



SYNERGY OF QURANIC RECITATION AND LAVENDER AROMATHERAPY IN REDUCING SURGICAL ANXIETY: A LITERATUR REVIEW

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ABSTRACT

Preoperative anxiety merupakan respons psikologis yang sering dialami pasien sebelum pembedahan dan berdampak negatif pada stabilitas hemodinamik serta pemulihan pascaoperasi. Pendekatan non-farmakologis seperti terapi murotal Al-Qur'an dan aromaterapi lavender telah digunakan untuk menurunkan kecemasan melalui relaksasi spiritual dan stimulasi sistem olfaktori. Kombinasi kedua terapi tersebut diyakini memberikan efek sinergis karena menyentuh dimensi fisiologis dan psiko-spiritual pasien secara bersamaan. Menilai efektivitas kombinasi terapi murotal dan aromaterapi lavender dalam menurunkan kecemasan preoperatif berdasarkan bukti ilmiah terbaru. Penelitian ini merupakan systematic review yang mengikuti pedoman PRISMA. Pencarian artikel dilakukan melalui PubMed, Scopus, SpringerLink, DOAJ, Garuda, dan Google Scholar dengan kata kunci yang mencakup murotal, aromaterapi lavender, kecemasan preoperatif, dan intervensi non-farmakologis. Dari 317 artikel teridentifikasi (2020–2025), sebanyak 205 artikel disaring, dan 10 studi memenuhi kriteria inklusi (RCT atau quasi-eksperimental pada pasien bedah). Penilaian kualitas metodologis menggunakan Joanna Briggs Institute (JBI). Terapi murotal terbukti menurunkan kecemasan dengan memodulasi sistem limbik dan meningkatkan keseimbangan saraf otonom. Aromaterapi lavender menurunkan kortisol dan menghasilkan relaksasi melalui mekanisme neuroendokrin-olfaktori. Kombinasi kedua terapi memberikan pendekatan holistik yang lebih komprehensif. Integrasi terapi murotal dan aromaterapi lavender efektif sebagai intervensi non-farmakologis dalam menurunkan kecemasan preoperatif dan layak diterapkan dalam asuhan keperawatan perioperatif.

Keywords: lavender aromatherapy; non-pharmacological interventions; preoperative anxiety; qur'anic recitation; surgical patients

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INTRODUCTION

Preoperative anxiety is a common psychological issue experienced by patients awaiting surgical procedures. This condition often arises from fear of pain, anesthesia, surgical outcomes, and even the risk of death. High levels of anxiety have been shown to increase blood pressure, heart rate, and oxygen consumption, thereby negatively affecting hemodynamic stability and increasing intraoperative anesthetic requirements (Kannan et al., 2022). Globally, approximately 60–80% of patients experience moderate to severe anxiety before surgery, with higher rates reported among those undergoing procedures of moderate to high risk (Tekbaş et al., 2024)

Pharmacological interventions, such as benzodiazepines, are commonly administered to alleviate preoperative anxiety. However, these medications are associated with adverse effects, including excessive sedation, respiratory depression, and postoperative cognitive impairment (Vongkittirux Sakchai et al., 2024). Consequently, non-pharmacological interventions have gained increasing attention as essential components of modern nursing practice, emphasizing holistic and humanistic care that integrates physiological, emotional, and spiritual dimensions (Stanley et al., 2020).

One of the non-pharmacological interventions proven to be effective is Qur'anic recitation therapy, which involves listening to the rhythmic recitation of sacred verses from the Holy Qur'an. This

intervention induces relaxation through the activation of the limbic system and the enhancement of alpha brain waves. The auditory stimulation from the recitation promotes endorphin release and reduces stress hormones such as cortisol and adrenaline, thereby physiologically contributing to anxiety reduction (Manisei et al., 2023). Similarly, lavender aromatherapy (*Lavandula angustifolia*) has demonstrated anxiolytic properties by activating gamma-aminobutyric acid (GABA) receptors in the brain and stimulating the olfactory–neuroendocrine pathway, leading to decreased sympathetic nervous system activity (Nurhasanah et al., 2024).

Recent studies have suggested that combining Qur'anic recitation therapy and lavender aromatherapy produces a synergistic effect that is more potent than either therapy alone. This combination acts through complementary mechanisms spiritual and neurophysiological pathways that together promote deep relaxation and a reduction in stress responses (Vongkittirux Sakchai et al., 2024). Such an approach aligns with the holistic nursing paradigm, which views patients as bio-psycho-socio-spiritual beings requiring integrated and compassionate care (Rosyanti et al., 2022). Based on this background, the present systematic review aims to determine the effectiveness of combining Qur'anic recitation therapy and lavender aromatherapy in reducing preoperative anxiety among surgical patients, grounded in empirical evidence from international studies.

