

Assessment of Patient Satisfaction on Acute Postoperative Pain Management and Associated Factors at Yekatit 12 Hospital Medical College

Leul Zena¹, Daniel Abebe¹, Trhas Tadesse², Wondwossen Amtataw^{1*} and Zemen Eyayu³

¹Department of Surgery, Yekatit 12 Hospital Medical College, Addis Ababa, Ethiopia.

²Department of public health, Yekatit 12 Hospital Medical College, Addis Ababa, Ethiopia.

³Department of anesthesiology and critical care, Yekatit 12 Hospital Medical College, Addis Ababa, Ethiopia.

*Corresponding author

Wondwossen Amtataw,
Yekatit 12 Hospital Medical College,
Addis Ababa,
Ethiopia.
ORCID: <https://orcid.org/0000-0001-5060-7984>

Submitted : 31 Mar 2024 ; Published : 21 Jun 2024

Citation: Zena, L., Abebe, D., Tadesse, T., Amtataw, W., & Eyayu, Z. (2024). Assessment of Patient Satisfaction on Acute Postoperative Pain Management and Associated Factors at Yekatit 12 Hospital Medical College. *J Medical Case Repo*, 6(2):1-6.

DOI : <https://doi.org/10.47485/2767-5416.1079>

Abstract

Background: Pain is the main reason triggering patients to seek assistance in the emergency department. In our context, postoperative patients frequently report pain upon discharge, leading to significant discomfort and various drawbacks associated with inadequate postoperative pain management.

Objectives: To determine the level of patient satisfaction on acute postoperative pain management and associated factors.

Methods: Cross-sectional study design used and level of satisfaction was measured using five-point Likert scale. SPSS version 23 used for data entry and analysis.

Result: From the total of the study participants 145(74.4%) were satisfied on post op pain managements. Several factors are significantly associated with patients' satisfaction with postoperative pain management. The factors identified in the study include Alcohol Use (AOR: 2.54, 95% CI: 1.18, 5.45), Pre-op Analgesics (AOR: 2.68, 95% CI: 1.02, 7.05), and Pain Score (AOR: 0.13, 95% CI: 0.03, 0.53).

Conclusion: The study showed alcohol use, pre-operative analgesics, and pain score significantly influence patients' satisfaction with postoperative pain management. To enhance patient satisfaction, healthcare practitioners must employ a comprehensive approach to pain management and consider individual patient characteristics and preferences.

Keywords: Patient satisfaction, pain Management, Y12HMC

Introduction

Pain is defined as “an unpleasant sensory and emotional experience associated with actual or potential tissue damage.” However, McCaffery’s simpler definition from 1968 remains a gold standard: “pain is what the experiencing person says it is, existing whenever he says it does [1]. Pain is individualized and influenced by biology, psychology, and social factors. Surgical procedures cause tissue injury. Pain is classified as acute (lasting less than 3 months) or chronic. It’s either nociceptive (due to tissue damage) or neuropathic (pathological) [1-3].

Acute postoperative pain is typical after surgery, slowing recovery and discharge, raising infection risks, and causing respiratory/cardiovascular issues. Untreated, it lowers satisfaction, raises morbidity/mortality, and strains both patients and healthcare finances. Persistent postoperative pain

is prevalent, affecting approximately 50% of patients following procedures like thoracotomy and mastectomy [4-6].

Various surgeries affect different organs and tissues, leading to diverse patterns of pain. Current guidelines advise using multiple pain-relief methods to enhance effectiveness and minimize opioid side effects [7-12].

Although postoperative pain control methods have been offered to surgical patients, yet there’s a lack of evidence regarding their satisfaction with pain management in this study area. Thus, this study aims to evaluate patient satisfaction levels and factors associated with postoperative pain management.

Methods and Materials

Study area and Study Period

The study was conducted in Y12HMC which is an academic institution found in Addis Ababa, Ethiopia under Addis Ababa City Administration. The study was in all operated general surgery patients admitted to Yekatit 12 Hospital Medical College from April to May 2022.

