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Effleurage Massage and Warm Compress Interventions to Reduce Postpartum Abdominal Pain: An Explanatory Case Series Study

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ABSTRACT

Background: Uterine contractions resulting from involution are triggered by oxytocin release, often causing abdominal cramping (*afterpains*) that disrupts a mother's physical and psychological adaptation. Non-pharmacological approaches, such as effleurage massage and warm compresses, are increasingly recognized as safe, comfortable, and low-risk interventions in maternity nursing care.

Purpose: To evaluate the effect of combined effleurage massage and warm compress interventions on the adaptation process and reduction of afterpains among postpartum mothers.

Methods: This study utilized an explanatory case series design with a pretest–posttest approach, combining visual pain scale observations and qualitative interviews. The sample consisted of four multiparous postpartum mothers. Interventions were administered in two sequence patterns for a total duration of 30 minutes per participant: two participants received a warm compress followed by an effleurage massage, while the other two received an effleurage massage followed by a warm compress. Data were analyzed by evaluating pain score changes alongside qualitative interview responses.

Results: Initial baseline observations revealed moderate abdominal pain scores across all four participants (pretest). Following the 30-minute combined intervention, all participants experienced a 2-point reduction in pain scale scores, regardless of the intervention sequence order. Qualitative findings supported these results, with participants reporting improved comfort and physical relaxation.

Conclusion: The combination of effleurage massage and warm compresses is effective in reducing postpartum abdominal pain and promoting maternal physical adaptation, regardless of the sequence of administration.

Keywords : Afterpains, Effleurage Massage, Maternity Nursing, Postpartum Abdominal Pain, Warm Compress.

BACKGROUND

Postpartum contraction pain, are a common physiological discomfort experienced by mothers, particularly multiparous women (Sri & Farida, 2026). This pain arises from uterine

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contractions during the involution process, which are triggered by the hormone oxytocin. This condition can interfere with a mother's physical and psychological adaptation during the postpartum period. On a global scale, the Maternal Mortality Rate (MMR) remains a major health issue. Data shows an increase in maternal deaths in Indonesia, with 3,572 cases recorded in 2022 (Kementerian Kesehatan RI, 2023) . Although afterpains do not directly cause death, the discomfort they cause can affect a mother's overall recovery process. Non- pharmacological approaches have been recognized as an effective and low-risk alternative in maternal nursing interventions (Deussen et al., 2020).

Two widely used methods are effleurage massage and warm compresses. Effleurage massage is a massage therapy that aims to improve blood circulation and create a physical and psychological relaxation effect (Ibrahim & Kamal Ali, 2020). Meanwhile, warm compresses work through a heat conduction mechanism, causing vasodilation and tissue relaxation, which contributes to a reduction in pain perception (Ahmed et al., 2023). Both of these methods have been proven effective in supporting pain management (Pitriani et al., 2023).

Although the effectiveness of both these interventions has been widely studied separately, this research examines the implications of a combined intervention of effleurage massage and warm compresses on afterpains adaptation in postpartum (Chotimah & Ariestantia, 2026) . The general objective of this study is to determine the impact of this intervention and to identify the most effective sequence for its administration (Islamiah et al., 2020). It is hoped that the results of this research can provide strong scientific evidence and become a practical reference for nurses in providing evidence-based nursing care.

METHODS

Design and Setting

This study adopted an explanatory case series design to investigate and explain the comparative effects and response mechanisms of two interventions Warm Compress and Effluerage Massage for 4 participant.

Participants and Sampling

A total of four postpartum were included: Participants 1 and 2 received totally intervention for 30 minute: Warm Compress and Effluerage Massage. Participants 3 and 4 received totally intervention for 30 minute: Effluerage Massage and Warm Compress.

Instruments and Data Collection

This study used direct pain scale observation using the VAS (Visual Analogue Scale) and interview evaluation with participants after the administration of effleurage massage and warm compress interventions, with a final evaluation using SOAP (Subjective data, Objective data, Assessment, and Plan) (Nugent et al., 2021).

Data Analysis

Data were analyzed using a descriptive-explanatory approach through cross case comparison beetween before and after intervention are effluerage massage and warm compress

with Visual Analogue Scale (VAS) observation (Nugent et al., 2021) . Interview result evaluation are explain for the conducting from pain scale observation (Bosdet et al., 2021).

