

Awareness and Perception of Pain and Pain Management Options among Orthopedic Patients in Tertiary Hospitals in Ekiti State

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ABSTRACT

Pain is a major and distressing symptom among orthopedic patients, often hindering recovery, psychological wellbeing, and quality of life. Although global progress has been made in pain management, inadequate awareness and negative perceptions of pain relief options persist, especially in low- and middle-income countries. In Nigeria, particularly Ekiti State, limited studies have explored patients' knowledge and perceptions regarding pain and available management strategies. This study assessed the awareness and perception of pain and pain-management options among orthopedic patients in selected tertiary hospitals in Ekiti State and examined the factors influencing their utilization, including commonly used non-pharmacological methods. A descriptive cross-sectional design was employed among patients receiving care in the orthopedic units of Federal Teaching Hospital, Ido Ekiti and Ekiti State University Teaching Hospital. Using a total enumeration and convenience sampling approach, 53 eligible patients aged 18 years and above were recruited. Data were collected using a validated structured questionnaire and analyzed with SPSS version 27, using descriptive and inferential statistics at a 0.05 significance level. Findings revealed generally low awareness, with 58.5% demonstrating poor knowledge of pain-management options. Perception was largely negative (62%), with misconceptions linking analgesics to addiction, weakness, and adverse effects. Key influencing factors included inadequate health-worker education, fear of addiction, high cost or unavailability of medications, and cultural beliefs. Prayer, distraction, and positioning were common non-pharmacologic methods, while evidence-based techniques were underused. Both null hypothesis were accepted meaning there is no significant relationship between the level of education ($p=0.5412$), as well as duration of admission and awareness and perception of pain management. The study concludes that orthopedic patients exhibit poor awareness and negative perceptions toward pain-management options.

Keywords: Awareness, Orthopedic patients, Pain, Pain management, Perception

INTRODUCTION

Pain is a common and distressing symptom among orthopedic patients, often impairing mobility, delaying recovery, and reducing overall quality of life. Despite global advancements in pain-management strategies, many patients in low and middle income countries continue to have inadequate awareness and poor perception of available pain relief options. Such gaps contribute to ineffective pain control, heightened anxiety, and poor treatment adherence.

In Nigeria, and particularly in Ekiti State, there is limited research exploring how orthopedic patients understand pain, how they perceive the available management strategies, and the factors that influence their choices. Misconceptions such as fear of addiction, cultural beliefs, and insufficient communication from health workers further shape patients' attitudes and may hinder the use of effective interventions. This knowledge gap highlights the need for context-specific evidence that can guide targeted patient education and improve clinical pain-management practices.

The present study was designed to assess the level of awareness and perception of pain and pain-management options among orthopedic patients attending tertiary hospitals in Ekiti State, and to identify the factors influencing their use of both pharmacological and non-pharmacological methods. In developing this purpose, it was recognized that understanding patients' beliefs and decision-making processes is essential to enhancing care quality and reducing unnecessary suffering. To guide the investigation, the study hypothesized that there is no significant relationship between patients' level of education and their awareness or perception of pain management options, and that there is no significant relationship between duration of hospital admission and these outcomes.

This study is therefore important because it provides insights that can support improved patient education, strengthen clinical communication, and ultimately promote better pain-management outcomes for orthopedic patients in Ekiti State.

MATERIALS AND METHODS

Study design and setting

Study design

This study utilized a descriptive, non-experimental survey design to assess the awareness and perception of pain and pain management options among orthopedic patients in tertiary hospitals in Ekiti State. This design was selected because it enables the collection of data in a natural setting without manipulating variables, allowing for the accurate description and analysis of participants' perceptions, experiences, or behaviors as they exist.

Study setting

The study was conducted in Ekiti State, Southwest Nigeria, which has 16 local government areas and a population of about 3.27 million. The research sites were the orthopedic units of the Federal Teaching Hospital, Ido-Ekiti (FETHI) and the Ekiti State University Teaching Hospital (EKSUTH), Ado-Ekiti. FETHI, located in Ido-Osi LGA, was established in 1954 and became a teaching hospital in 2014. It has 28 departments and a 284-bed capacity, with the orthopedic unit situated behind the General Out-Patient Department and beside the Accident and Emergency Unit. EKSUTH, established in 2008 and located along Adebayo-Iworoko Road in Ado-Ekiti, provides specialist and emergency services across multiple units. Its orthopedic unit is positioned within the Surgical Complex, adjacent to the trauma and emergency departments. Both orthopedic units served as the specific study settings.