Study Design

A Hospital based cross-sectional study design with quantitative approach had been used.

Source and Study Population

All operated general surgery patients admitted to Yekatit 12 Referral Hospital from April to May 2022 were considered as source population while those all operated general surgery patients who fulfill the inclusion criteria were the study population.

Inclusion and Exclusion Criteria

All operated General surgery patients admitted to Yekatit 12 Referral Hospital within 48 postoperative hours included in the study whereas Comatose or non-communicative patients, patients below age of 15 and patients who do not give their consent/assent to be included in the study were excluded from the study group.

Study Variable

Independent variables: Socio-demographic factors (Age, sex, marital status, income, occupation, type of surgery, Mode of pain management, co morbidities, smoking, frequent use of alcohol. Dependent variables: Level of satisfaction on postoperative pain management

Data Collection Technique and Quality Control

A structured and pretested questionnaire was used to collect the data. Interview administered questionnaire was used to collect the data from admitted and operated general surgery patients on the first post-operative day after obtaining consent /assents. Data was collected through patients' chart review, interview, and five-point Likert scale. The tools have been pretested and amended before the actual data collection. Data was collected by trained individuals and the collected data were cross-checked for consistency and completeness by principal investigator.

Data Processing and Analysis

Data were entered into Epi Info software (version 7) and then exported to SPSS (version 23). Bivariate and multivariate logistic regression analyses were employed to control confounding factors and identify factors linked to patient satisfaction. Significance level of <0.05 and a confidence interval of 95%, was utilized to assess associations between dependent and independent variables. Analysis results were conveyed through tables and graphs where applicable.

Result

Socio Demographic Characteristics of The Study Participants

One hundred ninety five participants were included for this study purpose from them 105 (53.8%) were males, the mean age of the participants was placed within range between 2 years to 85 years of age with Standard deviation (SD) of 35 ± 13.7 . Among the total of the participants 105(54.4%) were employee and 73(37.4%) of the participants monthly income were between 5000 ETB- 10,000 ETB (Table 1).

Variables	Categories	Frequency	Percentage
Sex	Male	105	53.8%
	Female		
Age	SD 35 years \pm 13.7		
Marital status	Married	79	40.5%
	Single	86	44.1%
	Divorced	22	11.3%
	Widowed	8	4.1%
Employment status	Employee	106	54.4%
	Private business	36	18.5%
	Non-employee	53	27.2%
Income	No income	45	23.1%
	<5000	57	29.2%
	5001-10,000	73	37.4%
	>10,000	20	10.3%
Comorbid illness	Yes	57	29.2%
	No	138	70.8%

Table 1: Showed Socio Demographic characteristics of the study participants.

Behavioral Characteristics of The Study Participants

From the total of the study participants 138(70.8%) had no history of related co morbidity. Most of the study participants were had no history of smoking and Alcohol use 24(63.6%) and 138 (70.8%).

Variables	Categories	Frequency	Percentage
Smoking history	Non smoker	124	63.6%
	Past smoker	38	19.5%
	Current smoker	33	16.9%
Alcohol use	Yes	57	29.2%
	No	138	70.8%

Table 2: Showed behavioral characteristics of the study participants.

Clinical Characteristics of The Study Participants

Most participants (59%) underwent elective surgery, and a majority (76.4%) received pain medication, primarily Tramadol (54.4%). Fifty-one percent had abdominal surgeries, with an average surgery time of 130 minutes (SD: 49; range: 60-300 minutes). The majority had no previous surgery history, and 67.7% did not receive analgesics postoperatively.

Variables	Categories	Frequency	Percentage
Type of surgery	Elective	115	59%
	Emergency	80	41%
Mostly used analgesics	PO medication	13	6.6%
	Diclofenac	47	24.1%
	Tramadol	106	54.4%
	Morphine	19	9.7%
	No	10	5.1%
Surgery site	Abdominal surgery	100	51.3%
	Other	95	48.7%
Duration of surgery	Mean time 130' SD 49.9' with range 240(60'-300')		
Anti pain consumption	Yes	149	76.4%
	No	46	23.6%
Hx of surgery	Yes	35	17.1%
	No	160	82.1%
Pre op use of analgesics	Yes	63	32.3%
	No	132	67.7%

Table 3: Showed Clinical characteristics of the study participants.

