently applied or underutilized in sub-Saharan Africa. A major contributing factor is the lack of standardized, culturally sensitive, and evidence-informed pain management protocols tailored to local healthcare realities.

This inconsistency highlights a critical research gap. While some studies advocate for pharmacological interventions alone, others emphasize holistic or non-drug-based approaches. There is limited consensus on what constitutes the most effective pain management model in

resource-constrained settings. Furthermore, few studies in Nigeria have explored patient perspectives regarding pain control strategies and satisfaction, an essential dimension of quality care ([Aljohani et al., 2023](#); [Kim et al., 2021](#)).

To address this gap, the present study is guided by Kolcaba's Theory of Comfort, which emphasizes relief from physical, psychological, and environmental stressors as essential to holistic healing ([Lin et al., 2023, 2024](#)). This Theory underpins the conceptual model of this study, linking pain management strategies (independent variables) with patient satisfaction (dependent variable) through the mediating influence of perceived comfort. The Theory posits that effective pain control contributes directly to enhanced comfort, which in turn improves patient satisfaction and recovery outcomes. This study aimed to explore pain management strategies that enhance patient satisfaction following abdominal surgery in selected Federal Teaching Hospitals in South-West Nigeria. By using a qualitative approach, the study seeks to generate context-specific, evidence-based recommendations that can inform clinical practice, training, and policy on postoperative pain management in low-resource tertiary settings

## Methods

This study adopted a qualitative descriptive design grounded in phenomenology, which focuses on exploring and interpreting individuals' lived experiences. This design was chosen to gain an in-depth understanding of postoperative pain management strategies from the perspective of abdominal surgery patients. The study was conducted in clinical settings within two Federal Teaching Hospitals in the South-West geopolitical zone of Nigeria: Lagos University Teaching Hospital (LUTH) and Obafemi Awolowo University Teaching Hospital Complex (OAUTHC). These tertiary

institutions were selected for their surgical volume, specialized pain management units, and diversity of patient experiences. The rich clinical environment and institutional practices influenced both the nature of the data collected and the contextual relevance of the findings.

## Research Team and Reflexivity

The research was led by a principal investigator (PI) with a Bachelor of Nursing Science (BNSc) degree and specialized training in qualitative research and pain management. The PI was supported by trained research assistants who were also registered nurses with BNSc qualifications. While the researchers had no prior personal relationship with the participants, they worked within the same hospitals, which may have influenced participant openness. To minimize bias, the research team engaged in reflexivity journaling, maintained an audit trail, and conducted peer debriefing with academic supervisors to ensure objectivity and critical reflection throughout data collection and analysis.

## Participants

The study population consisted of adult patients who had undergone abdominal surgery at Lagos University Teaching Hospital (LUTH) and Obafemi Awolowo University Teaching Hospital Complex (OAUTHC) in South-West Nigeria. Participants were eligible if they were 18 years or older, experienced postoperative pain between six hours and one week after surgery, and were physically and mentally capable of providing detailed feedback. Individuals were excluded if they had chronic pain conditions, were admitted to intensive or post-anesthesia care units, underwent outpatient procedures, received advanced analgesic techniques such as epidurals or nerve blocks, had cognitive or language impairments, or declined participation. Patients were recruited through purposive sampling in

collaboration with ward nurses, ensuring a diverse range of experiences. A total of 15 patients were approached, and 12 voluntarily agreed to participate, while three declined due to fatigue or lack of interest. All participants were fully informed about the purpose of the study and provided written informed consent before the interviews. No financial or material incentives were offered.

### Data Collection

Data were collected between [insert month/year] and [insert month/year] in the surgical wards of LUTH and OAUTHC. Face-to-face, semi-structured interviews were conducted by the principal investigator and trained research assistants, all of whom were registered nurses with Bachelor of Nursing Science (BNSc) degrees. Interviews were carried out once patients had regained full consciousness and were clinically stable enough to communicate. Each session lasted approximately 25 to 45 minutes and was guided by an interview protocol comprising open-ended questions aimed at exploring patients' pain experiences, satisfaction, coping strategies, and suggestions for improvement. All interviews were audio-recorded with participants' consent and supplemented with field notes capturing non-verbal cues and contextual observations. Transcriptions were done verbatim and verified against audio recordings to ensure accuracy. Although participants were not asked to review the transcripts (i.e., no member checking was conducted), data collection continued until thematic saturation was reached, when no new concepts or insights emerged from subsequent interviews.

### Data Analysis

Thematic analysis was conducted using ATLAS.ti version 24. The analytic process began with transcription and data immersion. A combination of deductive

coding (based on research questions) and inductive coding (emerging from participant responses) was applied. Codes were grouped into categories and further refined into overarching themes. Coding and theme development were primarily conducted by the PI, with periodic consultation and peer review by academic supervisors to validate interpretations. Discrepancies in theme interpretation were resolved through discussion until consensus was reached. The analysis followed the six-step thematic framework outlined.