Study population

Target population

The target population for this research study are all orthopedic patients receiving treatment in Federal Teaching Hospital, Ido-Ekiti and Ekiti State University Teaching Hospital.

Inclusion and exclusion criteria

Inclusion criteria were adults aged 18 years and above, clinically stable, conscious, able to communicate, and willing to provide informed consent.

Exclusion criteria were patients admitted in less than 24 hours, critically ill patients, those with cognitive impairment, and individuals unwilling to participate.

Sample size and sampling technique

Sample size

A total of 53 eligible and consenting patients were recruited using the total enumeration method, representing all available orthopedic patients during data collection.

Sampling technique

A convenience sampling technique was employed. All orthopedic patients who met the inclusion criteria and were present during the study period were included.

Instrument for data collection

Description of instrument

A validated structured questionnaire was used for data collection. It consisted of sections on socio-demographic characteristics, awareness of pain and pain management options, perception of pain and its management options, factors influencing the effective use of pain management and non-pharmacological methods commonly used by orthopedic patients.

Validity and reliability

The validity of the questionnaire was ensured through face, content, and construct validity. Items were aligned with study objectives, formatted clearly for readability, and written without ambiguity. The instrument was also reviewed by the supervisor and nursing research experts. Reliability was assessed through a pilot study involving 10% of the sample at Afe Babalola University Multi-System Hospital, yielding a Cronbach's Alpha of 0.794, indicating acceptable internal consistency. Sections on awareness, perception, factors, and non-pharmacological methods were reliable, while socio-demographic items were not tested as they were non-scaled.

Method of data collection

Data were collected using a structured, standardized questionnaire administered by the researcher and trained assistants. Ethical approval was obtained from both hospitals, and informed consent was secured from all participants. Literate respondents completed the questionnaire independently, while those with low literacy were assisted without influencing their responses. Confidentiality and anonymity were ensured. Data collection lasted one week, yielding 53 participants.

Data analysis

Completed questionnaires were sorted and entered into SPSS (version 27) for analysis. Both descriptive and inferential statistics were used. Descriptive statistics (mean, median, standard deviation, and frequency tables) were used for Section A (socio-demographics). Section B (awareness) was coded Yes = 1 and No = 0; scores above the mean indicated Good Awareness, while scores below indicated Poor Awareness. Section C (perception) used a 4-point Likert scale coded as: Strongly Agree = 5, Agree = 4, Disagree = 2, Strongly Disagree = 1, with reverse coding for negative items. Scores above the mean reflected Positive Perception while those below indicated Negative Perception. Section D (factors influencing pain management use) was analyzed using means and standard deviations. Hypotheses were tested using Chi-square at a 95% confidence interval, with $p < 0.05$ considered significant. Results were presented using tables, charts, and narrative explanations.

Ethical considerations

Ethical approval was obtained from the Research and Ethics Committees of FETHI and EKSUTH. All participants were fully informed about the study and provided written informed consent. Confidentiality, anonymity, and voluntary participation were ensured throughout the research process.

RESULT AND DISCUSSION

Presentation of results

Sociodemographic Characteristics of respondents

A total of 53 orthopedic patients participated in the study, drawn from FETHI (47.2%) and EKSUTH (52.8%). Most respondents were aged 31–45 years (34.0%) and 46–60 years (28.3%). Slightly more males (52.8%) than

females (47.2%) were included. The majority were married (60.4%) and had secondary (37.7%) or tertiary education (34.0%). Fractures were the most common diagnosis (52.8%), and most respondents had hospital stays of less than one week (37.7%) (Table 1)(Figure 1).

