



THE EFFECT OF COUNTERPRESSURE THERAPY AND LAVENDER AROMATHERAPY ON REDUCING PAIN INTENSITY IN THE FIRST STAGE OF LABOR

Veryudha Eka Prameswari, Indra Yulianti

Universitas Bina Sehat PPNI Mojokerto

Corresponding Email : veryudhaekap@gmail.com

ABSTRACT	Keywords
First stage labor pain is a physiological process that can cause physical and psychological stress for mothers giving birth, so it requires effective and safe non-pharmacological treatment. Objective: This study aims to determine the effect of a combination of counterpressure therapy and lavender aromatherapy on reducing the intensity of first stage labor pain. Method: This type of study used a quasi-experimental design with a one group pre-test and post-test design approach. Sampling was carried out using an accidental sampling technique with a total of 25 mothers giving birth in the first stage. Measurement of pain intensity used a Visual Analogue Scale (VAS) or Numeric Rating Scale (NRS). Bivariate data analysis used the Wilcoxon Signed Ranks Test. Results: The characteristics of respondents showed that the majority were in a healthy reproductive age of 20–35 years (80%) and were primiparous (60%). Before the intervention, most respondents experienced severe pain (72%) with an average value (mean) of 7.24 ± 1.15. After being given a combination of counterpressure therapy and lavender aromatherapy, pain intensity decreased to moderate pain (52%) and mild pain (44%) with an average value of 4.12 ± 0.98. The results of the Wilcoxon statistical test showed a p-value <0.001 ($p <0.05$). Conclusion: The combination of counterpressure therapy and lavender aromatherapy had a significant effect on reducing the intensity of pain in the first stage of labor. This combination therapy can be recommended as one of the non-pharmacological independent midwifery care interventions to reduce labor pain.	Counterpressure, First Stage of Labor Pain, Lavender Aromatherapy

INTRODUCTION

Labor and birth is the process of expelling a fetus that occurs at full-term gestation, characterized by the spontaneous birth of the fetus (Kholilah Lubis, SST.,M.Keb. dkk, 2023)

Labor pain is a physiological phenomenon that occurs during labor. Labor pain is caused by cervical stretching, uterine contractions, and cervical descent. Pain is a single sensation caused by specific stimuli that is subjective and varies from individual to individual.(Kholilah Lubis, SST.,M.Keb. dkk, 2023)

Research (Sri Astuti dkk, 2022) states that in order to calm the mother, counterpressure methods are prioritized to provide comfort and manage pain experienced by the laboring mother. Excessive pain can cause anxiety, which can trigger the production of prostaglandin hormones (Sholehkah keke susilowati, lisa trina artyn dkk, 2020). Sensory nerve fibers from the uterus and perineum create synaptic connections in the spinal cord horns with cells that send axons to the spinothalamic tract. During the final part of the first stage and throughout the second stage, pain impulses originate not only from the uterus but also from the perineum as the fetal parts pass through the pelvis. Pain during labor is at its highest level (Rahayu Widaryanti, Herlina, 2019).

Complementary therapy is an alternative for reducing pain intensity, one of which is the counterpressure technique. Counterpressure can be categorized as a safe and effective intervention for reducing labor pain in the first stage (Riska Ayu S, 2020).

Efforts to reduce pain intensity during the first stage of labor can be done through complementary therapy techniques. One example is counterpressure therapy. Counterpressure is a massage technique that involves applying continuous pressure with clenched fists to the sacrum during contractions. (Novi Anggraeni, Linda Yanti, dkk, 2024). Then, along with the

administration of lavender aromatherapy, the aroma of lavender is a therapeutic action that is useful for improving the physical and psychological condition of the mother in labor (Siti Nurkhasanah, SST.,M.Keb, CH, 2023). In this case, aromatherapy is indeed very helpful in making the mother feel calm so that she can overcome anxiety (Kholilah Lubis, SST.,M.Keb. dkk, 2023). By administering counterpressure therapy, it is hoped that the mother will feel comfortable, calm , and not afraid during the labor process so that the labor process runs smoothly. Because we must be able to reduce the Maternal Mortality Rate (MMR). (Legawati, SSiT, MpH, 2018).

