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Original Research Article

THE EFFECT OF LAVENDER OIL IN RELIEVING PERINEAL PAIN FOLLOWING CHILDBIRTH

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Abstract

Background: Postpartum mothers often face discomforts such as back pain, uterine cramps, fatigue, and perineal pain. Perineal pain after an episiotomy can significantly impact daily activities, maternal quality of life, and the mother-infant relationship. Effective management is crucial to decrease the perineal pain.

Objectives: The study aimed to evaluate the effect of lavender oil on relieving perineal pain in postpartum mothers.

Methods: A pre-experimental design with a pretest-posttest format was used. 34 participants, selected through purposive sampling, were assessed for pain intensity using a Numeric Rating Scale (NRS) from 0 to 10. Bivariate analysis was conducted using the Wilcoxon test to assess changes in pain levels before and after the intervention.

Results: The significance level was found to be 0.004 ($p < 0.05$), indicating a statistically significant reduction in pain intensity.

Conclusion: Lavender oil aromatherapy effectively reduces perineal pain in postpartum mothers. Although the study lacked a control group, lavender oil was found to be a safe and effective treatment, with no reported side effects.

Keywords: Childbirth, Lavender Oil, Perineal Pain

INTRODUCTION

Postpartum or the puerperium is a period of recovery from the condition of the uterus after giving birth starting one hour after the birth of the placenta until the condition of the uterus is like before pregnancy, which is 42 days or about 6 weeks (Gant, 2013). Mother in the immediate postpartum period may suffer from some problems, such as back pain, uterine cramps, fatigue, and perineal pain (Vaziri, 2017). Postpartum mothers will experience

many physical and physiological changes, especially changes in the reproductive system. One of the changes experienced by mothers is discomfort or pain due to perineal rupture.

Perineal pain after the episiotomy procedure can lead to some problems for the mother and in severe cases will impact the mother's activities. These conditions can cause pain, difficulty mobilizing, bleeding, sleep and mental health problems, and infection (Wray,

2011). In addition, post-episiotomy discomfort and its consequences can affect the maternal quality of life and mental health as well as the mother and baby relationship.

Perineal rupture can occur spontaneously or as a result of manipulative actions (episiotomy) (Gant, 2013). Spontaneous rupture is due to the inability of the pelvic muscles and soft tissues to accommodate the pressure in the vaginal area during labor (Setyowati et al., 2017).

The pain experienced by postpartum mothers needs attention and treatment to speed up the mother's recovery. Pain management can be done by using a pharmacologically and non-pharmacologically approach. Perineal pain can be treat using pharmacological such as painkiller, suppositories only 63% of the mother's described that painkillers were effective in relief pain following childbirth (Christine E.East., 2012).

Whereas, non-pharmacological pain management is aromatherapy which is believed to be safer and has a small risk of side effects (Lakhan et al., 2016). Nowadays, non-pharmacological approach is getting popular for pain treatment in health care sectors such as acupuncture, acupressure, massage therapy and Aromatherapy due to their low risks used. Aromatherapy is an essential oil obtained from aromatic plants that have therapeutic properties (restore memory, reduce anxiety, depression, and stress) (Farrar, 2020). There are several types of aromatherapies such as citronella, eucalyptus, green tea, lavender, thyme, and chamomile (Safdari-Dehcheshmehi & Rafiei, 2015).

Lavender aromatherapy is widely used as a non-pharmacological therapy to reduce pain and discomfort (Tsai et al., 2020). Linalool, esters, alcohol, aldehydes, and ketones contained in lavender essential oil have a relaxing effect (Tabatabaeichehr & Mortazavi, 2020). Therapy with lavender essential oil can be given by inhalation, massage, compress, or topical (Ali et al., 2015); (Farrar, 2020). The

existence of this therapy during the postpartum period can help mothers in managing pain and discomfort (Tsai et al., 2020).

Based on the results of a preliminary study conducted at the Kedaung Health Center, Sawangan sub-district, Depok city in January 2019, the number of vaginal deliveries was 15 people. Nine out of 15 people experienced spontaneous perineal rupture, and 6 others experienced rupture due to episiotomy. Seven people had pain ranging from mild to severe pain.