Table 1 Socio-Demographic Data of Respondents (N = 53) (Source: Researcher’s Survey, 2025)

| Variable | Category | Frequency(f) | Percentage(%) |
|---|--------------------------------------|--------------|---------------|
| Age | 18-30 | 12 | 22.6 |
| | 31-45 | 18 | 34.0 |
| | 46-60 | 15 | 28.3 |
| | 61+ | 8 | 15.1 |
| Sex | Male | 28 | 52.8 |
| | Female | 25 | 47.2 |
| Marital status | Single | 15 | 28.3 |
| | Married | 32 | 60.4 |
| | Divorced/Widowed | 6 | 11.3 |
| Educational level | No formal education | 5 | 9.4 |
| | Primary | 10 | 18.9 |
| | Secondary | 20 | 37.7 |
| | Tertiary | 18 | 34.0 |
| Occupation | Farmer | 18 | 34.0 |
| | Trader | 16 | 30.2 |
| | Teacher | 6 | 11.3 |
| | Retiree | 5 | 9.4 |
| | Others (e.g artisans, health worker) | 8 | 15.1 |
| Religion | Christianity | 38 | 71.7 |
| | Islam | 15 | 28.3 |
| | Traditional | 0 | 0.0 |
| | Others | 0 | 0.0 |
| Name of hospital | FETHI | 25 | 47.2 |
| | EKSUTH | 28 | 52.8 |
| Duration of hospital stay | <1 week | 20 | 37.7 |
| | 1-2 weeks | 18 | 34.0 |
| | 3-4 weeks | 10 | 18.9 |
| | >4 weeks | 5 | 9.4 |
| Diagnosis/type of orthopedic condition | Fracture | 28 | 52.8 |
| | Dislocation | 6 | 11.3 |
| | Arthritis | 5 | 9.4 |
| | Post-op (incl. amputation) | 10 | 18.9 |
| | Others (sprain/contracture) | 4 | 7.5 |

Awareness of Pain Management Options

Overall awareness of pain management was low among respondents. Although 71.7% were aware that medications could relieve pain, only 37.7% had heard of pain management as a concept. Awareness of non-pharmacological methods and education from health professionals was poor, reported by 30.2% and 34.0% respectively. The overall mean awareness score (2.717 ± 1.420) indicated poor awareness of pain management options (Table 2)(Figure 1).

Table 2: Awareness of Pain and Pain Management Options (N = 53) (Source: Researcher’s Survey, 2025)

| Variable | Response | Frequency (f) | Percentage (%) |
|--|----------|---------------|----------------|
| Have you ever heard of pain management before? | Yes | 20 | 37.7 |
| | No | 33 | 62.3 |
| Are you aware that pain can be treated using medications (pharmacological methods)? | Yes | 38 | 71.7 |
| | No | 15 | 28.3 |
| Are you aware that there are non-drug (non-pharmacological) pain management options (e.g., massage, relaxation)? | Yes | 16 | 30.2 |
| | No | 37 | 69.8 |
| Have health professionals educated you about pain management options? | Yes | 18 | 34.0 |
| | No | 35 | 66.0 |
| Are you aware that unmanaged pain can affect sleep and mobility? | Yes | 25 | 47.2 |
| | No | 28 | 52.8 |
| Do you know that timely pain management can improve recovery? | Yes | 27 | 50.9 |
| | No | 26 | 49.1 |