Level of Patient's Satisfaction in Postoperative Pain Management

Out of all participants, 74.4% were satisfied with pain management. Most experienced mild pain (61.5%) post-op and

took analgesics (92.3%). Majority (56.4%) received analgesics upon request. Few (8.7%) were content with non-medical pain management. Most (70.3%) were satisfied with healthcare professionals' information on pain management (Figure 1).

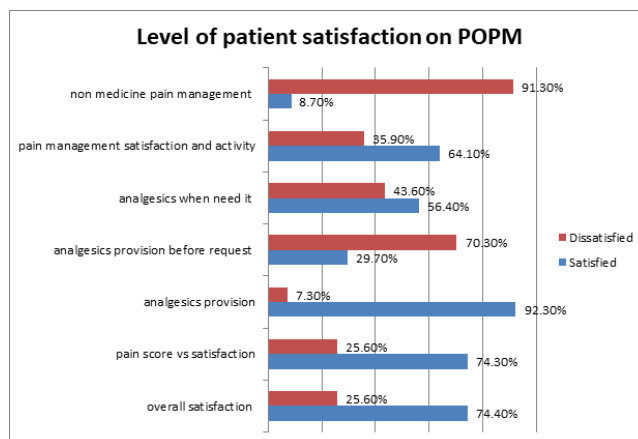


Figure 1: shows Level of Patient's Satisfaction in Postoperative Pain Management.

Factor associated with Patient's Satisfaction with Postoperative Pain Management

Multivariate analysis highlighted Pre-op Analgesics, Alcohol Use, and pain score as significant factors for postoperative pain management satisfaction. Alcohol users had 2.54 times higher odds of satisfaction (95% CI: 1.18, 5.45). Pre-op Analgesics users had 2.68 times higher odds of satisfaction (95% CI: 1.02, 7.05). Mild pain was associated with 0.13 times lower odds of satisfaction (95% CI: 0.03, 0.53) (Table 4).

Variables		Level of satisfaction		Odds ratio with 95% CI	
		Satisfied	Dissatisfied	COR	AOR
Sex	Male	77(39.5%)	28(14.4%)	1	-
	Female	68(34.9%)	22(11.3%)	0.89(0.46, 1.69)	
Marital Status	Married	61 (31.3%)	18(9.2%)	0.88(0.16, 4.77)	-
	Single	62(31.8%)	24 (12.3%)	1.16(0.21, 6.15)	
	Divorced	16 (8.2%)	6 (3.1%)	1.12(0.17, 7.19)	
	Widowed	6 (3.1%)	2 (1%)	1	
Employment status	Gov't Employee	80(41%)	26(13.3%)	1(0.46, 2.15)	-
	Private business	25(12.8%)	11(5.6%)	1.35(0.53, 3.49)	
	Unemployed	40(20.5%)	13(6.7%)	1	
Income	No income	34(17.4%)	11(5.6%)	1	-
	<5000 ETB	46(23.6%)	11(5.6%)	0.73(0.28, 1.91)	
	5001-10,000 ETB	52(26.7%)	21(10.8%)	1.25(0.53, 2.91)	
	>10,000 ETB	13(6.7%)	7(3.6%)	1.66(0.53,5.22)	
Co morbidity	Yes	44(22.6%)	13(6.7%)	0.81(0.39, 1.66)	-
	No	101(51.8%)	37(19%)	1	
Smoking	Non-Smoker	91(46.7%)	33(16.9%)	1.13(0.46, 2.76)	-
	Past smoker	29(14.9%)	9(4.6%)	0.97(0.32, 2.89)	
	Current smoker	25(12.8%)	8(4.1%)	1	

