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The Effect of Lavender Aromatherapy on Reducing Afterpain in Postpartum Mothers in Purwakarta Regency, Indonesia

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A B S T R A C T

Introduction: Afterpain is cramping pain that occurs in the stomach of postpartum mothers after giving birth. This pain can interfere with activities and reduce the mother's quality of life. Lavender aromatherapy has been proven effective in reducing pain in several conditions. This study aims to determine the effectiveness of lavender aromatherapy in reducing afterpain in postpartum mothers in Purwakarta Regency. **Methods:** This research uses a quasi-experimental design with a pre-test and post-test design. A total of 60 postpartum mothers were randomly divided into two groups: the intervention group (lavender aromatherapy) and the control group (no intervention). The intervention group was inhaled with lavender aromatherapy for 30 minutes twice a day for 3 days. The control group was not given any intervention. Afterpain was measured using the visual analogue scale (VAS) on the first, third, and seventh days postpartum. **Results:** The results showed that there was a significant difference in the reduction of afterpain between the intervention group and the control group on the third (p=0.002) and seventh (p=0.001) postpartum day. **Conclusion:** Lavender aromatherapy is effective in reducing afterpain in postpartum mothers in Purwakarta Regency.

1. Introduction

Afterpain is a cramping pain that commonly occurs in the stomach of postpartum mothers after giving birth. This pain is caused by uterine contractions, which return to normal after giving birth. Afterpain can last for several days and can interfere with activities and reduce the mother's quality of life. In Indonesia, afterpain is one of the main health problems faced by postpartum mothers. In Purwakarta Regency, based on data from the Purwakarta Regency Health Service in 2022, there are around 20,000 mothers giving birth every year. Of this number, around 80% of postpartum mothers experience afterpain. Previous research has shown that various methods can be used to treat afterpain, such as administering medication, warm compresses, and acupuncture. However, some of these methods have undesirable side effects.[1-3]

Lavender aromatherapy is a safe and effective alternative method for treating afterpain. Lavender has sedative and analgesic effects that can help relieve pain. Apart from that, lavender also has a relaxing effect, which can help postpartum mothers feel calmer and more comfortable.[4-6] This study aims to determine the effectiveness of lavender aromatherapy in reducing afterpain in postpartum mothers in Purwakarta Regency. It is hoped that the results of this research can provide a safe and effective alternative method for treating afterpain in postpartum mothers.

2. Methods

This research uses a quasi-experimental design with a pre-test and post-test design. The population of this study was all postpartum mothers in Purwakarta Regency. The sample for this study was 60 postpartum mothers who met the inclusion and exclusion criteria. Inclusion criteria: Postpartum mothers aged 18-35 years, Postpartum mothers with afterpain, and postpartum mothers who are willing to be research respondents. Exclusion criteria: Postpartum mothers with lavender allergies, Postpartum mothers with serious comorbid diseases, and postpartum mothers who are currently using medication for pain. The sampling technique used was consecutive sampling.

Postpartum mothers who meet the inclusion and exclusion criteria will be explained about this study and asked to sign informed consent. Postpartum mothers will be randomly divided into two groups: the intervention group (lavender aromatherapy) and the control group (no intervention). The intervention group will be inhaled with lavender aromatherapy for 30 minutes twice a day for 3 days. The control group was not given any intervention. Afterpain pain was measured using the visual analogue scale (VAS) on the first, third, and seventh days postpartum. Data were analyzed with SPSS software using a t-test, $p<0.05$.

3. Results and Discussion

Tables 1 and 2 show the average after pain in postpartum mothers in the intervention group (lavender aromatherapy) and the control group (no intervention) on the first, third, and seventh postpartum days. On the first day, there was no significant difference in the average afterpain between the two groups ($p=0.871$). This shows that both groups had similar levels of afterpain before the intervention. However, on the third and seventh days postpartum, there was a significant difference in the mean afterpain between the two groups ($p=0.002$ and $p=0.001$). Postpartum mothers in the intervention group who were given lavender aromatherapy had a lower average afterpain compared to postpartum mothers in the control group.

Table 1. Efficacy of afterpain between treatment groups.

Group	Day 1	Day 3	Day 7
Intervention (n=30)	6,8 ± 1,2	4,1 ± 1,0	2,9 ± 0,8
Control (n=30)	6,9 ± 1,3	5,2 ± 1,1	4,0 ± 1,0

Table 2. Comparison of statistical tests between test groups per treatment day.

Comparison	Day 1	Day 3	Day 7
Intervention vs control group	p=0,871	p=0,002	p=0,001

The results of the study showed that there was a significant difference in the reduction of afterpain between the intervention group (lavender aroma therapy) and the control group (no intervention) on the third and seventh days postpartum. These findings indicate that lavender aroma therapy is effective in reducing afterpain in postpartum mothers. Lavender contains two main compounds that play a role in its sedative and analgesic effects, namely linalool and terpinen-4-ol. Effects of Linalool: Increases GABA activity in the brain: GABA (gamma-aminobutyric acid) is a neurotransmitter that plays a role in the central nervous system. Increased GABA activity produces a relaxing and calming effect, which may help reduce the perception of pain. Improves sleep quality: Linalool may also help improve sleep quality, which is important for the recovery and health of postpartum mothers. Effects of Terpinen-4-ol: Has anti-inflammatory effects: Inflammation is one of the factors that causes afterpain. Terpinen-4-ol helps reduce inflammation, which can help relieve pain. Has an analgesic effect: Terpinen-4-ol can directly help block pain signals in the nerves, thereby helping reduce pain. A study shows that inhaling linalool for 30 minutes can improve sleep quality and reduce anxiety in adults. Another study showed that topical

application of 2% terpinen-4-ol can reduce joint pain in osteoarthritis patients.[7-10]

The scent of lavender has a positive effect on the nervous system and hormones, which contributes to its effectiveness in relieving afterpain. The scent of lavender increases the activity of the parasympathetic nervous system, which is responsible for the relaxation response. Increases the release of serotonin in the brain, a hormone that plays a role in regulating mood, sleep, and appetite. Increases feelings of calm, comfort, and happiness in postpartum mothers. Effects on dopamine: The scent of lavender increases the release of dopamine in the brain, a hormone that plays a role in motivation, reward, and pain regulation, as well as increasing feelings of pleasure and reducing the perception of pain in postpartum mothers. The ability of lavender aroma to balance the autonomic nervous system is an important mechanism in its effectiveness in relieving afterpain. Autonomic nervous system: Consists of two parts: the parasympathetic nervous system (PNS) and the sympathetic nervous system (SNS). The PNS is responsible for stress responses, such as increased heart rate, blood pressure, and breathing. The PNS is responsible for relaxation responses, such as a decrease in heart rate, blood pressure, and breathing. Effects of lavender aroma on the autonomic nervous system: Increases PNS activity, decreases SNS activity, creates balance between PNS and SNS, Helps the body achieve a state of relaxation, and reduces stress. The findings of this study are in line with previous research showing the effectiveness of lavender aroma therapy in reducing pain in various conditions, including chronic pain, menstrual pain, and post-operative pain.[11-14]

4. Conclusion

Lavender aromatherapy is effective in reducing afterpain in postpartum mothers in Purwakarta Regency.

5. References

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