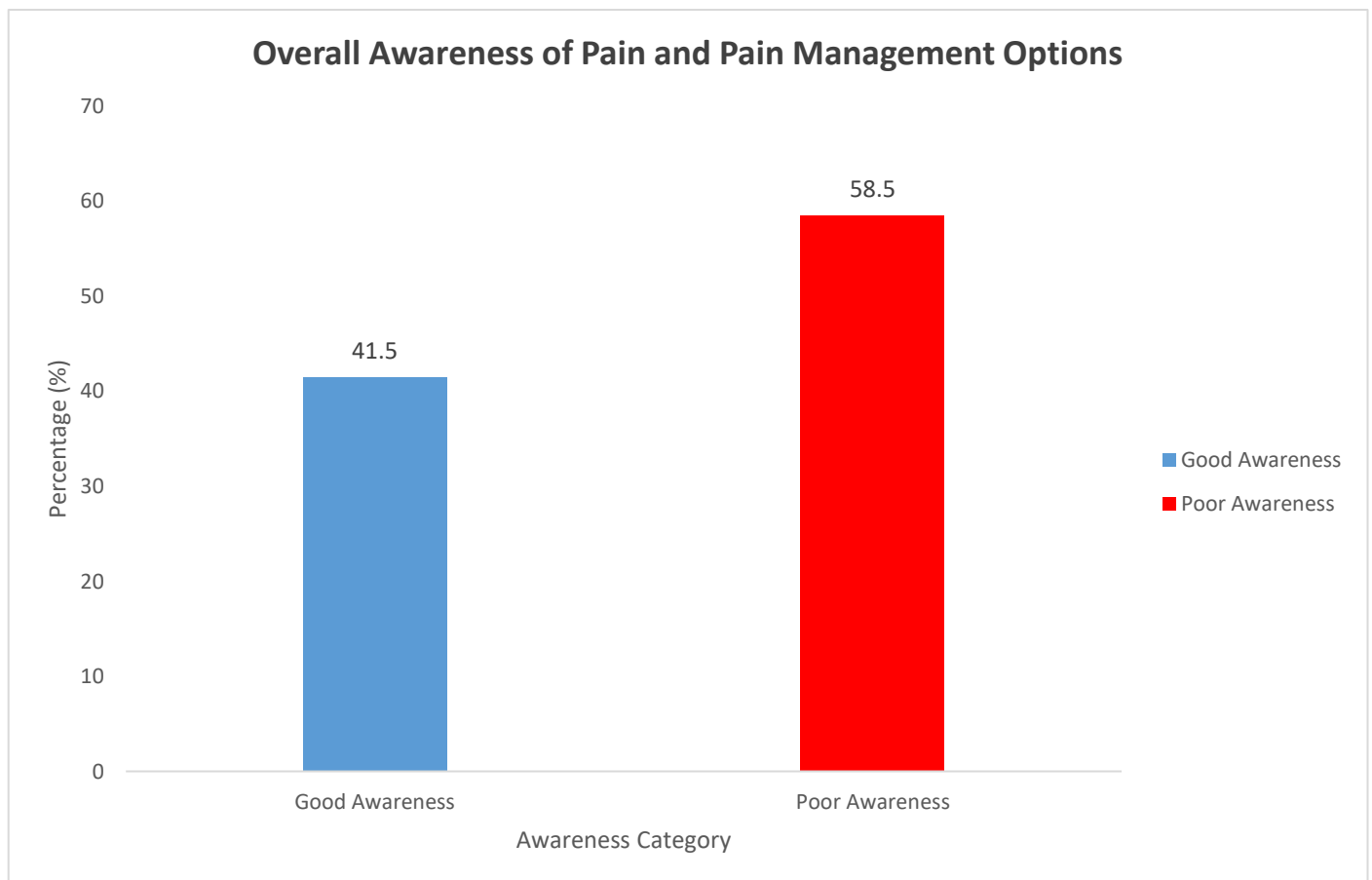


Figure 1: Bar chart showing showing overall awareness of pain and pain management options

Perception of Pain Management Options

Respondents demonstrated generally negative perceptions toward pain management. Many believed pain should be endured rather than treated, and misconceptions regarding addiction, weakness, and side effects of pain medications were common. The overall mean perception score of 2.664 ± 0.764 reflected an unfavorable attitude toward pain management among orthopedic patients (Table 3)(Figure 2).

Table 3 Perception of Pain and Pain Management Options among Orthopedic Patients (n = 53), (Source: Researcher’s Survey, 2025)

| | | | | | |
|--|------------|------------|------------|------------|-----------|
| Pain is something that should be endured, not treated | 20 (37.7%) | 12 (22.6%) | 10 (18.9%) | 11 (20.8%) | 53 (100%) |
| Taking pain medication is a sign of weakness | 18 (34.0%) | 14 (26.4%) | 11 (20.8%) | 10 (18.9%) | 53 (100%) |
| Reporting pain frequently is unnecessary | 15 (28.3%) | 13 (24.5%) | 13 (24.5%) | 12 (22.6%) | 53 (100%) |
| Pain management should only be done by doctors, not nurses | 12 (22.6%) | 16 (30.2%) | 14 (26.4%) | 11 (20.8%) | 53 (100%) |
| Non-drug pain management methods are not effective | 17 (32.1%) | 14 (26.4%) | 12 (22.6%) | 10 (18.9%) | 53 (100%) |
| Pain medication is addictive and should be avoided | 20 (37.7%) | 10 (18.9%) | 13 (24.5%) | 10 (18.9%) | 53 (100%) |
| Pain should be tolerated to avoid side effects of drugs | 22 (41.5%) | 12 (22.6%) | 10 (18.9%) | 9 (17.0%) | 53 (100%) |
| Nurses/doctors educate patients enough about pain management | 10 (18.9%) | 12 (22.6%) | 15 (28.3%) | 16 (30.2%) | 53 (100%) |