In addition, the Kedaung Health Center has never applied non-pharmacological therapy with aromatherapy especially lavender oil. The control of perineal pain and the prevention of suffering are major concerns of health care providers and their mother. Aromatherapy is a movement growing in popularity, but lacking scientific justification in the field of practice, although laboratory experiments are in evidence. Lavender oil is frequently selected for aromatherapy as having antiseptic and healing properties. Even though aromatherapy is commonly used and has been practiced for reducing anxiety, sleep quality, depression and post operative patient, few empirical reviews have examined its effectiveness lavender essential in reducing pain for perineal rupture following childbirth.

Objective (s): to evaluate the effect of lavender oil on relieving perineal pain in postpartum mothers.

METHODS

Study Design

This study used a pre-experimental design with a one-group pretest-posttest design.

Setting

This study was conducted from March-April 2019 in the PONE room of the Kedaung Health Center, Depok.

Research Subject

The number of samples in this study

was 10 postpartum 36 mothers who were taken using a purposive sampling technique.

Inclusion criteria for this study were: (1) normal postpartum mothers within the first 12 hours after perineal suturing, (2) those experiencing perineal pain due to spontaneous rupture or episiotomy, (3) mothers who did not receive lidocaine injections during suturing, (4) mothers from the Betawi culture, (5) mothers accompanied by family during childbirth, (6) those able to communicate effectively, and (7) those willing to complete the study.

Exclusion criteria were: (1) mothers who had delivered via vacuum extraction, forceps, or cesarean section, (2) those who had taken analgesic medications, (3) mothers with impaired olfaction (e.g., due to influenza), and (4) mothers with allergies to lavender aromatherapy.

Instruments

The instrument used in this study is 1) the observation sheet method to measure the level of pain was using the Numeric Rating Scale (NRS) pain scale which was written on the observation sheet. This observation sheet was used to record 2 variables, namely the effect of lavender aromatherapy and a decrease in the intensity of perineal pain. 2) Lavender oil 4 drops of aromatherapy and mixed with 40ml of water are put into a diffuser which will be turned on for 30 minutes and 3) The observation sheet was used to record the characteristics of the respondents which contained the respondent's code, name (initials), age, delivery history and recorded the intensity of pain before and after giving lavender aromatherapy. To find out the mother experienced a spontaneous rupture or an episiotomy was performed, it can be seen in the patient's medical record. Pain scale measured using Numeric Rating Scale (NRS) with a scale of 1-10. Data were collected twice, pretest and posttest. The pretest was conducted to measure the respondent's pain scale before being given intervention and the post-test was conducted to

measure the respondent's pain scale after being given intervention.

Intervention

The intervention was carried out by giving 4 drops of lavender essential oil and mixed with 40 ml of water, then put into a diffuser and lit for 30 minutes. The solution will release steam that can be inhaled by postpartum mothers. Interventions are given 1-12 hours after the delivery of the placenta, or after the entire labor process is complete section deliveries, mothers who had taken analgesic drugs, mothers who had limited smell (flu), mothers who were allergic to lavender aromatherapy.

Data analysis

Data analysis including univariate and bivariate was carried out using a computer application. The univariate analysis consisted of respondent characteristics (age and parity). Bivariate analysis was conducted using the Wilcoxon test to assess changes in pain levels before and after the intervention.

Ethical consideration

This research has been approved for ethical review under number Un.01/E.10.7.P.01.1/KE.SP/06.08.030/2021 by Research Ethics Committee of Faculty of Health Sciences, Syarif Hidayatullah State Islamic University Jakarta.

RESULT

The majority of respondents were aged between 20 and 35 years, totaling 9 individuals (90%). Those older than 35 years comprised 1 individual (10%). Regarding obstetric history, 6 respondents (60%) were multigravida, while 4 respondents (40%) were primigravida (Table 1).

Table 1. Frequency Distribution of Respondents Characteristics (N=10)

Characteristics	F	(%)	Mean (pain intensity)
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Age			
20 – 35 years	9	90.0	7
>35 year	1	10.0	5
Paritas			
Primigravida	4	40.0	8
Multigravida	6	60.0	4

Table 2. Mean Pain Scale Before Intervention (N=10)

Min-Max	Mean	Median	SD
5-9	6	5	1,491

Before administering lavender aromatherapy, pain levels ranged from a minimum of 5 to a maximum of 9. The mean pain score was 6, with a median of 5 and a standard deviation of 1.49 (Table 2).

