

Foot Massage and Quranic Recitation for Pain Relief in Post-Cesarean Section Patients

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ABSTRACT

Introduction: Post-cesarean section pain is a common complication that may hinder maternal recovery, delay mobility, and disrupt early breastfeeding. While pharmacological treatments are available, non-pharmacological interventions such as foot massage and Quranic recitation have shown individual effectiveness in reducing pain.

Objective: This study aimed to explore the combined effect of foot massage therapy and Quranic recitation (Surah Ar-Rahman) on the pain levels of post-cesarean section patients.

Methods: A qualitative descriptive case study was conducted at RSUD Tidar Magelang from April 30 to May 7, 2025. Three primiparous Muslim women aged 20–35 years were selected through purposive sampling. Each participant received a 10–20-minute foot massage while simultaneously listening to Quranic recitation via headphones. Pain intensity was assessed using the Numeric Rating Scale (NRS) before and after the intervention over two consecutive days.

Results: All participants initially reported moderate pain levels (NRS score of 5). After the intervention, pain levels decreased to mild (NRS score 2–3). Patients reported feeling calmer and more comfortable, attributing the relief to the synchronization of massage with spiritual recitation. These results align with existing literature supporting the effectiveness of both interventions individually.

Conclusion: The combined application of foot massage and Quranic recitation effectively reduced postoperative pain in cesarean section patients. This culturally sensitive, non-pharmacological approach shows promise for holistic postpartum care, particularly in

Muslim-majority settings. Further research with larger samples and control groups is needed to confirm its broader applicability and clinical significance.

Keywords: : cesarean section, complementary therapy, foot massage, pain management

Introduction

Cesarean section (CS) is a surgical procedure in which a baby is delivered through incisions made in the abdominal wall and uterus. It is typically performed when vaginal delivery poses risks to the mother or the fetus, with common indications including labor dystocia, fetal distress, abnormal fetal positioning, placental complications, or a history of previous cesarean deliveries (Sung et al., 2024). Globally, the use of cesarean delivery has been steadily increasing, including in Indonesia. According to the 2018 Basic Health Research (Riskesdas), the prevalence of cesarean deliveries in Indonesia was 17.6%. This figure significantly increased to 25.9% based on data from the 2023 Indonesian Health Survey (Ministry of Health Republic of Indonesia, 2023). At the provincial level, Central Java reported a cesarean delivery prevalence of 24.9%, reflecting a similar trend in obstetric practices in the region. This growing prevalence warrants attention due to its potential implications for maternal health (Vogel et al., 2015).

One of the common complications following a cesarean section is postoperative pain, including pain at the incision and suture sites and lower back pain (Oktarosada & Yunitasari, 2024). Despite the availability of effective analgesics, up to 60% of women continue to experience significant pain within the first 24 hours after surgery (Zawn, 2018; Pratiwi et al., 2023). This acute pain can hinder maternal mobility and the Early Initiation of Breastfeeding (EIBF), potentially affecting the well-being and resilience of newborns delivered via cesarean section. Prompt and effective pain management is therefore essential. Both pharmacological and non-pharmacological strategies have been developed to manage post-cesarean pain, with massage therapy emerging as an effective non-pharmacological intervention (Wijayanti et al., 2024).

Massage therapy, particularly foot massage, has shown positive outcomes in relieving acute postoperative pain. The technique promotes relaxation and comfort, potentially diverting the brain's attention away from pain stimuli (Hidayah & Widayani, 2023). Types of massage used in pain management include hand massage, effleurage, deep back massage, and foot massage (Sari & Rumhaeni, 2020). Foot massage is especially promising due to the concentration of nerve endings in the feet that are connected to internal organs. This technique can be safely administered while the patient is in a supine position, minimizing abdominal movement and reducing pain intensity. It is typically applied around five hours after the administration of analgesics when pain may still persist (Hidayah & Widayani, 2023). Research by Muliani (2020) demonstrated a reduction in pain scores from 6 to 3 after 20-minute daily foot massage sessions over two days. Similarly, Wijayanti (2024) reported a decrease in pain scores from 5 to 2 following 10–15 minutes of foot massage therapy, with patients maintaining stable vital signs and showing signs of relaxation. These findings align with the results of Rahmah & Mulyadi (2019), who found that massage therapy supports parasympathetic activation, helping to regulate heart rate and pain perception effectively.

In addition to physical therapy, psychological and spiritual dimensions are critical in holistic pain management for post-cesarean patients, who are at risk of experiencing stress and anxiety. Spiritual interventions, such as Quranic recitation (murottal) therapy, have gained

increasing attention as complementary methods in postoperative care. Endarwati (2024) investigated the impact of listening to Quranic verses via headphones for 10 minutes, six hours after cesarean delivery and four hours post-analgesia. The results at RSUD Panembahan Senopati Bantul revealed a significant reduction in perceived pain, with patients shifting from predominantly moderate pain (76.67%) to mild pain (60%). The relaxation and calming effects induced by Quranic recitation contribute to reduced pain perception through both psychological and physiological pathways (Destiana et al., 2024).