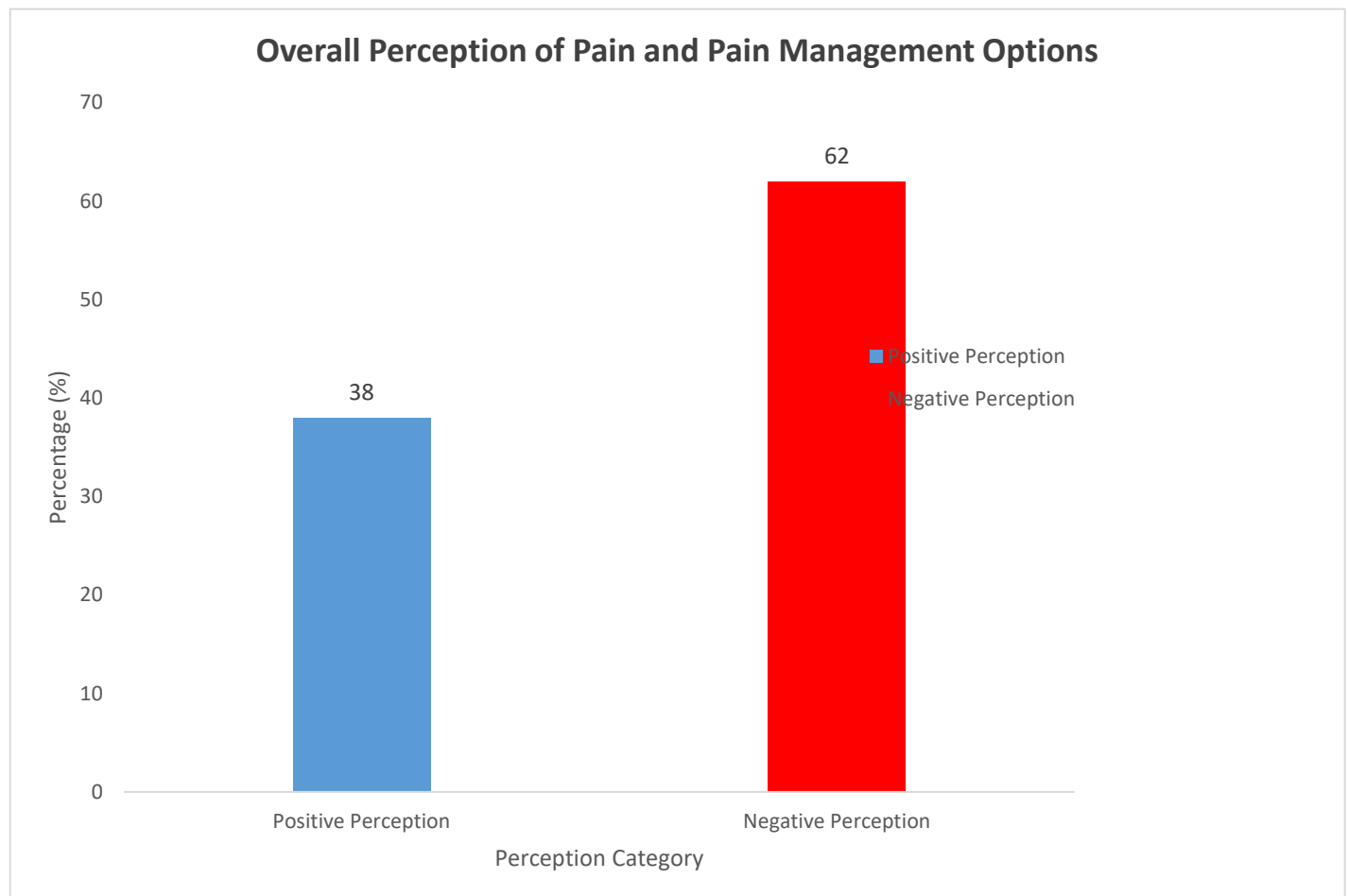


Figure 2: Bar chart showing overall perception of pain and pain management options

Factors Influencing Pain Management Use

Several factors were identified as barriers to effective pain management. The most frequently reported were lack of education from health workers (73.6%), fear of drug addiction (69.8%), unavailability of medications (66.0%), and high cost of pain drugs (64.2%). Cultural beliefs, long waiting times, and poor communication with health professionals were also commonly reported (Table 4).