Ethical Considerations

This study has received ethical clearance from the Faculty of Medicine, Mulawarman University No. 99/KEPK-FK/V/2025.

RESULTS

Pain Observation Results using the Visual Analogue Scale (VAS):

The average pain score (pre-intervention) among the four participants was 4, which falls into the moderate pain category. Following the intervention, the average pain score (post intervention) significantly decreased to 2, indicating mild pain.

Table 1. Participant Distribution Based on Abdominal Pain Scale Observation Results Before and After Intervention

Participant	Intervention	Pain Scale before intervention	Pain Scale after intervention	Decrease in pain score
P1 (30 Th)	Warm Compress + Effleurage Massage for 30 minute	4	2	2
P2 (39 Th)	Warm Compress + Effleurage Massage for 30 minute	4	2	2
P3 (25 h)	Effleurage Massage + Warm Compress for 30 minute	4	2	2
P4 (30 Th)	Effleurage Massage + Warm Compress for 30 minute	4	2	2

Pain Evaluation Interview Results:

Qualitatively, this intervention provided a significant emotional relaxation effect and physical comfort. Based on the interviews, participants reported that their pain decreased and they felt "very comfortable" following the intervention. One participant specifically mentioned that their back pain, which had previously made it difficult to sleep, was reduced.

Table 2. Participant Distribution Based on Pain Interview Results

Participant	*Subjective (S)*	*Objective (O)*	*Assessment (A)*	*Planning (P)*
P1 (30 Th)	The patient stated, "At first the pain was quite noticeable, but after the compress and massage, it became mild" (Palliative: Postpartum contractions, Quality: Cramping,	Pain complaints appeared to decrease adequately, VAS (4) → (2); the patient appeared relaxed, was not grimacing, and the uterine fundus was palpable 1 fingerbreadth	Acute pain partially resolved, marked by the outcome criteria: pain complaint improved from 4 (Moderate) to 2 (Substantially Decreased)	Discontinue intervention; provide health education regarding warm compresses and effleurage massage assisted by family if pain becomes bothersome, to help

	Region: Abdomen, Scale: 2 - Mild Pain [VAS], Time: Intermittent)	below the umbilicus and firm."		the patient adapt to the pain.
P2 (39 Th)	The patient stated, "At first the pain was quite noticeable, but after the compress and massage, it became mild" (Palliative: Postpartum contractions, Quality: Cramping, Region: Abdomen, Scale: 2 - Mild Pain [VAS], Time: Intermittent)	Pain complaints appeared to decrease adequately, VAS (4) → (2); the patient appeared relaxed, was not grimacing, and the uterine fundus was palpable 1 fingerbreadth below the umbilicus and firm."	Acute pain partially resolved, marked by the outcome criteria: pain complaint improved from 4 (Moderate) to 2 (Substantially Decreased)	Discontinue intervention; provide health education regarding warm compresses and effleurage massage assisted by family if pain becomes bothersome, to help the patient adapt to the pain.
P3 (25 Th)	The patient stated, "At first the pain was quite noticeable, but after the compress and massage, it became mild" (Palliative: Postpartum contractions, Quality: Cramping, Region: Abdomen, Scale: 2 - Mild Pain [VAS], Time: Intermittent)	Pain complaints appeared to decrease adequately, VAS (4) → (2); the patient appeared relaxed, was not grimacing, and the uterine fundus was palpable 1 fingerbreadth below the umbilicus and firm."	Acute pain partially resolved, marked by the outcome criteria: pain complaint improved from 4 (Moderate) to 2 (Substantially Decreased)	Discontinue intervention; provide health education regarding warm compresses and effleurage massage assisted by family if pain becomes bothersome, to help the patient adapt to the pain.
P4 (30 Th)	The patient stated, "At first the pain was quite noticeable, but after the compress and massage, it became mild" (Palliative: Postpartum contractions, Quality: Cramping, Region: Abdomen, Scale: 2 - Mild Pain [VAS], Time: Intermittent)	Pain complaints appeared to decrease adequately, VAS (4) → (2); the patient appeared relaxed, was not grimacing, and the uterine fundus was palpable 1 fingerbreadth below the umbilicus and firm."	Acute pain partially resolved, marked by the outcome criteria: pain complaint improved from 4 (Moderate) to 2 (Substantially Decreased)	Discontinue intervention; provide health education regarding warm compresses and effleurage massage assisted by family if pain becomes bothersome, to help the patient adapt to the pain.