METHOD

This study employed a systematic literature review design aimed at identifying and synthesizing scientific evidence regarding the effectiveness of combining Qur'anic murottal therapy and lavender aromatherapy in reducing anxiety among preoperative patients. The review focused on relevant research conducted in various surgical settings, emphasizing non-pharmacological interventions that are complementary and holistic in nature.

A comprehensive literature search was conducted using national and international scientific publications from 2020 to 2025. Six major electronic databases indexed by Scopus were utilized to ensure broad coverage and methodological rigor, including PubMed, Scopus, SpringerLink, DOAJ, Garuda, and Google Scholar. These databases were selected due to their wide accessibility, strong representation of health and nursing journals, and support for open-access scholarly resources.

The search strategy was guided by the PICO framework (Population, Intervention, Comparison, Outcome), employing keywords such as Quranic recitation, murottal, lavender aromatherapy, preoperative anxiety, surgical patients, non-pharmacological intervention, holistic care, and complementary therapy. Article selection procedures followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, encompassing four stages: identification, screening, eligibility assessment, and inclusion.

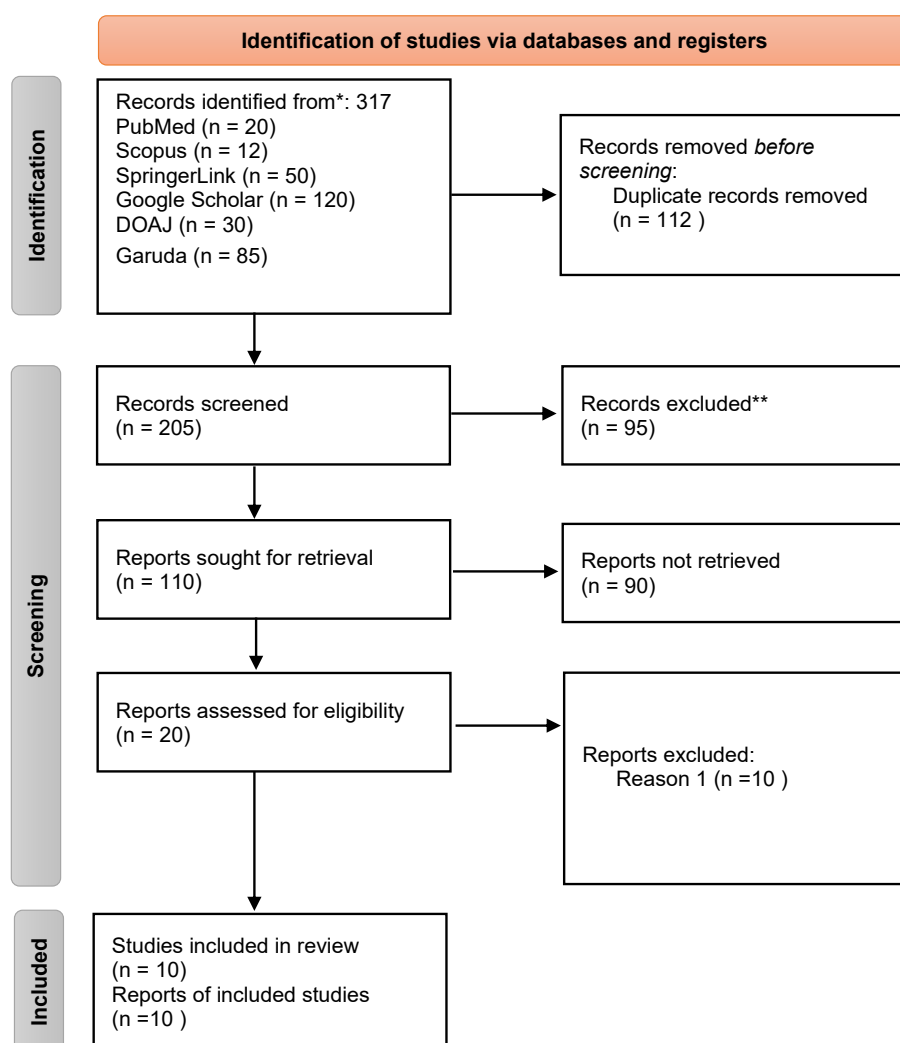
During the identification phase, a total of 317 articles were retrieved across all databases, including 20 articles from PubMed, 12 from Scopus, 50 from SpringerLink, 120 from Google Scholar, 30 from DOAJ, and 85 from Garuda. After removing 112 duplicate records, 205 unique articles remained for screening. In the screening phase, titles and abstracts were examined to confirm relevance to the combined intervention of Qur'anic murottal therapy and lavender aromatherapy in preoperative anxiety contexts. A total of 195 articles were excluded due to irrelevance, resulting in 20 articles eligible for full-text review. Eligibility assessment was conducted based on the following inclusion criteria: (1) studies investigating Qur'anic murottal therapy and/or lavender aromatherapy among preoperative patients; (2) anxiety measured as a primary outcome; (3) availability of full-text; (4) published from 2020–2025; and (5) written in English or Indonesian. Ten articles were excluded for not meeting one or more criteria, leaving ten studies included for final analysis.

