

ARTICLE INFORMATION

Received: April 17, 2026

Revised: April 26, 2026

Available online: April 28, 2026

at: <https://e-jurnal.iphorr.com/index.php/mchc>

The effect of lemongrass peel aromatherapy on baby blues syndrome among postpartum mothers

Raffiky Pinandia*, Wiwik Muhidayati

STIKes Rajekwesi Bojonegoro

Corresponding Author: *raffiky.pinandia@rajekwesi.ac.id

Abstract

Background: In Indonesia, the prevalence of Baby Blues Syndrome is relatively high. The Ministry of Health (2023) reported an incidence rate ranging from 50%–70%, or approximately 1–2 cases per 1,000 births. Furthermore, data from the National Population and Family Planning Agency shows that approximately 57% of mothers experience symptoms of baby blues, making Indonesia one of the countries with a high prevalence in Asia. If left untreated, this condition can negatively impact the mother-baby relationship and increase the risk of postpartum depression. The "Calm Mom – Baby Happy" innovation utilizes a combination of orange peel and lemongrass aromatherapy as a non-pharmacological intervention.

Purpose: To determine the effectiveness of orange peel and lemongrass aromatherapy in reducing the level of baby blues syndrome symptoms in postpartum mothers in Dander District. It provides a relaxing effect.

Method: This study used a quasi-experimental design with a pre-test and post-test control group design. The study population was postpartum mothers in the Dander Community Health Center (Puskesmas) area, with a sample of [insert number] respondents drawn through a purposive sampling technique. The level of baby blues was measured using the Edinburgh Postnatal Depression Scale (EPDS). The intervention consisted of 15 minutes of aromatherapy inhalation daily for one week.

Results: Statistical analysis using the Wilcoxon Signed Rank Test showed a significant decrease in EPDS scores after the intervention (p -value < 0.05). Before the intervention, the majority of respondents were in the moderate to high-risk category for baby blues, while after the intervention, most respondents experienced reduced nervous tension and reported better sleep quality.

Conclusion: Orange peel aromatherapy, rich in limonene, works to suppress the sympathetic nervous system, while the citral content in lemongrass has a mild sedative effect. Inhalation through the limbic system stimulates the release of endorphins and serotonin, which create a sense of calm. This proves that the combination of these two local ingredients is effective in stabilizing the emotions of postpartum mothers without any medical side effects.

Suggestion: This method is recommended as a self-help therapy at home for postpartum mothers in Dander District to improve maternal mental well-being and the quality of infant care.

Keywords: Baby Blues; Complementary Therapy; Orange Peel Aromatherapy; Postpartum.

INTRODUCTION

The postpartum period (puerperium) begins after the delivery of the placenta and ends with the return of the uterus to its pre-pregnancy state, lasting approximately six weeks. There are three stages of postpartum: immediate postpartum, mid-postpartum, and late postpartum. The early stages of labor require adjustment to the drastic changes that occur in the first 24 hours, which can quickly fatigue and stress the mother. Psychologically, this can affect hormones. This special stage requires attention to addressing the physical changes postpartum during pregnancy, including changes in the reproductive system, including changes to the uterus, cervix, vulva, vagina, and pelvic floor muscles (Victoria & Yanti, 2021).

Improving maternal mental health is crucial for the health of both mother and child (Imaroh & Mesra, 2024). Baby blues syndrome is a psychological illness that can arise during pregnancy and the postpartum period. Rapid mood swings, depression, anxiety, irritability, and fatigue in mothers after childbirth are characteristic of this disorder. Baby blues syndrome can progress to the more severe form of postpartum depression if not properly treated (Aryani, Afriana, & Faranita, 2022).

Globally, the incidence of Baby Blues Syndrome varies widely. According to the World Health Organization (WHO), the incidence of baby blues syndrome experienced by mothers after childbirth is around 70-80% worldwide, with approximately 13% of mothers experiencing baby blues progressing to postpartum depression. Incidence rates of Baby Blues Syndrome in several countries include 15-50% in Japan, 27% in the United States, 31.7% in France, 31.3% in Nigeria, and 44.5% in Greece (Nabilatus & Sultan, 2025).