### Trustworthiness and Rigor

To ensure the credibility and reliability of the findings, the study followed Lincoln and Guba's criteria for trustworthiness, which include credibility, transferability, dependability, and confirmability. Credibility was established through prolonged engagement with participants, pretesting of the interview guide, and peer debriefing with academic supervisors. Thick descriptions of participants' contexts and experiences were provided to enhance transferability. An audit trail documenting methodological decisions, coding processes, and theme development was maintained to ensure dependability. Confirmability was reinforced through reflexive journaling by the researchers and periodic peer reviews to minimize personal bias and ensure that the findings accurately reflected participants' perspectives.

### Ethical Consideration

Ethical approval for the study was obtained from the Health Research Ethics Committees of both participating institutions: Lagos University Teaching Hospital (Approval No: [insert number]) and Obafemi Awolowo University Teaching Hospital Complex (Approval No: [insert number]). Additional administrative permissions were secured from the Medical Directors of both hospitals. Participants were fully informed about the purpose, procedures, potential risks, and



voluntary nature of the study. Written informed consent was obtained from each respondent before data collection. All responses were kept strictly confidential, anonymized during transcription, and stored securely to maintain participant privacy and data protection by ethical research standards.

## Results

A total of 12 patients participated in the Semi-structured interviews, with ages ranging from 26 to 48 years and a mean age of  $37 \pm 7$  years. The majority were married, with diverse occupations: 7 public servants, four traders, and one artisan. This socio-demographic diversity was essential for exploring the influence of socio-demographic factors on pain management and patient satisfaction with pain relief (**Table 1**).

**Table 1.** Socio-Demographics of the Participants in the Study

Respondents	Ages	Gender	Marital status	Education	Occupation	Monthly Income (₦)	Institution
Participant 1	39	F	Married	BSc	Clerical Officer	90,000.00	LUTH
Participant 2	48	F	Married	SSCE	Cleaner	27,000.00	LUTH
Participant 3	38	F	Divorce	SSCE	Caterer	25,000.00 above	OAUTHC
Participant 4	41	F	Single	SSCE	Fashion Designer	30,000	OAUTHC
Participant 5	39	F	Married	BSc	Business	50,000.00 above	LUTH
Participant 6	35	M	Divorcee	ND	Civil Servant	100,000.00	OAUTHC
Participant 7	26	M	Married	HND	Civil Servant	105,000.00	OAUTHC
Participant 8	38	M	Married	BSc	Business	80,000.00	LUTH
Participant 9	38	M	Married	SSCE	Clerck	50,000.00	LUTH
Participant 10	32	F	Married	BSc	Business	70,000.00	LUTH
Participant 11	32	M	Married	OND	Civil Servant	60,000.00	OAUTHC
Participant 12	46	M	Married	SSCE	Business	110,000.00	LUTH

Abbreviations: F, Female; M, Male; SSCE, Senior Secondary Certificate Examination; OND, Ordinary National Diploma; ND, National Diploma; HND, Higher National Diploma; BSc, Bachelor of Science; ₦, Nigerian Naira; LUTH, Lagos University Teaching Hospital; OAUTHC, Obafemi Awolowo University Teaching Hospitals Complex.

The results were systematically organized and presented according to themes and subthemes derived from participants' responses. The key themes included. Below are the expressions of their experiences:

### **Patient experiences with abdominal surgical pain.**

Participants described their pain experiences as severe and unbearable. A female respondent shared, *"The experience was bad because of the pain... I take my drugs to feel better, but the pain still remains, not relieved."* Similarly, a male respondent remarked, *"I was told there would be pain after surgery, but I never expected it to be unbearable upon waking."* Another participant stated, *"I know pain medications like ibuprofen and distractions help, but the*

*pain was too intense to focus on anything, like watching television."* These narratives highlight the overwhelming nature of postoperative pain despite medication use

### **Factors promoting coping mechanisms**

Participants perceived gender, ethnicity, age, and individual differences as key factors influencing pain tolerance. A male respondent noted, *"Age and gender could be a factor,"* while another claimed, *"Men withstand pain more than women."* Others emphasized personal variations in pain perception, with one stating, *"People have different ways of bearing pain; our bodies are not the same."* Cultural background was also cited, with participants suggesting that individuals from northern Nigeria, such as Fulanis and Hausas, tend to exhibit higher

pain tolerance. Additionally, participants linked pain endurance to surgery extent, with a female respondent remarking on the severity of postoperative pain despite being informed about it.