Table 4: Factors Influencing the Effective Use of Pain Management Options among Orthopedic Patients (n = 53), (Source: Researcher’s Survey, 2025)

| S/N | Factors Influencing Pain Management Options | Yes f (%) | No f (%) | Total f (%) |
|-----|---|-----------|----------|-------------|
| 1 | Fear of drug addiction prevents patients from using prescribed pain medication | 37 (70%) | 16 (30%) | 53 (100%) |
| 2 | High cost of prescribed pain medications limits consistent use | 34 (64%) | 19 (36%) | 53 (100%) |
| 3 | Cultural or religious beliefs discourage use of some pain management methods | 31 (58%) | 22 (42%) | 53 (100%) |
| 4 | Lack of education from health workers reduces understanding of pain management | 39 (74%) | 14 (26%) | 53 (100%) |
| 5 | Long waiting time before receiving treatment discourages pain reporting | 30 (57%) | 23 (43%) | 53 (100%) |
| 6 | Poor communication between patients and health professionals affects pain control | 32 (60%) | 21 (40%) | 53 (100%) |
| 7 | Unavailability of certain pain drugs or materials affects treatment | 35 (66%) | 18 (34%) | 53 (100%) |
| 8 | Fear of side effects makes patients avoid prescribed medication | 33 (62%) | 20 (38%) | 53 (100%) |

Non-Pharmacological Methods Used

Prayer or spiritual practices were used by all respondents (100%) as a pain coping method. Distraction techniques (71.7%) and massage (45.3%) were also commonly employed, while evidence-based methods such as physiotherapy (37.7%), relaxation techniques (24.5%), and heat or cold therapy (15.1%) were less frequently used (Table 5).

Table 5: Commonly Used Non-Pharmacological Methods Of Pain Management, (Source: Researcher’s Survey, 2025)

| Variable | Yes | No | Total |
|---|--------|-------|--------|
| I use physiotherapy or exercise to reduce pain | 20 | 33 | 53 |
| | 37.7% | 62.3% | 100.0% |
| I use massage or rubbing of the affected areas to relieve pain | 24 | 29 | 53 |
| | 45.3% | 54.7% | 100.0% |
| I use heat or cold therapy (e.g., hot packs, ice packs) to manage pain | 8 | 45 | 53 |
| | 15.1% | 84.9% | 100.0% |
| I use relaxation or deep breathing techniques for pain relief | 13 | 40 | 53 |
| | 24.5% | 75.5% | 100.0% |
| I use distraction techniques (e.g., music, tv, conversation) to reduce pain | 38 | 15 | 53 |
| | 71.7% | 28.3% | 100.0% |
| I use prayer or spiritual practices to cope with pain | 53 | 0 | 53 |
| | 100.0% | 0.0% | 100.0% |
| I combine two or more non-drug methods for better relief | 15 | 38 | 53 |
| | 28.3% | 71.7% | 100.0% |

Test of hypothesis

There was no statistically significant relationship between level of education and awareness or perception of pain management options among respondents ($\chi^2 = 2.1476, p = 0.541$). Similarly, no significant relationship was found between duration of hospital admission and awareness or perception of pain management ($\chi^2 = 1.025, p = 0.797$). Therefore, both null hypotheses were accepted since the p-value is greater than 0.05.

DISCUSSION

Awareness of pain and pain management

Only 37.7% of respondents in this study had heard of “pain management,” and most (71.7%) equated pain relief primarily with medications. This low awareness mirrors findings from Nigerian and other sub-Saharan settings, where patient knowledge of analgesic and non-pharmacological options remains poor and postoperative pain care is frequently inadequate (Olaitan et al., 1985; Yunus, Ugwu, Ali & Olagunju, 2020; Faponle, Soyannwo & Ajayi, 2001). Limited health-worker education and poor provider–patient communication are repeatedly identified as drivers of low awareness in low-resource contexts, underscoring the need for structured patient education in tertiary hospitals (Ehwarieme, Josiah & Abiodun, 2023; Alqaisi & Al-Ghabeesh, 2024).