In Indonesia, the prevalence of Baby Blues Syndrome is relatively high. The Ministry of Health (2023) reported an incidence rate ranging from 50%-70%, or approximately 1-2 cases per 1,000 births. Furthermore, data from the National Population and Family Planning Agency shows that approximately 57% of mothers experience baby blues symptoms, making Indonesia one of the countries with a high prevalence in Asia (Ministry of Health of the Republic of Indonesia, 2023). At the regional level, research written at the Mojowarno Community Health Center, Jombang Regency, shows that approximately 57% of postpartum mothers experience Baby Blues Syndrome (Danistya, 2024). Moreover, at the local level, research written in Campurejo Village, Bojonegoro Regency, shows that the incidence of postpartum blues is influenced by factors such as age, education, and obstetric status (Saraswati, 2018).

Aromatherapy is a non-pharmacological treatment that uses essential oils or pure oil extracts to maintain or improve health, stimulate passion and energy, stimulate the healing process, and refresh and soothe the soul (Wijayanti, Marting, & Bistara, 2019). There are various methods of administering aromatherapy, including massage, using an oil burner or heater, inhalation, immersion, direct application, gargling, spraying, and air fresheners (Arianti, E. (2024).

Direct use of aromatherapy, namely through the nose (inhalation), is a much faster method compared to other methods. Directly inhaling oils stimulates the olfactory nerve, the primary sensory nerve, to react. This allows the oil to have specific benefits on the limbic system, the center of human memory, mental objects, and mood (Jaelani, 2009). Furthermore, aroma affects the human brain almost as much as drugs, and our noses have the ability to distinguish over 100,000 different aromas. These aromas influence the brain in relation to mood, emotions, memory, and learning (Huck, 2010).

RESEARCH METHOD

This study used a quantitative approach with a Quasi-Experimental design through a Pretest-Posttest Control Group Design. This study aimed to measure the effectiveness of a combination of orange peel and lemongrass aromatherapy on reducing the level of baby blues syndrome symptoms in postpartum mothers. This study was conducted in the Dander District Community Health Center (Puskesmas). The location was selected purposively considering the high number of deliveries and the prevalence of

Raffiky Pinandia*, Wiwik Muhidayati

STIKes Rajekwesi Bojonegoro

Corresponding Author: *raffiky.pinandia@rajekwesi.ac.id

DOI: 10.56922/mchc.v5i1.3051

Calm mom–baby happy: utilizing lemongrass peel aromatherapy to treat baby blues syndrome in postpartum mothers

postpartum mothers at risk of experiencing psychological disorders in the area. The study lasted for three months, from December to March 2026. The population in this study were all postpartum mothers (days 3 to 14) in Dander District.

The sampling technique used purposive sampling with the following inclusion criteria: primiparous postpartum mothers, no history of allergies to orange/lemongrass aromas, and willing to be respondents. The sample size was set at 30 postpartum mothers experiencing mild to moderate baby blues symptoms. Divided into two intervention groups, namely those given lemongrass orange peel aromatherapy and the control group given standard postpartum care education without aromatherapy. The main research instrument to measure the level of baby blues is the validated Edinburgh Postnatal Depression Scale (EPDS) questionnaire. This questionnaire consists of 10 questions related to mood, anxiety, and sleep disturbances. EPDS score values are taken before (pre-test) and after (post-test) treatment. The intervention was carried out for 7 consecutive days. Respondents in the experimental group were asked to inhale aromatherapy vapor produced from a mixture of orange peel (*Citrus sinensis*) and lemongrass (*Cymbopogon citratus*) essential oils using a diffuser for 15–20 minutes before bedtime. The collected data were processed statistically using univariate analysis data processing software to describe the characteristics of respondents (age, parity). Bivariate Analysis Using the Paired T-Test (if the data is normally distributed) or the Wilcoxon test to see the difference in scores before and after the intervention. Differences in effectiveness between groups were tested using the Independent T-Test or Mann-Whitney U Test with a 95% confidence level ($\alpha=0.05$).

Based on actual data in the Dander District, there has been a decline in maternal health service coverage, both for postpartum mothers and antenatal care (ANC) visits. According to data obtained from Satu Data Bojonegoro (2024), at the Dander Community Health Center, postpartum coverage decreased from 90.82% in 2023 to 78.77% in 2024, while K4 service coverage decreased from 85.54% to 82.52%. A similar trend occurred at the Ngumpak Dalem Community Health Center, where postpartum coverage decreased from 109.34% to 85.88%, and K4 service coverage from 90.49% to 86.93%. This decline can impact suboptimal monitoring of maternal physical and mental health. Efforts to address maternal mental health have been conducted through various research programs, such as the research written on O-MOMS (One Mother One Student) mentoring, the Klas Mama Kasih program conducted by (RSUD Sumberrejo, 2025), and mental health education by (Pemkab Bojonegoro, 2025). However, these programs still have limitations, including a focus on general education, a lack of practical interventions, and a lack of ongoing psychological monitoring.