The ten included studies were critically appraised using the Joanna Briggs Institute (JBI) Critical Appraisal Tools. Evaluation focused on methodological quality (study design, internal validity, and

bias control), strength and relevance of evidence (sample size, analytical methods, and alignment with research objectives), and contribution to understanding the effectiveness of combined Qur'anic murottal therapy and lavender aromatherapy in reducing preoperative anxiety. These studies were considered sufficiently representative for elucidating therapeutic mechanisms, intervention efficacy, and relevance to the physical, psychosocial-spiritual, and environmental dimensions of holistic preoperative patient care.

Table 1.
PICO Framework

P (Population)	Preoperative patients, including ophthalmic, minor, and major surgical patients, consisting of adolescents and adults experiencing anxiety prior to surgical procedures.
I (Intervention)	Combined intervention of Qur'anic <i>murottal</i> therapy (Qur'an audio recitation) and lavender aromatherapy as a non-pharmacological approach to reduce anxiety.
C (Comparison)	Control group receiving standard preoperative care without additional intervention, or a single-intervention group receiving either <i>murottal</i> therapy alone or lavender aromatherapy alone.
O (Outcome)	Reduction in preoperative anxiety levels, assessed using psychometric instruments such as the State-Trait Anxiety Inventory (STAI), Visual Analog Scale (VAS) for Anxiety, or comparable anxiety measurement scales.
S (Study Design)	Randomized Controlled Trials (RCTs) or quasi-experimental studies published between 2020–2025, sourced from PubMed, Scopus, SpringerLink, DOAJ, Garuda, and Google Scholar.



Picture 1. RISMA 2020 flow diagram

RESULT

The article search and selection process began with the identification stage, in which a total of 317 articles were retrieved from six electronic databases: PubMed (20 articles), Scopus (12 articles), SpringerLink (50 articles), Google Scholar (120 articles), DOAJ (30 articles), and Garuda (85

articles). After duplicate screening, 112 articles were identified as duplicates and removed, leaving 205 unique records for further screening. During the screening stage, the titles and abstracts of the 205 articles were reviewed to assess their relevance to the research focus, specifically the combined intervention of Qur'anic murottal therapy and lavender aromatherapy in preoperative patients. As a result, 195 articles were excluded due to irrelevance, and 20 articles proceeded to the eligibility assessment.

In the eligibility stage, full-text articles were examined based on predefined inclusion criteria: (1) focus on Qur'anic murottal therapy and/or lavender aromatherapy in preoperative patients; (2) preoperative anxiety as the primary outcome; (3) availability of full-text; (4) publication between 2020–2025; and (5) written in English or Indonesian. Of the 20 articles reviewed, five were excluded for the following reasons: (1) two articles were not available in full-text format; (2) two articles demonstrated low methodological quality based on the Joanna Briggs Institute (JBI) Critical Appraisal Tools; and (3) one article did not specifically examine the combined intervention or the preoperative anxiety outcome. Thus, ten studies met all eligibility criteria and were included for final synthesis. Characteristics of the included studies indicated variation in research design, comprising eight randomized controlled trials (RCTs) and two quasi-experimental studies. Across all studies, Qur'anic murottal therapy, lavender aromatherapy, or their combination consistently demonstrated a significant reduction in preoperative anxiety levels.