While both foot massage and Quranic recitation therapies have demonstrated individual effectiveness, limited research has explored the combined application of these two non-pharmacological methods in managing post-cesarean pain. It is hypothesized that the integration of physical and spiritual therapies may produce a synergistic effect, offering enhanced pain relief and promoting holistic maternal recovery. Motivated by this potential, the present study aims to investigate the *Effect of Foot Massage Therapy and Al-Quran Murottal Therapy on the Pain Scale of Post-Caesarean Section Patients*.

Objective

This study aims to determine how foot massage therapy and the recitation of the Quran contribute to the reduction of pain levels in patients who have undergone a cesarean section.

Method

This study employed a qualitative descriptive design using a case study approach. The intervention was conducted at RSUD Tidar Magelang over the course of eight days, from April 30 to May 7, 2025. Three post-cesarean section patients were selected through purposive sampling based on predetermined criteria. The inclusion criteria included Muslim women aged between 20 and 35 years, primiparous, cooperative, and not having received strong analgesics within the last five hours. Patients who were in critical condition or had hearing impairments were excluded from the study.

Each participant received a combination intervention involving foot massage therapy and Quranic recitation. The foot massage was administered in a supine position following a standardized protocol for 10 to 20 minutes. Simultaneously, participants listened to an audio recording of Surah Ar-Rahman using headphones in a calm and quiet environment. Pain levels were measured before and after the intervention using the Numeric Rating Scale (NRS), which ranges from 0 (no pain) to 10 (severe pain). This intervention was applied over two consecutive days to assess consistency in pain reduction.

Ethical approval was obtained from the appropriate institutional ethics committee prior to the start of the study. Additionally, informed consent was obtained from all participants after they were given a clear explanation of the research objectives and procedures.

Result

Initial assessments conducted between April 30 and May 7, 2025, revealed that all three respondents experienced abdominal pain localized at the cesarean section incision site. The patients described the pain as sharp and burning, often resembling a cutting sensation. The intensity of pain increased with movement or positional changes, ranging from mild to severe, and recurred intermittently every 2 to 3 minutes. Based on these findings, the nursing diagnosis established in accordance with the Indonesian Nursing Diagnosis Standards (IDHS)

was Acute Pain (D.0077), characterized by verbal pain complaints, facial grimacing, and protective posture over the surgical site.

The planned nursing intervention was grounded in evidence-based practice, focusing on non-pharmacological pain management strategies. Specifically, the intervention combined foot massage therapy with Quranic murotal recitation to enhance both physical and psychological comfort.

The implementation followed a Standard Operating Procedure (SOP) adapted from the research by Marselina (2021). The procedure began with a clear explanation to the patient regarding the purpose, method, and duration of the therapy, followed by the acquisition of informed consent. Required materials—such as gloves, olive oil or baby oil, tissues, and an audio recording of Surah Ar-Rahman—were prepared. The patients were positioned comfortably in a supine position to facilitate both massage and relaxation.

Evaluation of the intervention was conducted at two points: five minutes and one hour after the administration of therapy. The patients reported feeling significantly calmer and more comfortable after the session. Additionally, they expressed that the synchronization of massage rhythms with Quranic recitation contributed to a more soothing experience. The combined intervention led to a consistent reduction in reported pain levels, transitioning from moderate to mild intensity.

Table 1. Respondent Characteristics

| Characteristics | Patient 1 | Patient 2 | Patient 3 |
|-----------------|---------------------|---------------------|---------------------|
| Age | 23 years old | 29 years old | 26 years old |
| Parity | Primipara | Primipara | Primipara |
| Experience | Never been in labor | Never been in labor | Never been in labor |

As presented in Table 1, all respondents were within the productive age range and were primiparous women with no previous labor or cesarean section experience.

Table 2. Pain Scale

| Patient's name | Pain scale before intervention | Pain scale after intervention (evaluation after 1 hour of therapy administration) | |
|----------------|--|--|---|
| | | First day | Second day |
| Mrs. D | P: Pain is felt when moving Q: sharp R: post-SC abdominal wound S: scale 5 T: disappears and reappears every 3 minutes | P: Pain is felt when moving Q: sharp R: post-SC abdominal wound S: scale 3 T: intermittent | P: Pain is felt when sitting for a long time Q: sharp R: abdominal wound post SC S: scale 2 T: intermittent |
| Mrs. P | P: Pain is felt when changing positions Q: sharp pain as a cut R: post-SC abdominal wound S: scale 5 | P: Pain is felt when changing positions Q: sharp R: post-SC abdominal wound S: scale 4 | P: Pain felt when trying to get up to sit Q: sharp R: post-SC abdominal wound S: scale 3 |

| | T: 2-3 minutes | T: intermittent | T: intermittent |
|--------|--|--|--|
| Mrs. A | P: Pain is felt when getting up from a sleeping position and when moving or coughing. Q: sharp R: post-SC abdominal wound S: scale 5 T: appears and disappears every 2 minutes | P: Pain is felt when getting up from a sleeping position. Q: sharp R: post-SC abdominal wound S: scale 4 T: intermittent | P: Pain is felt when getting up and wanting to walk Q: sharp R: post-SC abdominal wound S: scale 3 T: intermittent |

As shown in Table 2, all three respondents demonstrated a measurable decrease in pain intensity following the two-day intervention. Each patient initially reported a pain level of 5 (moderate), which was reduced to 2 or 3 (mild) after the combined foot massage and Quranic recitation therapy. These findings suggest the intervention's effectiveness in alleviating postoperative pain in cesarean section patients.