### **Fear of adverse drug side effects**

Respondents expressed concerns about the adverse effects of drugs, influencing their approach to pain management. Male 'respondent' 1 acknowledged the effectiveness of pain medications like Panadol, ibuprofen, and co-codamol but expressed reluctance to take them frequently due to potential adverse effects. *Yes now... I know pain drugs like Panadol, ibuprofen, and co-codamol. Tab and casting your mind from the pain you know... sometimes you don't want to take the drugs all the time because of the adverse effects, you tried to endure it, but you cannot take the pain away. ('Male respondent')*

### **Satisfaction with pain management methods**

Despite challenges, most participants expressed satisfaction with the pain management provided by nurses, highlighting their responsiveness and professionalism. A female respondent noted, *"They give me my drugs quick,"* while another praised the staff's friendliness, saying, *"God bless them, I love the way they treat me."* Male participants echoed similar views, appreciating the nurses' skills and care. However, some expressed partial or complete dissatisfaction due to persistent pain. One male respondent remarked, *"I am a bit satisfied, but the pain has not gone,"* while another expressed frustration, saying, *"The pain no dey easy... I am not satisfied."*

### **Strategies used in managing pain, along with suggestions for improvement**

Several respondents recommended stronger pain medications and diversional therapy to improve pain relief. A female participant suggested, *"Stronger pain drugs*

*and diversional therapy could help."* Similarly, two male respondents advocated for more potent medications, with one stating, *"Strong pain medicine, and moving around and doing something else."* At the same time, another recommended *"Stronger drugs like diclofenac, and exercises."*

Participants also highlighted the need for better healthcare resources and responsiveness. A female respondent expressed gratitude but urged improved nurse responsiveness, saying, *"Help me thank the nurses, but beg them to answer us quickly."* Another participant acknowledged staff professionalism but emphasized the need for more hospital resources, stating, *"God bless them. They show high professional skill, but they can do better."*

The study found that current pain management practices often fail to fully address patient needs, highlighting the importance of better communication, compassionate care, and regular monitoring. Individual differences in pain tolerance necessitate personalized strategies. While medications are vital, patients also benefit from supportive interactions and coping strategies. Concerns about drug side effects and financial barriers impacted medication adherence. Many patients, despite pre-operative counselling, reported severe post-surgery pain. Recommendations included stronger pain medications, diversional therapies, more responsive medical staff, and increased government healthcare support, emphasizing the need for more effective and comprehensive pain management approaches.

## **Discussion**

This study explored the pain management experiences of patients following abdominal surgery in two Federal Teaching Hospitals in South-West Nigeria.

The findings revealed that postoperative pain remains a major concern, often described as severe and unbearable by patients despite receiving prescribed medications. This aligns with studies conducted in various low- and middle-income countries, where patients commonly report inadequate pain relief due to limitations in drug potency, availability, and inconsistent clinical protocols ([Horn et al., 2025](#); [Shanthanna et al., 2023](#); [Zimpel et al., 2020](#)). Although pain medications were administered, several patients expressed that their discomfort persisted, indicating a gap between clinical practice and patient expectations. These findings echo global evidence suggesting that pain intensity is not only a physiological response but also shaped by personal, cultural, and systemic factors.

The influence of demographic and psychosocial variables on pain perception was another significant theme. Participants reported that gender, age, cultural background, and individual resilience affected their pain tolerance—views that have been corroborated in prior studies ([Cooper et al., 2024](#); [Melum et al., 2023](#)). For instance, men were often perceived to tolerate pain better than women, while individuals from northern Nigerian ethnicities were believed to have higher thresholds. These cultural narratives reflect the role of local beliefs in shaping pain behavior, which healthcare providers must consider in developing culturally competent pain care plans.

An important and nuanced finding was the fear of adverse drug effects, which contributed to patients' reluctance to take medications consistently ([Cooper et al., 2024](#); [Coppola et al., 2023](#)). This concern is consistent with existing literature showing that patients often self-limit their analgesic use due to worries about addiction, organ damage, or side effects. Such hesitation can undermine pain management outcomes and suggests the need for better preoperative

education and ongoing patient-provider communication.

Despite these challenges, many patients expressed partial or complete satisfaction with the care received, particularly highlighting the responsiveness and compassion of nurses. This duality—positive perception of care amidst persistent pain suggests that interpersonal aspects of nursing, such as attentiveness and empathy, significantly influence satisfaction. Previous research supports this, showing that patient satisfaction is not solely determined by the intensity of pain relief but also by how well patients feel cared for and supported ([Goodrich & Lazenby, 2023](#); [Mühlbacher & Stolk, 2023](#)). Furthermore, participants proposed practical recommendations, including stronger medications, diversional therapy, and improved nurse responsiveness. These insights underscore the need for integrative approaches that combine pharmacologic and non-pharmacologic interventions, as advocated by multimodal pain management models.