Alcohol use	Yes	33(16.9%)	24(12.3%)	3.13(1.59, 6.16)*	2.54(1.18, 5.45)**
	No	112(57.4%)	26(13.3%)	1	1
Type of surgery	Elective	84(43.1%)	31(15.9%)	1.18(0.61, 2.29)	-
	Emergency	61(31.3%)	19 (9.7%)	1	-
Hx of previous surgery	Yes	28(14.4%)	7(3.6%)	1	-
	No	117(60%)	43(22.1%)	1.47(0.59, 3.61)	-
Pre OP analgesics	Yes	53(27.2%)	10(5.1%)	1	1
	No	92(47.2%)	40(20.5%)	2.3(1.06, 4.98) *	2.68(1.02, 7.05) **
Did you get anti- pain	Yes	112(57.4%)	37(19%)	0.83(0.39, 1.76)	-
	No	33(16.9%)	13(6.7%)	1	-
Site of surgery	Abdominal	68(34.9%)	32(16.4%)	2.01(1.04, 3.91)*	1.81(0.81, 4.05)
	Other	77(39.5%)	18(9.2%)	1	-
Pain score classification	No pain	16(8.2%)	8(4.1%)	0.5(0.13, 1.92)	0.42(0.81, 2.21)
	Mild pain	96(49.2%)	24(12.3%)	0.25(0.08,0.78) *	0.13(0.03, 0.53) **
	Moderate pain	26(13.3%)	11(5.6%)	0.42(0.12, 1.49)	0.31(0.07, 1.36)
	Sever pain	7(3.6%)	7(3.6%)	1	1
Did you get analgesics	Yes	139(71.5%)	41(21) %	0.19(0.06, 0.58) *	0.3(0.08, 1.01)
	No	6(3.1%)	9(4.6%)	1	1
Analgesics before it request	Yes	51(26.2%)	7 (3.6%)	1	1
	No	94(48.2%)	43(3.6%)	3.33(1.39, 7.94) *	1.86(0.7, 4.96)
Did you get analgesics when need it	Yes	90(46.2%)	20 (10.3%)	0.41(0.21, 0.78)	-
	No	55(28.2%)	30 (15.4%)	1	-
Anti pain which allows you for different activity	Yes	106(54.4%)	19(9.7%)	0.23(0.11, 0.44)	-
	No	39(20%)	31(15.9%)	1	-
Non medicine pain management	Yes	134(68.7%)	3(1.5%)	0.05(0.01, 0.02)	-
	No	11(5.6%)	47(24.1%)	1	-

Table 4: shows Factor associated with Patient's Satisfaction with Postoperative Pain Management.

Discussion

The study aimed to assess the level of satisfaction of postoperative pain management in operated general surgery patients and its associated factors, between January 30 and March 2023. A total of 195 study participants were included in the study. From the total of the study participants 145(74.4%) who were satisfied on post op pain managements.

The analysis of the regression model revealed several factors that are significantly associated with patients' satisfaction with postoperative pain management. The factors identified in the study include alcohol use, pre-operative analgesics, and pain score. Understanding the impact of these factors on patient satisfaction is crucial for improving the quality of postoperative pain management services.

The study found that patients who reported alcohol use had higher odds of being satisfied with postoperative pain management compared to those who did not consume alcohol. This finding aligns with previous research conducted globally. Studies have suggested that alcohol consumption might influence the perception of pain and the effectiveness of pain management interventions. For example, alcohol has been shown to have analgesic properties, potentially affecting patients' pain experience and their satisfaction with pain

management. It is worth noting, however, that further research is needed to understand the mechanisms underlying this association [13, 14].

The analysis indicated that patients who received pre-operative analgesics had higher odds of being satisfied with postoperative pain management. This finding is consistent with existing literature that emphasizes the importance of adequate pain management before surgery. Pre-operative analgesics can help reduce pre-existing pain levels, leading to better pain control postoperatively. This finding highlights the significance of incorporating pre-operative pain management strategies as a component of comprehensive perioperative care [15].