Table 3. Mean Pain Scale After Intervention (N=10)

Min-Max	Mean	Median	SD
1-6	3.20	3	1,479

The table indicates that pain scores ranged from a minimum of 1 to a maximum of 6. The mean pain score was 3.20, with a median of 3 and a standard deviation of 1.48 (Table 3).

Table 4 presents the effect of aromatherapy on pain intensity, as analyzed by the Wilcoxon test. In the pretest, the average pain score was 6, with a median of 5, a minimum value of 5, and a maximum value of 9. In the posttest, the average pain score decreased to 3.20, with a median of 3, a minimum value of 1, and a maximum value of 6. The significance level was found to be 0.004 ($p < 0.05$), indicating a statistically significant reduction in pain intensity.

Table 4. Differences in Mean Pain Scale Before and After Intervention (N=10)

Mean	Min-Max	P

Pretest	6	5-9	0,004
Posttest	3,20	1-6	

DISCUSSION

This study aimed to evaluate the effectiveness of lavender oil in alleviating perineal pain during childbirth. The characteristics of the respondents revealed that the majority were in the reproductive age range of 20-35 years (90%), with a smaller group over 35 years (10%). This distribution aligns with Afriatayeni (2017), who reported that age influences labor pain intensity, with both younger (<20 years) and older (>35 years) women experiencing higher pain due to inexperience and altered pain thresholds, respectively (Mulati, 2017).

The study also found that most respondents were multiparous, with approximately 40% being primiparous. Multiparous mothers exhibited lower pain intensity compared to primiparous mothers, a finding consistent with the literature suggesting that increased experience with childbirth leads to a higher pain threshold (Judha, 2012; Mulati, 2017). Factors such as negative affect and contextual elements, including trust in medical professionals and expectations, may also influence pain perception and reporting (Boring et al., 2021).

The study observed a significant reduction in perineal pain scores following lavender aromatherapy, with average pain scores decreasing from 6 to 3.20. This finding is consistent with research indicating that aromatherapy can effectively reduce labor pain, as demonstrated in studies conducted in Egypt (Mansour Lamadah, 2016) among nursing students experiencing menstrual pain (Marzouk et al., 2013). The minimum and maximum pain values also decreased significantly post-aromatherapy, from 5-9 before treatment to 1-6 afterward. Previous research has similarly reported a reduction in

pain intensity with lavender aromatherapy, from a pain scale of 5.4 to 2.8 (Pambudi, 2016).

The study demonstrated a significant reduction in perineal pain following the intervention, with a p-value of 0.004, indicating that lavender essential oil aromatherapy effectively impacts the perineal pain scale. This finding is consistent with previous research showing that lavender aromatherapy significantly alleviates pain associated with spontaneous rupture and episiotomy sutures (Widayani, 2017). The effectiveness of lavender oil may be attributed to its active compound, linalyl acetate, which is known for its sedative and tonic properties. This ester compound, derived from organic acids and alcohols, influences emotional states and balances the body's condition, promoting relaxation and analgesia by stimulating the hypothalamus to release endorphins (Farrar, 2020). However, a larger sample size is needed to enable generalization of the findings.

CONCLUSION

The findings suggest that inhalation of lavender essential oil can effectively reduce perineal pain in postpartum mothers with perineal rupture. The findings of the study cannot be generalized due to the limited sample size. Further research with larger sample sizes and rigorous methodologies is recommended to validate these results. Additionally, incorporating lavender aromatherapy as a non-pharmacological intervention can offer a viable option for pain management in healthcare settings, particularly in health centers. While the absence of a control group is a limitation of this study, lavender oil has been shown to be a safe and effective treatment, with no reported side effects.

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DECLARATION OF CONFLICTING INTEREST

There is no competing interest.

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AUTHORS CONTRIBUTIONS

Yenita Agus: Conceptualization, drafting the proposal, data analysis, manuscript editing, and manuscript review.

Septiara Ikrowardani: Drafting the proposal, data collection, Methodology, data analysis, writing the original draft.

Nadhia Elsa Silviani: contributing to the writing process.

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