Table 2.
Analysis Article

No	Title	Authors (Year)	Country	Intervention	Objective	Design	Sample	Major Findings	Notes / Limitation
1	A Randomized Prospective Placebo-Controlled Study of the Effects of Lavender Aromatherapy on Preoperative Anxiety in Cataract Surgery Patients	Stanley et al. (2020)	USA	Lavender inhalation	Assess lavender aromatherapy on preoperative anxiety in cataract surgery	RCT, placebo-controlled	75	Significant reduction in anxiety vs. control	Limited to cataract patients only
2	The Effect of Inhalation Aromatherapy with Lavender Essential Oil in Patients Undergoing Cataract Surgery	Vongkittiru x Sakchai et al. (2024)	Thailand	“Laventhol” lavender blend inhalation	Evaluate aromatherapy on anxiety and pain in cataract surgery	Single-blinded RCT	89	Significant reduction in anxiety & pain	Specific population; single-blind
3	Effects of Listening to Quran Recitation and Nature Sounds on Preoperative Anxiety	A. Zulkifli et al. (2022)	Malaysia	Quran recitation vs nature sounds	Compare auditory therapies for preoperative anxiety	3-arm RCT	81	Both effective; no difference between groups	Did not separate surgical types
4	The Effect of Murottal Audio Therapy of Surah Ar-Rahman on Anxiety Levels of Preoperative Patients (NTB Provincial Hospital)	Nikmah et al. (2022)	Indonesia	Murottal (Ar-Rahman) audio	Assess effect on preoperative anxiety	Pre-experimental	16	Significant reduction after 15 min	No control group; small sample
5	The Effect of Murottal Ar-Rahman Therapy on Anxiety Levels in Preoperative Patients	Nur Islamyah et al. (2024)	Indonesia	Murottal (Ar-Rahman)	Evaluate murottal on preoperative anxiety	Quasi-experimental	30	Moderate anxiety decreased significantly	Lacks long-term evaluation

No	Title	Authors (Year)	Country	Intervention	Objective	Design	Sample	Major Findings	Notes / Limitation
6	Effects of Listening to Quran Recitation and Nature Sounds on Preoperative Anxiety Among Patients Undergoing Surgery	A. Zulkifli et al. (2022)	Malaysia	Quran recitation & nature sounds	Compare effects on anxiety	3-group RCT	81	Nature sounds better than control; Quran not significantly different from control	Need larger sample
7	The Effect of Inhalation Aromatherapy and Music Therapy on Anxiety and Pain in Patients Undergoing Shock Wave Lithotripsy (SWL)	Rohi Ganji et al. (2022)	Iran	Aromatherapy + music	Evaluate combined therapy on anxiety & pain	RCT (4 groups)	176	Combined therapy significantly reduced anxiety & pain	Not specific to preoperative cases only
8	The Effect of Qur'anic Murottal Therapy and Citrus (Orange) Aromatherapy on Anxiety Levels of Preoperative Patients	Setyawan et al. (2025)	Indonesia	Murottal + citrus aromatherapy	Examine combined effects on anxiety	Quasi-experimental	30	Both interventions significantly reduced anxiety	Limited generalizability
9	The Effect of Aromatherapy on Pain and Anxiety Levels Before Breast Biopsy: A Randomized Controlled Trial	Hancı et al. (2025)	Turkey	Lavender vs lavender-peppermint	Compare aromatherapy effects on pre-biopsy anxiety	RCT	135	Aromatherapy reduced anxiety & pain ($p < 0.05$)	Pain context differs from surgery
10	Murottal Qur'an Surah Ar-Rahman menurunkan tingkat kecemasan pasien pre-operasi katarak	Gunawan et al. (2022)	Indonesia	Murottal Surah Ar-Rahman	Assess murottal effect on preoperative cataract anxiety	Case study	2 cataract patients	Anxiety decreased after 15 minutes; vital signs stabilized	Very small sample (case study)

DISCUSSION

This systematic review identified and synthesized empirical evidence supporting the role of complementary therapies Qur'anic recitation (murottal) and lavender aromatherapy as effective non-pharmacological modalities in alleviating surgical and preoperative anxiety. The collective findings demonstrate a consistent anxiolytic effect of each intervention when administered independently. However, despite theoretical assumptions regarding their synergistic potential, high-quality evidence evaluating integrated implementation remains limited and methodologically inconsistent.

Comparison of Findings

The reviewed studies consistently demonstrate that both Quranic recitation and lavender aromatherapy are effective non-pharmacological interventions in reducing preoperative anxiety. Lavender aromatherapy, as shown in studies by Stanley et al. (2020, USA) and Vongkittirux et al. (2024, Thailand), significantly decreased anxiety levels among cataract surgery patients compared to placebo and control groups. These effects were accompanied by reduced pain and physiological stabilization, suggesting a calming influence mediated by olfactory pathways. Similar findings were observed in a non-surgical context by Hancı et al. (2025, Turkey), confirming lavender's broad anxiolytic potential across medical procedures.