The study revealed that patients with mild pain experienced lower odds of satisfaction compared to those with severe pain. This unexpected finding contrasts with commonly held beliefs that individuals with milder pain would report higher satisfaction as a result of experiencing less severe discomfort. However, previous research as suggested that patients with milder pain may have different expectations or perceptions regarding pain management, leading to lower satisfaction ratings. Further investigation is needed to understand the underlying reasons for this counterintuitive finding [16-20].

The analysis also demonstrated that the administration of pre-operative analgesics was significantly associated with higher odds of patient satisfaction. This finding emphasizes the importance of proactive pain management strategies prior to surgery, as pre-operative analgesics can help minimize pre-existing pain levels and enhance postoperative pain control. Integrating comprehensive pre-operative pain management protocols into perioperative care strategies is crucial for optimizing patient satisfaction outcomes.

Surprisingly, patients with mild pain were found to report lower odds of satisfaction compared to those with more severe pain. This unexpected finding suggests that patient expectations and perceptions regarding pain management may play a crucial role in determining satisfaction levels. Further investigation is warranted to identify the underlying factors influencing these perceptions and to design interventions that address the unique needs of patients experiencing mild pain.

Conclusion

Most of participants were satisfied with postoperative pain management. Regression analysis highlighted the significant influence of alcohol use, pre-operative analgesics, and pain score on satisfaction, consistent with global research. These insights are crucial for improving pain management practices in Ethiopia. Comprehensive approaches considering individual patient characteristics are essential to enhance satisfaction.

Declaration

Ethical Approval and Consent to Participants

Ethical clearance was obtained from the Institutional Review Board of Y12HMC (Reference number: Y12HMC 157/22, dated May 18/2022). Permission and written consent were taken from the college management. The information gained from the patients upon data collection was kept confidential by using codes for each card throughout the study. The procedures followed were by the ethical standards of the Helsinki Declaration.

Availability of Supporting Data

All data supporting the case report is available with the correspondence

Competing Interests

There are no competing interests that could potentially influence the objectivity and integrity of this research article.

Funding

There is no fund for this research article

Acknowledgments

We, the authors acknowledge all individuals involved in the comprehensive management of the patients. Furthermore, our gratitude extends to the administration of Yekatit 12 Hospital Medical College for granting permission to access and utilize the patients' medical records in the preparation of this article