DISCUSSION

The findings of this study demonstrate that the combination intervention of warm compresses and effleurage massage in reducing abdominal pain intensity in postpartum mothers. A reduction in Visual Analog Scale (VAS) pain scores was observed across all 4

participants, decreasing from a score of 4 to 2. Findings from this explanatory case series indicate that non-pharmacological methods can be utilized to alleviate postpartum pain. Furthermore, participants reported feeling comfortable with the provided intervention (Ahmed et al., 2023).

These findings are consistent with existing theories and previous studies demonstrating the effectiveness of warm compresses and massage in reducing pain (Aristanti et al., 2020). Warm compresses work through heat conduction mechanisms that induce vasodilation or the widening of blood vessels, thereby enhancing blood flow to the affected area (Modoor et al., 2021) . Meanwhile, effleurage massage stimulates nerve fibers through gentle touch, which promotes endorphin production, induces relaxation, and diverts attention away from pain sensations (Hidayati et al., 2024).

Consequently, the combination of these two methods creates a synergistic effect that effectively reduces pain intensity (Nouira et al., 2024). This study provides robust scientific evidence that this combined intervention can serve as a practical reference for nurses in delivering evidence-based nursing care. These findings also highlight the importance of a holistic approach to pain management that addresses not only physiological issues, but also supports the psychological adaptation and comfort of postpartum mothers (Aristanti et al., 2020).

Limitations

The main limitation of this study design is that it solely aimed to demonstrate and explain the effects of effleurage massage and warm compresses in reducing postpartum abdominal pain. As a case series with a small sample size, further quantitative research involving larger sample sizes is required. Furthermore, measurements in this study were limited to pain scale observations using the VAS and qualitative interviews to evaluate and corroborate the pain observations. Although the results demonstrate that non-pharmacological interventions are feasible and proven to reduce postpartum abdominal pain scores, further research with larger samples is necessary to allow for generalization.

Implications for Nursing Practice

The non-pharmacological interventions of effleurage massage and warm compresses are proven to reduce postpartum abdominal pain; thus, these techniques can be implemented to enhance postpartum patient comfort. Future research should be conducted with larger sample sizes to enable the generalization of this intervention.

CONCLUSION

Based on the case study conducted, it can be concluded that the combination intervention of warm compresses and effleurage massage is effective in reducing afterpains in postpartum mothers. These findings directly address the objective of this study, which was to identify and describe the application of effleurage massage and warm compresses. The results demonstrated a significant reduction in pain scores, decreasing from an average moderate pain level (VAS = 4) to mild pain (VAS = 2). This reduction was corroborated by post-intervention interview responses, where participants reported experiencing relaxation and increased

physical comfort, helping them adapt to the pain. Warm compresses and effleurage massage can successfully reduce pain scores to a mild level (Nengsih Yulianingsih & Violin Jelita Tarahati, 2024). This non-pharmacological intervention can be implemented as part of evidence-based nursing care that carries minimal risk and supports the holistic recovery of postpartum mothers.

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AUTHOR CONTRIBUTIONS

Anik Puji Rahayu: Conceptualization, Methodology, Investigation, Formal analysis, Writing - original draft. **Sofia Ananda Mutiara Sari:** Supervision, Validation, Writing - review and editing.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

DECLARATION OF AI USE

The authors did not use AI tools in preparing this manuscript.