Perception of pain and pain management

Negative perceptions and misconceptions were common: many respondents believed pain should be endured, that taking analgesics indicates weakness, or that non-drug methods are ineffective. These attitudes reflect broader trends in regional literature, where cultural beliefs, fear of side-effects (including addiction), and inadequate counselling lead to delayed help-seeking and under-use of effective pain control measures (Olaitan et al., 1985; Faponle et al., 2001; Ehwarieme et al., 2023; Alqaisi & Al-Ghabeesh, 2024). Such misconceptions may reduce timely reporting of pain and impede adoption of multimodal pain strategies.

Factors influencing effective pain management

Respondents identified poor health-worker education, fear of addiction/side-effects, drug unavailability or cost, cultural beliefs, long waiting times, and weak provider–patient communication as barriers to effective pain control. These patient-level and system-level barriers are consistent with empirical Nigerian studies and integrative reviews that highlight inadequate analgesic supply, suboptimal prescribing practices, and gaps in nursing assessment or education as persistent constraints to adequate pain relief in LMIC hospitals (Yunus et al., 2020; Faponle et al., 2001; Ehwarieme et al., 2023; Alqaisi & Al-Ghabeesh, 2024). Addressing both education and supply-chain or organizational issues is therefore essential.

Commonly used pain management methods

Spiritual coping (prayer) and informal distraction (e.g., listening to music, conversations) were widely used in this sample, which aligns with Nigerian and regional data showing that faith-based coping often serves as a substitute or complement to formal pain management when access is limited (Ferreira-Valente et al., 2021; Ehwarieme, 2021). Use of evidence-based non-pharmacological methods (e.g., physiotherapy, heat/cold therapy, relaxation techniques) was comparatively low, a pattern consistent with regional reports attributing underutilization to lack of patient education, few trained staff and limited rehabilitative resources (Ehwarieme et al., 2023; Alqaisi & Al-Ghabeesh, 2024). Promoting physiotherapy and simple non-drug techniques alongside culturally sensitive education could improve multimodal pain control in tertiary hospital settings.

CONCLUSION

This study concludes that orthopedic patients in tertiary hospitals in Ekiti State have poor awareness and predominantly negative perceptions of pain and pain management options. Despite experiencing significant pain, many patients rely mainly on pharmacological methods and underutilize evidence-based non-pharmacological strategies due to inadequate education, fear of side effects, cultural beliefs, and poor communication with health professionals. Inferential analysis revealed no significant relationship between patients’ level of education or duration of hospital admission and their awareness or perception of pain management, indicating that these challenges cut across all patient groups. Strengthening routine patient education, improving provider–patient communication, and promoting multimodal pain management approaches are essential to improving pain outcomes among orthopedic patients.

RECOMMENDATION

Future studies should consider a larger sample size and the use of probability sampling techniques to improve representativeness and enhance the generalizability of findings.