METHOD

The design of this study was a Quasi-Experiment. With a Pretest and Posttest approach with One Group. The study population comprised mothers who gave birth in the first stage. The sampling technique used was accidental sampling namely by selecting patients who presented with physiological labor at the time, with a total of 25 respondents who had given birth. This study was conducted from April 14 to May 31, 2026, at TPMB Diana, S.Keb.,Bd.

RESULTS

Table 1. Distribution of Respondent Characteristics Based on Age and Parity

Characteristics	Category	Frequency (f)	Percentage (%)
Age	< 20 Years Old	2	8 %
	20 – 35 Years Old	20	80 %
Party	> 35 Years Old	3	12 %
	Primipara (1 st Child)	15	60 %
	Multipara (> 1 child)	10	40 %

Total	25	100 %
-------	----	-------

Based on Table 1. The majority of respondents were aged 20–35 years old, accounting for 20 respondents (80%), and most respondents held a primipara status, totaling 15 respondents (60%).)

Table 2. Distribution of Pain Intensity Before and After Counterpressure Therapy and Lavender Aromatherapy Administration

Pain Level	Before Intervention (f)	Percentage (%)	After Intervention (f)	Percentage (%)
Mild Pain (1-3)	0	0%	11	44%
Moderate Pain (4-6)	7	28%	13	52%
Severe Pain (7-10)	18	72%	1	4%
Total	25	100%	25	100%

Based on Table 2. Before the intervention, the majority of respondents experienced severe pain, totaling 18 respondents (72%). After the combination therapy was administered, most respondents experienced moderate pain, accounting for 13 respondents (52%).

Table 3. Statistical Test Results of Pain Intensity Reduction

Variable	Mean	Standard Deviation	P - value
Pre-test Pain Score	7.24	1.15	< 0.001
Post-test Pain Score	4.12	0.98	

Based on Table 3. The Wilcoxon test yielded a p-value of < 0.001 ($p < 0.05$). This indicates a significant decrease in the mean pain score from 7.24 to 4.12.

DISCUSSION

The data in Table 3 shows that before the intervention, the majority of respondents experienced severe pain (72%), with a mean score of 7.24. This figure confirms that the active phase of the first stage of labor is a crucial phase, during which uterine contractions occur adequately, regularly, and become more frequent, helping to open the birth canal from 4 cm to a full dilation of 10 cm

Labor pain is a physiological phenomenon that occurs during labor. It is caused by cervical dilation, uterine contractions, and cervical descent. Pain is a single sensation caused by specific stimuli that is subjective and varies from individual to individual. (Kholilah Lubis, SST., M. Keb. dkk, 2023)

A recent literature review by (Dyrahani et al. 2024), published in the Malahayati Nursing Journal, demonstrates a simultaneous reduction in pain and anxiety levels among women in the first stage of labor following the administration of lavender aromatherapy inhalation. Reduced anxiety alleviates uterine muscle tension and improves blood circulation, thereby minimizing uterine tissue ischemia—a primary cause of contraction pain.

In this regard, aromatherapy is indeed very helpful in calming mothers, thus helping them overcome anxiety. Lavender aromatherapy contains key active compounds, namely linalool and linalyl acetate. When these aromatherapy molecules are inhaled, they bind to receptors on the cilia within the olfactory epithelium. Signals are then transmitted via the olfactory bulb directly to the brain's limbic system—the center for emotional, memory, and mood regulation. Within the limbic system, the hypothalamus responds by releasing calming neurotransmitters such as serotonin and endorphins while suppressing the production of stress hormones (cortisol and adrenaline). A calmer, more relaxed psychological state in the mother directly reduces the central nervous system's

sensitivity to pain stimuli (nociception). (Kholilah Lubis, SST.,M.Keb. dkk, 2023).

