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Research Article

The Effect of Qur'anic Murottal Therapy on Postoperative Pain at Syekh Yusuf Regional General Hospital

Zulfikar Tahir¹, Mohamad Zulfadhly Majid^{1*}, Rivgi Afandy Ramadhan¹, Hilmi Khaula W¹

1) Department of Medical Education, Faculty of Medicine and Health Sciences, Muhammadiyah University of Makassar, Indonesia

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*Correspondence:

m.zulfadhly22@med.unismuh.ac.id

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ABSTRACT

Postoperative pain is a common problem that can slow down patient recovery. Non-pharmacological approaches such as Murottal Al-Qur'an therapy have the potential to help reduce pain intensity. This study aimed to determine the effect of Murottal Al-Qur'an therapy on pain among postoperative patients under general anesthesia. Methods: A quasi-experimental study with a pretest-posttest control group design was conducted on 76 postoperative patients at the Syekh Yusuf Regional General Hospital, Gowa Regency. Respondents were divided into an intervention group (listening to Murottal for 15 minutes) and a control group (no intervention). Pain intensity was measured using the Visual Analogue Scale (VAS). Data were analyzed using the Wilcoxon Signed Rank test and the Mann-Whitney test. Results The intervention group showed a significant decrease in pain intensity ($p=0.001$). The control group also experienced a decrease, but to a lesser extent ($p=0.031$). Between-group comparisons indicated a significant difference in the post-test results ($p=0.010$). Conclusion: Murottal Al-Qur'an therapy was associated with a reduction in postoperative pain intensity and may serve as a useful non-pharmacological adjunct therapy.



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INTRODUCTION

Postoperative pain is one of the major challenges in patient recovery. The presence of pain can slow the healing process, increase the risk of complications, and reduce the patient's quality of life. Pharmacological therapies, such as opioid and non-opioid analgesics, remain the mainstay of management; however, they are often associated with adverse effects including nausea, drowsiness, dependence, and other systemic complications (Nuzulullail et al., 2023)

Therefore, non-pharmacological interventions have increasingly been developed, including spiritual therapy. Several studies have demonstrated that listening to the Qur'an can significantly reduce stress and anxiety and improve hemodynamic parameters, such as heart rate and skin conductance (Hanafi et al., 2024; Moulai et al., 2023). Increases in alpha and theta wave activity have also been reported in EEG studies, which are associated with relaxation and emotional regulation when listening to sacred verses (Majidi & Rajabi-Tavakkol, 2025). Activation of the limbic system and the interaction between auditory pathways and the hypothalamus have been proposed as potential underlying mechanisms (Kannan et al., 2022).

Several studies have demonstrated that Qur'anic murottal therapy effectively reduces postoperative pain intensity across various surgical populations, including patients undergoing cesarean section, gynecologic procedures, and other general surgeries. Additional evidence indicates that exposure to Qur'anic recitation is associated with reduced opioid consumption and shorter length of stay in post-anesthesia care units (Maarof et al., 2023; Prihatno et al., 2025; Sulpat et al., 2024).

METHODS

This study employed a quasi-experimental design with a pretest–posttest control group. The research was conducted from May to August 2025 at the Teaching Hospital of the Faculty of Medicine and Health Sciences, Muhammadiyah University of Makassar, namely the Syekh Yusuf Regional General Hospital, Gowa Regency. The population consisted of all postoperative patients who underwent general anesthesia. A total sample of 76 respondents was obtained, comprising 38 individuals in the intervention group and 38 in the control group, selected through consecutive sampling.

The inclusion criteria were patients aged 19–60 years, Muslim, nine hours post-surgery, and willing to participate. The inflammatory response to surgical trauma increases progressively within the first 6–12 hours postoperatively, as indicated by elevated levels of pro-inflammatory cytokines such as interleukin-6 (IL-6), which become detectable within hours after surgery and reflect activation of the acute inflammatory phase following tissue injury. During the same period, the duration of action of initial analgesics, including both opioid and non-opioid agents, generally declines significantly if not maintained through continued administration, thereby rendering assessments performed within this timeframe more representative of early postoperative pain (Bayoumi et al., 2024; Reikeras et al., 2014). The exclusion criteria included patients with hearing impairment, those receiving additional analgesics, and individuals with severe comorbidities. The intervention involved providing Qur'anic murottal recitation (15 minutes) via headset to the intervention group, while the control group received standard care.

Pain intensity was measured using the Visual Analogue Scale (VAS). Blinding procedures



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were not implemented in this study due to the nature of the intervention. Therefore, both participants and outcome assessors were aware of group allocation. This may introduce the possibility of measurement bias, particularly given the subjective nature of VAS scoring. Data analysis included the Shapiro–Wilk test for normality, followed by the Wilcoxon Signed Rank test for paired data and the Mann–Whitney test for between-group comparisons. All statistical analyses were performed using IBM SPSS Statistics version 25.