One alternative non-pharmacological intervention that can be used is aromatherapy. Aromatherapy is known to have benefits in calming the central nervous system, providing a relaxing effect, and reducing anxiety levels. Natural ingredients such as orange peel (*Citrus sinensis*) and lemongrass (*Cymbopogon citratus*) contain active compounds like limonene, which act as a sedative, mood-enhancing, and anti-stress effect. However, the use of locally sourced aromatherapy as a specific intervention for postpartum mothers is still rare.

Based on these issues, an innovative program is needed that is not only educational but also applicable and easy to use independently. The "Calm Mom - Baby Happy" program is designed to address Baby Blues Syndrome through a non-pharmacological intervention approach, utilizing natural aromatherapy combined with education, counseling, and monitoring of the mother's psychological condition. This program is expected to help reduce the incidence of Baby Blues Syndrome.

Raffiky Pinandia*, Wiwik Muhidayati

STIKes Rajekwesi Bojonegoro

Corresponding Author: *raffiky.pinandia@rajekwesi.ac.id

DOI: 10.56922/mchc.v5i1.3051

RESEARCH RESULTS

Table 1. Characteristics of Respondents (N=30)

Variable	Result	P-value
Age (Mean±SD) (Years)	(28.0±6.50) (18-45)	
< 20	5/16.7	
20-35	20/66.7	
>35	5/16.7	
Education (n/%)		
Elementary school	8/26.7	
Senior high school	15/50.0	
University	7/23.3	
Parity (n/%)		
Primipara	18/60.0	
Multipara	12/40.0	
Parity (n/%)		
Primipara	15/24.2	
Multipara	46/74.2	
Pre-Test BBS (n/%)		
Light (5-10)	8/26.7	12.5±2.3
Medium (11-15)	18/60.0	
Heavy (>15)	4/13.3	
Post-Test BBS		
Normal (0-4)	12/40.0	5.2±1.8
Light (5-10)	16/53.3	
Medium (11-15)	2/6.7	

Based on Table 1. before the intervention, most mothers experienced moderate baby blues (60%). After receiving lemongrass peel aromatherapy for 3 days (15-20 minutes per session), there was a significant decrease, with 53.3% of respondents in the mild category and 40% returning to normal. The standard deviation decreased from 2.3 to 1.8, indicating a more even distribution of data leading to lower stress levels.

Raffiky Pinandia*, Wiwik Muhidayati

STIKes Rajekwesi Bojonegoro

Corresponding Author: *raffiky.pinandia@rajekwesi.ac.id

DOI: 10.56922/mchc.v5i1.3051

Table 2. Results of the Wilcoxon Signed Rank Test on Baby Blues

Variable	Average Pretest	Average Posttest	p-value	Conclusion
Score EPDS	12.5	5.2	0.000	Ha accepted

Based on the results of the SPP test, the p-value = 0.000 was obtained. Because the p-value < α (0.05), H_a was accepted, which means there was a significant effect of giving lemongrass peel aromatherapy on reducing the baby blues syndrome score in postpartum mothers in Dander District.

DISCUSSION

Baby Blues Syndrome (BBS) is a mild mood disorder experienced by mothers within 14 days after giving birth. In Dander District, physical exhaustion and adaptation to a new role are often the main triggers. This aligns with previous research, which suggests that psychological support and relaxation interventions are crucial in preventing BBS from developing into postpartum depression. An innovative aromatherapy technique using a mixture of orange peel (*Citrus*) and lemongrass (*Cymbopogon citratus*) has a natural sedative effect. Orange Aroma: Contains limonene, which stimulates the release of the hormone serotonin in the brain (Handayaniv & Supliyani, 2021).

According to previous researchers, the use of lemongrass oil in primiparous mothers is effective in reducing symptoms of sadness and irritability that are characteristic of postpartum baby blues (Rahma, Anggraini, & Yuningsih, 2023). Similar research has also confirmed that aromatherapy based on local natural ingredients is more easily accepted by postpartum mothers because of its familiar and calming aroma (Natalia & Utami, 2025). Similar results were also found in other studies, where complementary therapy in the form of essential oils helped improve the quality of sleep in postpartum mothers, which directly impacts emotional stability (Sari, Sundjaya, & Helmi, 2025).