Discussion

Pain perception is influenced by multiple factors, including age, parity, and previous childbirth experience. Kartilah (2022) found that increasing age is associated with a greater tolerance to pain, likely due to the psychological adaptation that views pain as a normal postoperative experience. This finding is supported by You (2022), who reported that 56.4% of young adults (ages 19–64) and 57.1% of older adults (ages 66–84) experienced severe pain (>6 on a pain scale). While the incidence was comparable, young adults were noted to experience pain for longer durations, indicating that age-related psychological maturity may affect how pain is perceived and managed.

Parity, particularly primiparity, is another crucial determinant of postoperative pain response. Primiparous women often experience heightened pain intensity due to a lack of familiarity with the childbirth process. Getahun (2025) found that primiparous mothers reported significantly higher levels of postoperative pain compared to multiparous mothers. Contributing factors include the primiparous status itself, duration of surgery, and the type of anesthesia used. This suggests that physiological as well as psychological readiness plays an important role in pain tolerance during the postpartum period.

Prior experience with childbirth or surgery is often assumed to improve pain coping mechanisms; however, this is not always the case. Although past experiences can influence pain perception, they are not the sole determinants. Psychological states, social support, and pain management strategies are also significant contributors. Syarifah (2019) emphasized that while individuals with previous positive pain management experiences are generally more prepared to handle similar pain in the future, the effectiveness of such experience is context-dependent. Hence, pain response remains a multidimensional construct affected by internal and external factors.

The findings of this study also reinforce the effectiveness of non-pharmacological interventions in pain management, particularly the combination of foot massage therapy with Quranic recitation. The intervention led to a measurable decrease in postoperative pain among the respondents, from moderate to mild levels. This is consistent with the findings of

Muliani (2020), who reported that foot massage therapy significantly reduced pain levels in post-cesarean section patients, with a statistically significant p-value of 0.000. Endarwati (2024) also documented a similar outcome, noting a shift in pain intensity from moderate (76.67%) to mild (60%) after murotal therapy, particularly using Surah Ar-Rahman. The recitation of Surah Ar-Rahman is known for inducing psychological calm and relaxation, as reflected in the Quranic verse from Surah Az-Zumar (39:23), which describes the emotional and spiritual response of believers to the remembrance of Allah (Sumaryani, 2015; Endarwati, 2024).

The efficacy of combining physical and spiritual therapies is further supported by Safitri and Safrudin (2024), who demonstrated that Quranic recitation combined with foot and hand massage reduced chest pain in patients with ST-Elevation Myocardial Infarction (STEMI). Although the patient populations differ, the results underline the potential of integrating spiritual and physical care to holistically manage pain. These findings strengthen the argument that pain management should not rely exclusively on pharmacological approaches but can benefit from holistic strategies that address emotional and spiritual well-being (Yusuf & Fitriani, 2019; Prasetyo et al., 2020).

Despite these promising findings, this study has several limitations. First, the sample size was small, limiting the generalizability of the results. Second, the absence of a control group makes it difficult to attribute pain reduction solely to the intervention. Third, the subjective nature of pain, which is strongly influenced by psychological and social variables, was not fully controlled. Future research should involve a larger, more diverse sample and utilize an experimental design with a control group to validate these findings. Furthermore, the role of psychological and spiritual factors in modulating pain should be explored in greater depth to develop more comprehensive, patient-centered pain management strategies.

Conclusion

This case study concludes that the combination of foot massage therapy and Quranic recitation, particularly Surah Ar-Rahman, is effective in reducing post-cesarean section pain while enhancing psychological comfort and spiritual tranquility in primiparous Muslim women. Administered 5–6 hours post-surgery, this 10–20 minute non-pharmacological intervention not only aligns with patients' cultural and religious values but also offers a simple, safe, and ethically sound approach to holistic postpartum care. Its feasibility and acceptability in clinical settings, especially within Muslim-majority contexts, make it a promising complementary therapy. However, further research with larger and more diverse populations is essential to validate these findings and assess their generalizability.

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Not applicable.

Authors' contribution

Each author contributed equally in all the parts of the research. All authors have critically reviewed and approved the final draft and are responsible for the content and similarity index of the manuscript.

Conflict of interest

The authors declare that there is no conflict of interest regarding the conduct and reporting of this study. All research processes were carried out independently without any external influence, sponsorship, or institutional intervention that could affect the study's outcomes.

Ethical consideration

This study was approved by the Health Research Ethics Commission of Universitas Muhammadiyah Yogyakarta, Approval No: 012/KEPK-FKIK/IV/2025.

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