REFERENCES

1. Abou-Zeid, M. A., Iskandar, M. M., Noun, A. F., & Saad, T. S. (2017). Patient perception of acute pain management: Data from three tertiary care hospitals. *Journal of Pain Research*, 10, 775–783. <https://doi.org/10.2147/JPR.S131849>
2. Aderinto, J. O., Ugbeye, M. P., Adebajo, A. O., et al. (2002). Post-operative pain therapy: A survey of prescribing patterns and adequacy of analgesia in Ibadan, Nigeria. *Tropical Doctor*, 32(1), 12–15.
3. Alqaisi, O. M., & Al-Ghabeesh, S. M. (2024). Quality of postoperative pain management in orthopedic patients and its impact on sleep quality and patient satisfaction: An integrative review. *Cureus*, 16(7), e65872. <https://pmc.ncbi.nlm.nih.gov/articles/PMC11364362/>
4. Christie, O. B., & Olufunke, O. A. (2020). Knowledge, acceptance and perceived effects of pain assessment tools in patient management among nurses in selected hospitals in Ekiti State. *International Journal of Research and Innovation in Social Science*, 4(8), 173–178.
5. Christie, O. B., Oluseyi, A. O., & Olufunke, O. A. (2020). Factors associated with utilization of pain assessment tools in pain management among nurses in selected hospitals in Ekiti State. *International Journal of Research and Innovation in Social Science*, 4(8), 164–172.
6. Ehwareme, T. A. (2021). Pain-coping strategies used and its perceived effectiveness among patients attending a sickle-cell centre in Benin City, Edo State, Nigeria [Report]. SciVision Publishing. <https://www.scivisionpub.com/pdfs/pain-coping-strategies-used-and-its-perceived-effectiveness-among-patients-attending-sickle-cell-center-in-benin-city-edo-state-ni-1901.pdf>
7. Ehwareme, T. A., Josiah, U., & Abiodun, O. O. (2023). Postoperative pain assessment and management among nurses in selected hospitals in Benin City, Edo State, Nigeria. *Journal of Integrative Nursing*, 5(3), 203–209. https://doi.org/10.4103/jin.jin_54_23
8. Faponle, A. F., Soyannwo, O. A., & Ajayi, I. O. (2001). Post-operative pain therapy: A survey of prescribing patterns and adequacy of analgesia in Ibadan, Nigeria. *Central African Journal of Medicine*, 47(3), 70–74. <https://europepmc.org/article/med/11961861>
9. Ferreira-Valente, J. P., da Silva, M. A., Martins, L. C., et al. (2021). Prayer as a pain intervention: Protocol for a systematic review. *BMJ Open*, 11(12), e051338. <https://pmc.ncbi.nlm.nih.gov/articles/PMC8258549/>
10. Morriss, W. W., et al. (2018). Pain management in low- and middle-income countries: Challenges and opportunities. *Pain Reports*, 3(1), e616. <https://pmc.ncbi.nlm.nih.gov/articles/PMC7807826/>
11. Ojo, P. A., Adejumo, P. O., Olonisakin, R. P., Ojo, S. A., Tunmibi, O. O., & Kuforiji, B. N. (2023). Perception of pain and its management among aged patients in selected hospitals in Ibadan, Nigeria. *West African Journal of Nursing*, 33(1), 55–64.
12. Olaitan, P. B., Ogunbamibo, G., & Adeoye, P. O. (1985). Study of incidence of post-operative pain among Nigerian patients. *British Journal of Surgery*, 72(3), 226–228. <https://pubmed.ncbi.nlm.nih.gov/3004177/>
13. Yunus, A. A., Ugwu, E. M., Ali, Y., & Olagunju, G. (2020). Postoperative pain management in emergency surgeries: A one-year survey on perception and satisfaction among surgical patients. *Nigerian Journal of Surgery*, 26(1), 42–47. https://doi.org/10.4103/njs.NJS_18_19
14. Tawil, S. A. H., Tadesse, B. G., & Tadesse, B. G. (2018). Patients' satisfaction with post-operative pain management in Ayder Comprehensive Specialized Hospital, Ethiopia: A cross-sectional study. *BMC Anesthesiology*, 18(1), 107. <https://doi.org/10.1186/s12871-018-0570-x>
15. Venkatesan, U., Palani, C., & Vijayakumar, K. (2021). Perception of pain, attitude and satisfaction of pain management among postoperative patients. *Journal of Clinical and Diagnostic Research*, 15(1), LC05-LC08. <https://doi.org/10.7860/JCDR/2021/45802.14417>
16. Yunus, W. S. W. M., Yusoff, F. M., & Ismail, S. F. (2024). Quality of postoperative pain management in orthopedic patients and its impact on sleep quality and patient satisfaction: An integrative review. *Sultan Qaboos University Medical Journal*, 24(2), 223–233. <https://doi.org/10.18295/squmj.2024.24.02.007>

Ethical Considerations

Ethical approval

Ethical approval was obtained from the Research and Ethics Committees of FETHI and EKSUTH. All participants were fully informed about the study and provided written informed consent. Confidentiality, anonymity, and voluntary participation were ensured throughout the research process.

Conflict of Interest: Nil

Data Availability

The datasets generated and analyzed during this study are not publicly available due to confidentiality agreements with participants but are available from the corresponding author on request.

Revisions

All reviewers' comments have been carefully addressed and necessary corrections have been made in the manuscript. The revised version reflects these changes accordingly.

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