The implementation of this program in Dander District not only functions as medical therapy but also as a community empowerment program in utilizing organic waste (orange peels). With mothers feeling "calm," the bonding process with their babies will be better, creating a "Baby

Happy" condition. Regular use of this aromatherapy provides a safe, non-pharmacological alternative for breastfeeding mothers.

Mental health problems during pregnancy increase the risk of complications during and after childbirth, such as miscarriage, low birth weight, and premature delivery. Baby blues is a concern, as it is a mental (affective) disorder that occurs in women after childbirth (Rachman & Dewi, 2022). One of the priorities for health development in developing countries, particularly Indonesia, is improving maternal and child health. This development is directed at the physical and mental health of mothers, starting from the pregnancy period, childbirth, and postpartum. Pregnancy and childbirth are normal life events, but many mothers experience stress due to the demands of adjusting to changes in life. Much evidence shows that the pregnancy, childbirth, and postnatal periods are times of severe stress, anxiety, emotional disturbances, and adjustment (Herawati, 2009).

Baby blues is a mental health issue that requires attention, as it is a psychological (affective) disorder that occurs in women after childbirth. It generally occurs between the seventh and fourteenth days. Baby blues, also known as maternity blues, or new mother syndrome, requires the involvement of the husband or family to provide psychological support to the mother, especially primiparous mothers, to care for their babies. Baby blues can be influenced by two factors: internal and external. Internal factors can be influenced by fluctuations in estrogen, endorphin, and thyroid

Raffiky Pinandia*, Wiwik Muhidayati

STIKes Rajekwesi Bojonegoro

Corresponding Author: *raffiky.pinandia@rajekwesi.ac.id

DOI: 10.56922/mchc.v5i1.3051

Calm mom–baby happy: utilizing lemongrass peel aromatherapy to treat baby blues syndrome in postpartum mothers

hormones; while external factors can be influenced by culture, which can limit the mother's activities in caring for her baby (Khaerunnisa, Saleha, & Sari, 2021).

The incidence of baby blues in Indonesia is 50-70% and this can progress to postpartum depression with numbers varying from 5% to more than 25% after mothers give birth (Sylvén, Thomopoulos, Kollia, Jonsson, & Skalkidou, 2017). Health services need to provide interventions in the form of relaxation therapy with aromatherapy for primigravida mothers to prevent baby blues. This relaxation therapy can also be performed using natural compounds.

CONCLUSION

Based on the discussion, it can be concluded that aromatherapy with orange peel containing limonene and lemongrass containing citral is effective in reducing stress and anxiety levels. SPSS data shows a significant decrease in the average baby blues score from 12.40 (mild-moderate) to 7.30 (mild/none). The use of this complementary therapy has been shown to lower EPDS scores and help create a "Calm Mom" environment, which results in a "Happy Baby" environment. This aromatherapy is recommended as a self-management or non-pharmacological approach for postpartum mothers.

SUGGESTION

Community Health Centers/Village Midwives: Integrate orange peel and lemongrass aromatherapy as an affordable and safe complementary therapy during postpartum visits (KN) in Dander District to prevent postpartum depression. For postpartum mothers and their families, this aromatherapy can be applied independently at home if they feel anxious or tired, and social support (from husband/family) can be increased to help mothers get enough rest. Future researchers should increase the sample size and compare other aromatherapy combinations for more comprehensive results.

REFERENCES

- Arianti, E. (2024). Penerapan Pijat Oksitosin Dengan Aromaterapi Sereh Untuk Meningkatkan Pengeluaran Asi Terhadap Ny. W Di Pmb Siti Jamila, S. St Kabupaten Lampung Selatan Tahun 2024 (Doctoral Dissertation, Poltekkes Kemenkes Tanjungkarang).
- Aryani, R., Afriana, A., & Faranita, F. (2022). Faktor-Faktor yang Berhubungan dengan Baby Blues Syndrome Pada Ibu Post Partum di RSUD dr. Zainoel Abidin Kota Banda Aceh. *Journal of Healthcare Technology and Medicine*, 8(2), 1325-1336.
- Danistya, Z. A. (2024). Faktor-faktor yang berhubungan dengan kejadian baby blues syndrome pada ibu nifas di wilayah kerja Puskesmas Mojowarno Kabupaten Jombang tahun 2023 (Doctoral dissertation, Universitas Negeri Malang).
- Handayani, I., & Supliyani, E. (2021). Efektivitas edukasi psikologis terhadap dukungan suami dan postpartum blues. *Jurnal Riset Kesehatan Poltekkes Depkes Bandung*, 13(2), 507-516.
- Herawati, M. (2009). Psikologi Ibu dan anak untuk Kebidanan. Jakarta: Salemba Medika.
- Huck, B. (2010). Aromaterapy Science: A Guide For Health Care Profesionalis London.
- Imaroh, I., & Mesra, R. (2024). Peranan Dinas kesehatan dalam Peningkatan Kesehatan Mental Ibu Hamil untuk Mencegah Stunting pada Anak di Indonesia. *ETIC (Education And Social Science Journal)*, 1(5), 411-423.
- Jaelani. (2017). Aromaterapi. Jakarta: Pustaka Populer Obor.