Ethics

Ethical approval for this study was granted by the Ethics Committee for Research at the Faculty of Medicine and Health Sciences, Universitas Muhammadiyah Makassar (Reference Number : 769/UM.PKE/11/46/2025).

RESULTS

Characteristics Of Respondents

The characteristics of the respondents are presented in Table 1. By gender, 29 respondents (38.2%) were male, while the majority, 47 (61.8%), were female. In terms of age distribution, 7 respondents (9.2%) were adolescents, 63 (82.9%) were adults, and 6 (7.9%) were elderly. This indicates that the study population was predominantly female and adult.

Pain Intensity

The pain intensity characteristics of the respondents are shown in Table 2. During the pre-test assessment, half of the respondents reported mild pain (38 respondents; 50.0%), while 31 respondents (40.8%) experienced moderate pain. Severe pain was reported by 4

respondents (5.3%), and very severe pain by 3 respondents (3.9%).

As shown in Table 3, the post-test results demonstrated a shift toward lower pain intensity levels following the intervention. Most respondents reported mild pain (50; 65.8%), while 19 (25.0%) reported moderate pain. Additionally, 4 respondents (5.3%) reported no pain. In contrast, the proportions of respondents reporting severe and very severe pain decreased to 2 respondents (2.6%) and 1 respondent (1.3%), respectively.

Nonparametric Test

Based on the nonparametric statistical analysis, the Wilcoxon test for paired data showed a significant difference between pre- and post-test scores in the intervention group ($p = 0.001$), indicating an improvement following the intervention. In the control group, a significant difference was also observed between the pre-test and post-test scores ($p = 0.031$), although the magnitude of change was relatively smaller compared to the intervention group.

Based on the Mann–Whitney test for independent data, no significant difference was found between the intervention and control groups during the pre-test ($p = 0.201$), indicating that the baseline conditions of both groups were relatively comparable. However, in the post-test assessment, a significant difference was observed between the two groups ($p = 0.010$), suggesting that the intervention group achieved better outcomes than the control group following the intervention. These findings suggest that the intervention group experienced greater improvement compared to the control group, although causal inference is limited by the quasi-experimental design.



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Table 1. Characteristics of Respondents

Characteristics of Respondents	Frequency(n)	Percentage (%)
Gender		
Male	29	38.2
Female	47	61.8
Age		
Adolescent	7	9.2
Adult	63	82.9
Elderly	6	7.9

Table 2. Preoperative Pain Intensity (Pre-Test)

Pain Intensity	Frequency(n)	Percentage (%)
Mild	38	50.0
Moderate	31	40.8
Severe	4	5.3
Very Severe	3	3.9

Table 3. Postoperative Pain Intensity (Post-Test)

Pain Intensity	Frequency(n)	Percentage (%)
No Pain	4	5.3
Mild	50	65.8
Moderate	19	25.0
Severe	2	2.6
Very Severe	1	1.3

Table 4. Nonparametric Test Results

Nonparametric Test	p-Value
Wilcoxon Signed Rank	
Intervention Group	0.001
Control Group	0.031
Mann-Whitney	
Pre-test: Intervention vs. Control	0.201
Post-test: Intervention vs. Control	0.010

DISCUSSION

Based on the study findings, female respondents constituted the majority of the sample. Previous research has reported gender-related differences in pain perception, sleep quality, and inflammatory responses following thoracoscopic surgery. However, this study did not conduct subgroup analyses by sex; therefore, these considerations are presented as contextual background rather than definitive conclusions. Female patients tend to exhibit higher VAS pain scores, poorer sleep quality, and greater increases in the Systemic Inflammation Index (SII) compared to males (Wang et al., 2024). These findings align with research indicating that preoperative anxiety and depression are more strongly associated with postoperative pain in women, suggesting the role of psychological factors as mediators (Franqueiro et al., 2024; Salazar-Parra et al., 2020).

In addition, sex differences influence pain-response mechanisms. Although men have a higher density of certain neurons, women display distinct activation patterns in specific brain regions when exposed to painful stimuli. Overall, women tend to have a lower pain threshold for neuropathic, pressure-induced, and electrically stimulated pain (Failla et al.,

2024; Gutiérrez Lombana & Gutiérrez Vidal, 2012).

Furthermore, female patients have been reported to experience more severe postoperative symptoms that more substantially interfere with daily functioning compared to male patients. Theoretically, hormonal differences, stronger immune responses, and greater psychological vulnerability in women are believed to contribute to heightened postoperative pain, sleep disturbances, and inflammatory reactions (Liao et al., 2025).