Importantly, this study contributes new contextual insights into pain management in Nigerian tertiary hospitals. While many studies focus on clinical outcomes or provider perspectives, this research foregrounds patient voices, offering a nuanced understanding of their lived experiences. It reinforces the relevance of Kolcaba's Theory of Comfort, demonstrating that effective pain management must address not just physical discomfort but also emotional and environmental needs ([Lin et al., 2024](#); [Liu et al., 2023](#)). Additionally, the study highlights the underutilization of evidence-based strategies such as patient-controlled analgesia and structured diversional therapy in sub-Saharan Africa, pointing to both clinical and policy gaps that require urgent attention.

Nonetheless, this study has several limitations. First, the small sample size and

purposive sampling design limit the generalizability of findings. Although data saturation was reached, the perspectives of patients with rare complications or complex postoperative courses may not be fully captured. Second, cultural and institutional dynamics within the selected hospitals might have influenced participants' willingness to critique their care openly. Third, while efforts were made to ensure trustworthiness, the absence of member checking may have restricted opportunities to validate interpretations with participants.

Despite these limitations, the study offers meaningful implications for nursing practice, hospital administration, and health policy. For practice, there is a need to integrate individualized pain management plans that recognize demographic, cultural, and psychosocial factors. Nurses should be trained in both pharmacologic and non-pharmacologic pain interventions, including active listening and patient education. At the policy level, hospital management should institutionalize structured pain assessment protocols and allocate resources for patient-controlled analgesia and psychological support. In education, nursing curricula should emphasize pain communication, cultural sensitivity, and comfort Theory. For research, future studies could adopt a mixed-methods approach or expand to include healthcare providers' perspectives to triangulate findings and enhance applicability across diverse clinical settings.

### Relevance to Clinical Practice

The findings of this study offer critical insights for enhancing patient care, clinical decision-making, and institutional protocols related to postoperative pain management. By highlighting the intensity of pain experienced after abdominal surgery and the influence of demographic, cultural, and psychological factors, the

study underscores the need for individualized, patient-centered interventions. Clinicians are encouraged to adopt multimodal analgesia approaches and improve communication to address patients' concerns about drug side effects and satisfaction with care. These insights support the revision of existing clinical protocols to incorporate both pharmacological and non-pharmacological strategies, improve nurse responsiveness, and establish routine pain assessments. Furthermore, the study emphasizes the role of ongoing staff education and training in cultural sensitivity, effective communication, and holistic care. At a policy level, the results can inform national pain management guidelines and advocate for greater investment in supportive resources and professional development, ultimately improving care efficiency, safety, and patient satisfaction in surgical settings.

### Conclusion

This study concludes that effective pain management following abdominal surgery requires a patient-centered, multimodal approach that considers individual differences in pain perception, cultural influences, and concerns about drug side effects. The research contributes to nursing practice by emphasizing the value of combining pharmacologic and non-pharmacologic strategies with compassionate care to enhance patient satisfaction and recovery. While the qualitative design and limited sample size may affect the generalizability of findings, the study offers meaningful insights for refining clinical decision-making, improving care protocols, and informing pain management education. It is recommended that hospitals adopt structured, individualized pain management plans and invest in training programs that equip healthcare professionals with both clinical and

interpersonal skills necessary to deliver responsive and culturally sensitive postoperative care.

### Funding

This research received no external funding.

### CrediT Authorship Contributions Statement

Rotimi W. Dada: Conceptualization, Methodology, Supervision, Writing - Original Draft

E.E. Nwaomah: Software, Validation, Formal Analysis, Writing - Review & Editing

S.W. Jummai: Investigation, Resources, Data Curation, Project Administration

Q. Bello: Writing - Original Draft, Review & Editing, Visualization

T. Abiodun: Writing - Review & Editing

T.E. Opaleye: Project Administration

C.A. Ogunleye: Data Curation

E.O. Omitogun: Writing - Review & Editing

Grace U.A. Orunmuyiwa: Writing - Review & Editing

Ayokunnumi E. Dada: Funding Acquisition, Final Approval of the Version to be Published

### Conflicts Of Interest

The authors declare no conflict of interest.

### Acknowledgments

The authors would like to sincerely thank all the patients who participated in this study for their openness and cooperation. Special appreciation is extended to the nurses and surgical staff at Lagos University Teaching Hospital (LUTH) and Obafemi Awolowo University Teaching Hospital Complex (OAUTHC) for their support during the data collection process. The authors also acknowledge the valuable contributions of the academic supervisors and research assistants who assisted in transcription and analysis. This publication is part of an independent academic inquiry

and did not receive financial or material support from any organization.

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