In parallel, multiple studies within Muslim populations affirm the anxiolytic effect of Quranic recitation (Murottal). Nikmah et al. (2022) and Hernayanti & Mutiarasari (2024) reported significant reductions in preoperative anxiety after listening to Surah Ar-Rahman for 15 minutes, aligning with Gunawan et al. (2022), who observed improved vital signs in cataract patients post-intervention. A. Zulkifli et al. (2022, Malaysia) found that Quranic recitation and nature sounds both effectively reduced anxiety, emphasizing the therapeutic role of auditory stimuli in modulating emotional responses before surgery.

Although both modalities independently demonstrate efficacy, no prior study has combined Quranic recitation and lavender aromatherapy in a single intervention. Only one quasi-experimental study by Setyawan et al. (2025) attempted a similar multimodal approach combining Murottal therapy with citrus aromatherapy and reported significant anxiety reduction. This finding provides preliminary support for the hypothesis that synergistic interventions integrating sensory and spiritual modalities may enhance preoperative relaxation more effectively than single therapies.

Integration and Mechanistic Insight

The synergistic potential between Quranic recitation and lavender aromatherapy can be explained through a neurophysiological and psychospiritual integration model. Lavender's active compound, linalool, interacts with the GABAergic system, producing sedative and anxiolytic effects via modulation of limbic activity and decreased sympathetic tone (Stanley et al., 2020; Hancı et al., 2025). Meanwhile, Quranic recitation exerts a spiritual relaxation response mediated by auditory entrainment and meaning-based emotional regulation, enhancing parasympathetic activity and promoting calmness (Nikmah et al., 2022; Hernayanti & Mutiarasari, 2024).

When combined, these two modalities likely activate complementary mechanisms: lavender's olfactory-induced relaxation reduces physiological arousal, while Quranic recitation fosters inner peace and spiritual reassurance. This dual activation may synchronize cognitive and somatic domains of anxiety modulation, thereby producing a stronger, more holistic relaxation response. This concept is supported by findings from Rohi Ganji et al. (2022), where combined aromatherapy and music yielded superior anxiety reduction compared to single therapy. Thus, applying this integrative framework to Quranic recitation and lavender aromatherapy could represent an innovative, culturally sensitive approach for perioperative anxiety management.

Implication for Nursing Practice

From a nursing perspective, the synthesis highlights strong implications for the development of evidence-based complementary interventions in preoperative care. Nurses play a pivotal role in assessing, implementing, and evaluating non-pharmacological measures that enhance patients' psychological readiness before surgery. The integration of Quranic recitation and lavender aromatherapy aligns with holistic nursing models emphasizing physiological, psychological, and spiritual dimensions of care.

In Muslim-majority settings, such as Indonesia and Malaysia, combining these interventions may increase cultural acceptability and patient compliance. Furthermore, their simplicity, affordability, and safety profile make them suitable for bedside implementation without requiring specialized equipment. Nursing protocols can incorporate this dual intervention as part of routine preoperative anxiety management especially for patients contraindicated for pharmacologic anxiolytics or those preferring spiritual-based care.

Research Gap and Future Direction

Despite growing evidence, several gaps remain. Most studies on Murottal or lavender aromatherapy used small sample sizes and lacked rigorous control conditions (Nikmah et al., 2022; Gunawan et al., 2022). No randomized controlled trial has yet evaluated the combined synergistic effect of

Quranic recitation and lavender aromatherapy in surgical settings. Moreover, the duration, dosage, and standardized measurement of anxiety responses both subjective (questionnaire) and objective (physiological markers) have not been unified across studies.

Future research should focus on developing a standardized integrative intervention protocol, employing robust experimental designs with adequate sample sizes, and examining physiological correlates such as heart rate variability or galvanic skin response to confirm the biopsychospiritual model of anxiety reduction. The exploration of cultural adaptability across different religious backgrounds could also strengthen the generalizability of findings.

CONCLUSION

This literature review demonstrates that both Qur'anic recitation (murottal therapy) and lavender aromatherapy are effective non-pharmacological interventions for reducing preoperative anxiety. Each modality contributes to anxiety reduction through distinct yet complementary physiological and emotional relaxation mechanisms, indicating their potential to provide enhanced benefits when applied concurrently. Although substantial evidence supports the independent use of these interventions, research specifically examining their combined application remains limited. Further rigorously designed studies are needed to verify the synergistic effects of integrating Qur'anic recitation and lavender aromatherapy in perioperative care. Overall, the findings support the consideration of these interventions as holistic approaches to preoperative anxiety management within nursing practice.

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