References

1. Pongprasobchai, S., P. Vibhatavata, and P. Apisarnthanarak, Severity, treatment, and outcome of acute pancreatitis in Thailand: the first comprehensive review using revised Atlanta classification. *Gastroenterology research and practice*, 2017;2017:3525349. DOI: 10.1155/2017/3525349.
2. The, H.L., Tan, I.J., Lim, H.T., Ho, Y.Y., Ng, C.C., Mohd Ali, R., Ling, J.N., Lim, W.C., Pang, G.H.M., Chua, H.H., et al. Multi-Center Validation of Pain Assessment in Advanced Dementia (PAINAD) Scale in Malaysia. *Psych*. 2023; 5(3):792-801. DOI: <https://doi.org/10.3390/psych5030052>
3. Chan, Y.M., Association of chronic pain with physical function and mortality among older adults in rural Malaysia/Chan Yee Mang. 2020, Universiti Malaya. Retrieved from: <http://studentsrepo.um.edu.my/13276/>
4. Lovich-Sapola, J., C.E. Smith, and C.P. Brandt, Postoperative pain control. *Surgical clinics*, 2015. 95(2): p. 301-318. DOI: <http://dx.doi.org/10.1016/j.suc.2014.10.002>
5. Chit, H.H., A. Samsudin, and Y.Y. Kyaing, Do final-year medical students have sufficient knowledge of pain management? *Med J Malaysia*, 2020. 75(5): p. 568-573.
6. Zulkafli, A.W., Mohd Zakir, N. A. Z., Othman, et al., The nursing approaches for pain management in post-operative total knee replacement. *Asian Journal of Medicine and Biomedicine*, 2022. 6(2): p. 98-106. DOI: <https://doi.org/10.37231/ajmb.2022.6.2.468>
7. Kleibaitė, V. and M. Švagždienė, Chronic Pain after Cardiac Surgery in Patients with Different Methods of Postoperative Analgesia. Nursing education, research, & practice: NERP. Kaunas: *Lietuvos sveikatos mokslų universitetas*, 2020, vol. 10, no. 2., 2020.
8. Macková, D. and A. Pokorná, Management of postoperative pain. *KONTAKT-Journal of Nursing & Social Sciences related to Health & Illness*, 2020. 22(2). DOI: <http://dx.doi.org/10.32725/kont.2020.018>
9. Málek, J., et al., Postoperative pain management. Prague, *Czech Republic: Mladá fronta*, 2017. 1(1): p. 102-111.
10. Small, C. and H. Laycock, Acute postoperative pain management. *Journal of British Surgery*, 2020. 107(2): p. e70-e80. DOI: <https://doi.org/10.1002/bjs.11477>
11. Korwisi, B., Barke, A., Rief, W., et al., Chronic pain in the 11th revision of the international classification of diseases: users' questions answered. *Pain*, 2022. 163(9): p. 1675-1687. DOI: 10.1097/j.pain.0000000000002551.
12. Yang, M.M., Hartley, R.L., Leung, A.A., et al., Preoperative predictors of poor acute postoperative pain control: a systematic review and meta-analysis. *BMJ open*, 2019. 9(4): p. e025091. DOI: 10.1136/bmjopen-2018-025091.
13. Kao, S.-C., Tsai, H.-I., Cheng, C.-W., et al., The association between frequent alcohol drinking and opioid consumption after abdominal surgery: A retrospective analysis. *PLoS One*, 2017. 12(3): p. e0171275. DOI: <https://doi.org/10.1371/journal.pone.0171275>

-
14. Kao Sheng-Chin, K.S., et al., The association between frequent alcohol drinking and opioid consumption after abdominal surgery: a retrospective analysis. 2017.
DOI: <https://doi.org/10.1371/journal.pone.0171275>
 15. Ong, C.K.-S., Lirk, P., Seymour, R.A., et al., The efficacy of preemptive analgesia for acute postoperative pain management: a meta-analysis. *Anesthesia & Analgesia*, 2005. 100(3): p. 757-773.
DOI: 10.1213/01.ANE.0000144428.98767.0E.
 16. Argaw, F., Berhe, T., Assefa, S., et al., Acute postoperative pain management at a tertiary hospital in Addis Ababa, Ethiopia: A prospective cross-sectional study. *East & Central African Journal of Surgery*, 2019. 24(2).
 17. Kulkarni, A.R., Pusic, A.L., Hamill, J.B., et al., Factors associated with acute postoperative pain following breast reconstruction. *JPRAS open*, 2017. 11: p. 1-13.
DOI: 10.1016/j.jpra.2021.09.005.
 18. Pusic, A.L., Matros, E., Fine, N., et al., Patient-reported outcomes 1 year after immediate breast reconstruction: results of the mastectomy reconstruction outcomes consortium study. *Journal of Clinical Oncology*, 2017. 35(22): p. 2499. DOI: 10.1200/JCO.2016.69.9561.
 19. Roth, R.S., Qi, J., Hamill, J.B., et al., Is chronic postsurgical pain surgery-induced? A study of persistent postoperative pain following breast reconstruction. *The Breast*, 2018. 37: p. 119-125. DOI: 10.1016/j.breast.2017.11.001.
 20. Bayman, E.O., Parekh, K.R., Keech, J., et al., Preoperative patient expectations of postoperative pain are associated with moderate to severe acute pain after VATS. *Pain Medicine*, 2019. 20(3): p. 543-554.
DOI: 10.1093/pm/pny096.

Copyright: ©2024 Wondwossen Amtataw. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.