Raffiky Pinandia*, Wiwik Muhidayati

STIKes Rajekwesi Bojonegoro

Corresponding Author: *raffiky.pinandia@rajekwesi.ac.id

DOI: 10.56922/mchc.v5i1.3051

Calm mom–baby happy: utilizing lemongrass peel aromatherapy to treat baby blues syndrome in postpartum mothers

- Khaerunnisa, N., Saleha, S., & Sari, J. I. (2021). Manajemen asuhan kebidanan pada ibu nifas dengan bendungan ASI. *Jurnal Midwifery*, 3(1), 16-24.
- Ministry of Health of the Republic of Indonesia. (2023). Baby Blues Syndrome. Retrieved from: https://keslan.kemkes.go.id/view_artikel/2762/baby-blues-syndrome#:~:text=Menurut%20WHO%20%282014%29%20di%20Asia%20angka%20kejadian%20Baby,di%20Indonesia%201%20sampai%202%20per%201000%20kelahiran.
- Nabilatus, S. K., & Sultan, A. (2025). Risk factors for baby blues in postpartum mothers in 2023-2024: A literature review. *WORLD*, 25(1), 2346-2350.
- Natalia, W., & Utami, I. P. (2025). Pengaruh Aroma Terapi Lavender Terhadap Penurunan Nyeri Afterpaint Pada Ibu Nifas di Wilayah Kerja Puskesmas Maracang. *Jurnal Sosial dan Sains (SOSAINS)*, 5(9).
- Rachman, S. M., & Dewi, I. P. (2022). Efektivitas Aromatherapi Kemangi dan Cendana dengan Teknik Penguapan serta Coldpressing Pada Ibu Babyblues. *Jurnal Kesehatan Pertiwi*, 4(1), 51-58.
- Rahma, M., Anggraini, R., & Yuningsih, Y. (2023). Gambaran Tingkat Pengetahuan Ibu Postparum Tentang Baby Blues di BPM Lismarini. *Al-Insyirah Midwifery: Jurnal Ilmu Kebidanan (Journal of Midwifery Sciences)*, 12(1), 56-65.
- Saraswati, D. E. S. (2018). Faktor yang berpengaruh terhadap kejadian postpartum blues. *Journal of Health Sciences*, 11(2), 130-139.
- Sari, Y. W. S., Sandjaya, T., & Helmi, T. A. R. (2025). Determinan Postpartum Blues: Tinjauan Sistematis Tentang Gangguan Suasana Hati Ibu Pasca Melahirkan. *Jurnal Promotif Preventif*, 8(4), 953-963.
- Sumiartha. (2017). aktor Risiko Yang Berpengaruh Terhadap Kejadian Postpartum Blues Pada Ibu Postparum Di Puskesmas Wilayah Kerja Kota Yogyakarta. Tesis. Universitas Gajah Mada : Yogyakarta
- Sylvén, S. M., Thomopoulos, T. P., Kollia, N., Jonsson, M., & Skalkidou, A. (2017). Correlates of postpartum depression in first time mothers without previous psychiatric contact. *European Psychiatry*, 40, 4-12.
- Victoria, S. I. V. S. I., & Yanti, J. S. Y. J. S. (2021). Asuhan Kebidanan Pada Ibu Nifas Dengan Pelaksanaan Senam Nifas. *Jurnal Kebidanan Terkini (Current Midwifery Journal)*, 1(1), 45-55.
- Wijayanti, L., Marting, E., & Bistara, D. N. (2019). Autogenic Relaxation with Aromaterapy Cendana on The Quality Of Sleeping in Patients Diabetes Type 2 Mellitus.

Raffiky Pinandia*, Wiwik Muhidayati

STIKes Rajekwesi Bojonegoro

Corresponding Author: *raffiky.pinandia@rajekwesi.ac.id

DOI: 10.56922/mchc.v5i1.3051