Qur'anic murottal therapy was associated with reduced pain intensity among postoperative patients and may serve as a beneficial complementary intervention alongside standard pharmacological analgesia. Statistical analysis using the Wilcoxon Signed-Rank Test demonstrated a significant decrease in pain scores in the intervention group, suggesting that auditory exposure to Qur'anic recitation may facilitate physiological relaxation, reduce muscle tension, and modulate pain perception. In contrast, the control group showed comparatively smaller changes, indicating that routine postoperative care alone may be less effective in achieving similar reductions in pain intensity. Nevertheless, given the quasi-experimental design, further randomized



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controlled trials are warranted to confirm these findings and establish causal relationships.

The control group also demonstrated a significant reduction in pain intensity, indicating that postoperative pain relief cannot be solely attributed to the Qur'anic murottal intervention. This finding suggests that pain reduction may occur as part of the natural postoperative recovery trajectory. From a physiological perspective, postoperative pain gradually decreases as acute inflammatory responses resolve, nociceptor sensitization diminishes, and tissue repair processes progress following surgical injury (Brennan, n.d.).

These findings are consistent with the results reported by Aburuz et al. (2023), who demonstrated that listening to Qur'anic recitation effectively reduces pain intensity among post-CABG patients and is also associated with shorter lengths of stay in both the hospital and the ICU. Similar outcomes were reported by Siska Alvianda (2024), who found that murottal therapy effectively reduced pain scores among patients undergoing postoperative management of femoral fractures. Physiologically, exposure to Qur'anic murottal may induce relaxation through the activation of alpha brain waves and the stimulation of endorphin release, which serve to increase the pain threshold and reduce pain perception (Alvinda et al., 2024; Eid Aburuz et al., 2023)

Physiologically, the mechanism of action of murottal therapy can be explained through neurophysiological principles and cognitive psychological theories. Exposure to the recitation of Qur'anic verses stimulates the auditory system, subsequently enhancing alpha-wave activity in the brain, which is associated with relaxation and reduced anxiety. In addition, rhythmic and soothing auditory

stimuli are believed to activate endogenous pain-inhibitory pathways, including the release of endorphins and enkephalins, which function as the body's natural analgesics. These mechanisms collectively reduce pain-signal transmission to the central nervous system, thereby decreasing pain perception (Ghiassi & Keramat, 2018).

Maarof et al. (2023) also support these findings by reporting that patients undergoing laparoscopic cholecystectomy who received murottal therapy experienced a reduction in opioid analgesic requirements as well as shorter stays in the recovery unit (Maarof et al., 2023). In addition, Pervaiz et al. (2024) found that listening to Surah Ar-Rahman twice daily significantly decreased pain scores and ICU length of stay among critically ill patients (Pervaiz et al., 2024). A recent systematic review by Maming et al. (2025) further confirmed that murottal therapy is consistently effective in reducing pain perception, enhancing relaxation, and decreasing anxiety in hospitalized patients (Maming et al., 2025).

Murottal therapy is a nonpharmacological intervention that has demonstrated effectiveness in reducing pain, particularly among postoperative patients. Exposure to Qur'anic recitation helps redirect the patient's attention away from pain sensations. This therapy is considered to possess therapeutic effects that promote calmness, enhance relaxation, and reduce pain perception. Accordingly, murottal therapy can be recommended as a straightforward, non-pharmacological modality that is free of adverse effects and may serve as an effective adjunct for alleviating postoperative pain.

This study has several limitations. First, the quasi-experimental design without randomization limits causal inference and may introduce selection bias. Second, the study was



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conducted in a single center, which may restrict generalizability. Third, pain outcomes were assessed only in the short-term postoperative period. Fourth, the absence of blinding may introduce measurement and expectancy bias. Finally, psychological factors such as anxiety levels, spiritual coping, and religiosity were not assessed, although these variables may influence responses to Qur'anic recitation.

CONCLUSION

This study demonstrates that Qur'anic murottal therapy was associated with reduced pain intensity among postoperative patients undergoing general anesthesia. Qur'anic murottal therapy may serve as a safe, cost-effective, and easily applicable complementary approach in postoperative pain management. Beyond its analgesic effect, it also provides spiritual and psychological comfort that supports holistic recovery, making it a potential adjunct to pharmacological analgesics for reducing opioid dependence and adverse effects. Future studies are recommended to apply randomized controlled trial (RCT) designs with larger, multicenter samples and to explore optimal intervention parameters, including duration, frequency, sound intensity, and surah selection. Further assessment of physiological and psychological variables is also warranted to comprehensively elucidate the clinical benefits of murottal therapy in postoperative care.

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