In this study, providing a combination of complementary therapies was very significant, and this therapy was given to mothers giving birth with the help of their husbands when providing therapy so that it could make mothers giving birth feel comfortable and calm, so that it could help reduce labor pain in the first stage.

CONCLUSIONS

Research on the effect of a combination of counterpressure therapy and lavender aromatherapy on reducing pain intensity in the active phase of first-stage labor at the Diana TPMB demonstrated significant results. The majority of respondents in this study (80%) were in the healthy reproductive age range (20–35 years), and the majority (60%) were primiparous (first-time mothers), who are theoretically susceptible to high pain perceptions due to a lack of previous childbirth experience. Prior to the intervention, most respondents (72%) reported severe labor pain with a mean score of 7.24. However, after receiving a combination of counterpressure physical therapy on the sacral area and lavender aromatherapy inhalation through a diffuser, there was a drastic clinical shift, with the majority experiencing a reduction in pain intensity to moderate (52%) and mild (44%) pain, with the average pain score dropping to 4.12.

Based on statistical analysis using the Wilcoxon Signed Ranks Test, the p-value was <0.001 ($p < 0.05$), empirically rejecting the null hypothesis. This proves that the combination of counterpressure therapy and lavender aromatherapy has a significant global effect in reducing the intensity of pain in the active phase of first-stage labor. This effectiveness occurs due to a double-action synergy, where counterpressure works to block the transmission of pain signals at the spinal cord level through the Gate Control Theory mechanism, while lavender aromatherapy

stimulates the brain's limbic system to release endorphins and provide a calming sedative effect. Thus, this complementary intervention is proven to be safe, economical, non-invasive, and highly effective for implementation as one of the standards of mother-friendly care to improve the comfort of mothers giving birth in primary care facilities.

REFERENCES

(reference from international journal/
English sources)

- Dyrahani, I., Ermasari, A., Rachmawati, F., & Yuviska, I. A. (2024). Pemberian Aromaterapi Lavender Terhadap Penurunan Intensitas Nyeri & Kecemasan Pada Persalinan Kala I. *Malahayati Nursing Journal*, 6(9), 3885-3897.
- Kholilah Lubis, SST.,M.Keb. dkk. (2023). *Pelayanan Komplementer Kebidanan*. Kaizen Media Publishing.
- Legawati, SSiT, MpH. (2018). *Asuhan Persalinan dan Bayi Baru Lahir*. Malang : Wineka Media.
- Novi Anggraeni, Linda Yanti, dkk. (2024). *Buku Ajar Asuhan Kebidanan Komplementer*. PT Sonpedia Publishing Indonesia: Jambi.
- Rahayu Widaryanti, Herlina. (2019). *Terapi Komplementer Pelayanan Kebidanan Berdasarkan Bukti Scientific dan Empiris*. CV Budi Utama: Sleman.
- Riska Ayu S. (2020). *Kebidanan Komplementer dengan pendekatan Holistik*. Graha Ilmu, Ed.
- Sholehkah keke susilowati, lisa trina artyn dkk. (2020). Pengaruh Aroma terapi minyak atsiri mawar terhadap intensitas nyeri persalinan kala I fase aktif di puskesmas pangalengan kab. Bandung. *Jurnal Ilmiah Kesehatan*, 12(1).

Siti Nurkhasanah, SST.,M.Keb, CH. (2023). *Terapi Komplementer dalam Praktik Kebidanan*. CV Budi Utama: Sleman.

Sri Astuti dkk. (2022). Effectiveness of Birth Ball and Counterpressure on Labor Pain in

The Siti Julaeha Midwife Practice, Pekanbaru City. *Jurnal Ibu Dan Anak*, 10(2).

<https://jurnal.pkr.ac.id/index.php/JIA/article/download/585/330/>