REFERENCES

Ahmed, A., Ali, W., & Abdelrahman, W. (2023). Effect of Acupoint Hot Compresses on the Occurrence of Postpartum Urinary Retention and Its Consequences among Women after Vaginal Delivery. *Assiut Scientific Nursing Journal*, *11*(40), 374–387. https://doi.org/10.21608/asnj.2024.251421.1723

Aristanti, P. D. G., Rinata, E., & Widowati, H. (2020). Midwifery Care for Postpartum Mothers with Afterpains Discomfort in Maternity Hospital. *Indonesian Journal of Innovation Studies*, *10*(1), 1–9. https://doi.org/10.21070/ijins.v10i.501

Bosdet, L., Herron, K., & Williams, A. C. d. C. (2021). Exploration of Hospital Inpatients' Use of the Verbal Rating Scale of Pain. *Frontiers in Pain Research*, *2*(August), 1–12. https://doi.org/10.3389/fpain.2021.723520

Chotimah, C., & Ariestantia, D. R. (2026). *Pengaruh Massage Effleurage pada Ibu Postpartum Multipara dalam Penurunan Intensitas Nyeri After Pains di Klinik Kusuma Kota Samarinda*. *4*(2), 588–597. https://doi.org/doi.org/10.35870/ljit.v4i2.8638

Deussen, A. R., Ashwood, P., Martis, R., Stewart, F., & Grzeskowiak, L. E. (2020). Relief of pain due to uterine cramping/involution after birth. *Cochrane Database of Systematic Reviews*, *2020*(10). https://doi.org/10.1002/14651858.CD004908.pub3

Hidayati, T. A., Mualifah, L., & Riyana, S. (2024). Application of effleurage massage technique in postpartum pain. *Global Health Science Group*, *5*(2), 651.

http://jurnal.globalhealthsciencegroup.com/index.php/PICNHS

Ibrahim, H. I., & Kamal Ali, W. (2020). Effect of effleurage massage versus warm application on shoulder pain among postoperative women with gynecological laparoscopic surgery. *Journal of Nursing Education and Practice*, *10*(4), 51. https://doi.org/10.5430/jnep.v10n4p51

Islamiah, N. I., Hanum, S. M. F., & Azizah, N. (2020). Midwifery Care for Postpartum Mothers With After Pains Discomfort in Maternity Hospital. *Indonesian Journal of Innovation Studies*, *11*, 1–4. https://doi.org/10.21070/ijins.v11i1.513

Kementerian Kesehatan RI. (2023). *Profil Kesehatan Indonesia 2022*.

Modoor, S., Fouly, H., & Rawas, H. (2021). The effect of warm compresses on perineal tear and pain intensity during the second stage of labor: A randomized controlled trial. *Belitung Nursing Journal*, *7*(3), 210–218. https://doi.org/10.33546/bnj.1452.

Nengsih Yulianingsih, & Violin Jelita Tarahati. (2024). Implementasi Kompres Hangat pada Pasien Nyeri Akut di Ruang Gincu 1 RSUD Indramayu. *NAJ : Nursing Applied Journal*, *2*(3), 95–102. https://doi.org/10.57213/naj.v2i3.382

Nouira, M., Souayeh, N., Kanzari, S. A., Rouis, H., Lika, A., Mbarki, C., Rahali, F. Z., & Bettaieb, H. (2024). Aromatherapy Using Lavender Oil Effectiveness on Pain and Anxiety After C-Section: A Randomized Controlled Trial. *Journal of Epidemiology and Global Health*, *14*(4), 1536–1544. https://doi.org/10.1007/s44197-024-00305-6

Nugent, S. M., Lovejoy, T. I., Shull, S., Dobscha, S. K., & Morasco, B. J. (2021). Associations of Pain Numeric Rating Scale Scores Collected during Usual Care with Research Administered Patient Reported Pain Outcomes. *Pain Medicine (United States)*, *22*(10), 2235–2241. https://doi.org/10.1093/pm/pnab110

Pitriani, P., Rini, A. S., & Putri, R. (2023). Teknik Effleurage Massage dan Kompres Hangat Berpengaruh terhadap Penurunan Tingkat Nyeri Afterpains pada Ibu Nifas di PMB A Kota Jakarta Selatan Tahun 2022. *SIMFISIS Jurnal Kebidanan Indonesia*, *2*(4), 426–433. https://doi.org/10.53801/sjki.v2i4.142

Sri, P., & Farida, E. (2026). Case Study Analysis of Post Partum Nursing Care with Acute Pain Nursing Problems Given Counterpressure Massage Action. *Assyifa Jurnal Ilmu Kesehatan*, *4*(1), 390–399. http://assyifa.forindpress.com/index.php/assyifa/index.