EFFECTIVENESS OF LAVENDER AROMATHERAPY ON CESAREAN POSTOPERATIVE PAIN

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Abstract

Background: Pain is a significant problem in patients after cesarean and medication such as aromatherapy, a complementary therapy in which the essence of the plant's oils are used to reduce such undesirable conditions.

Objectives: This study aimed to determine the effect of lavender aromatherapy on post section caesarea pain.

Materials and methods: In a quasi-experiment, non-equivalent control group pretest and posttest, 30 postoperative cesarean women, were divided randomly into two groups. Bivariate analysis in this study used the Mann-Whitney test.

Result: The results showed that there were differences in pain intensity in the intervention group and the control group ($p=0.000$).

Conclusion: Lavender aromatherapy and deep breathing relaxation techniques can be an option for dealing with pain in post-sectio caesarea mothers.

Keywords : Lavender Aromatherapy, Pain, post cesarean

BACKGROUND

Caesarean section is among the most common surgical procedures throughtout the world (Pakseresht et al., 2020). The prevalence of Sectio Caesarea continues to increase from year to year. In Lampung Province in 2018, the incidence of Sectio Caesarea was 13.18% of all deliveries. At the Az-Zahra Kalirejo Hospital, Central Lampung, the incidence of Sectio Caesarea has increased, namely, 41% in 2019, increasing to 48% in 2020 (RS Az-Zahra, 2021). The consequence that arises from Sectio Caesarea is pain. Pain is an unpleasant sensory and emotional experience resulting from actual or potential tissue damage. Surgery on Sectio Caesaria is an action that can cause pain due to the release of pain mediator compounds such as acetylcholine, bradycardia and so on which increases the sensitivity of pain receptor nerves. Post-section cesarean pain in the mother will cause problems such as impaired mobilization, and difficulty in adjusting to a comfortable position during breastfeeding which causes the patient to delay breastfeeding from the start to their baby so that the provision of nutrition for the baby is reduced which allows for respiratory disorders and reduced immune power in the baby. Post Sectio Caesaria mothers can experience difficulties with baby care, moving up and down from the bed, and having difficulty adjusting to a comfortable position due to pain, therefore optimal care is needed to control pain in recovery from surgery and create good conditions for breastfeeding, baby care, and early bonding with the baby.

Pain is a major problem in patients after cesarean and medication such as aromatherapy which is a complementary therapy, in which the essences of the plants oils are used to reduce such undesirable conditions (Olapour et al., 2013). Pain relief is of high significance in post-cesarean patients and could cause complications during the patients' recovery. Moreover, analgesics are not the only method of pain management, and the administration of opioids results in the emergence of certain side effects. Hence, non-pharmacological methods could be used in conjunction with analgesics or even as their alternatives for pain relief (Pakseresht et al., 2020).

Aromatherapy is the use of extra plant essential oils to improve mood and health. The mechanism of action of aromatherapy in the human body takes place through two physiological systems, namely the body's circulation and the olfactory system. Fragrances can affect a person's psychological condition, memory, and emotions. Lavender aromatherapy is a type of aromatherapy that can be used to treat pain and anxiety (Pratiwi, 2012)

METHOD
This study used a quasi-experimental using a non-equivalent control group pretest and posttest. Research respondents were divided into two groups. The intervention group was given lavender aromatherapy and deep breathing relaxation. The control group was only given deep breathing relaxation.
Bivariate analysis in this study used the Mann-Whitney test.

RESULT AND DISCUSSION
Table 1. The pain level of control-experimental groups in pre-treatments

Group	Mean	Median	SD	Min	Max	n
Control	5,93	6,00	1,387	4	8	15
Intervention	6,80	7,00	0,775	5	8	

Table 2. The pain level of control-experimental groups in post treatments

Group	Mean	Median	SD	Min	Max	n
Control	7,47	7,00	1,125	5	9	15
Intervention	5,67	6,00	0,900	4	7	

Table 3. test of the normality before and after treatments

Group	Category	Shapiro-wilk
Intervention	pre-treatment	0,01
	post treatment	0,049
Control	pre-treatment	0,079
	post treatment	0.002

Table 3. shows the resultds of the data normality test using the Shapiro-Wilk test. The normality test criterion is that the data is normally distributed if the significant level is $> \alpha$ (0.05). The results of the Normality Test analysis showed that the significant level before treatment in the intervention group was 0.10 and after treatment it was $0.049 < (\alpha\ 0.05)$. Whereas in the control group before being given treatment it was 0.079 and after being given treatment it was $0.002 < (\alpha\ 0.05)$ So in this study the data were not normally distributed, the hypothesis test used was the Mann-Whitney statistical test.

Table 4. The difference between pre- post pain level in the control-intervention group

Level of pain	Mean	Z	P
Intervention group	5,67	-3,811	0,000
Control group	7,47		

The results of the analysis from the table 4. above can be seen the difference in the average value of pain after being given treatment with a mean of 5.67 which is smaller than the mean in the control group of 7.47.

The results of the pain statistical test in the intervention group and the control group obtained p=0.000 (α < 0.05). Thus, it was concluded that there were differences in pain in the intervention group and the control group.

These results also confirm that there is an effect of giving lavender aromatherapy combined with deep breathing techniques in reducing pain levels in post-cesarean mothers compared to the control group who were only given deep breathing techniques.

Aromatherapy using lavender essential oil is the most frequently used aromatherapy in research because lavender aroma has been proven effective in reducing pain intensity and anxiety levels (Solehati & Kosasih, 2015). lavender flower aromatherapy (Lavandula angustifolia) contains linalool which works as a sedative effect so that in the process serotonin which is a neurotransmitter is regulated the mood. Serotonin found by the brainstem and dorsal horn, among others, works to inhibit pain transmission (Indrayani & Djami, 2016).

Aromatherapy is the practice of using volatile oils or aromas extracted from fragrant herbs in different ways, such as through massage, inhalation and the oral route. The aroma released in aromatherapy stimulates the olfactory receptors and transmits olfactory messages to the limbic system. These neurotransmitters are endogenous matters commonly known as opioid peptides that inhibit the transmission of the pain message through receptors associated with these peptides in the brain stem (Pakseresht et al., 2020).

The reported therapeutic properties of lavender oil include sedative, anxiolytic, antibacterial, antifungal, anti-flatulence, antispasmodic, anti-inflammatory and anti-histaminic properties. The linalool and linalyl acetate contained in this plant can stimulate the parasympathetic system, with linalyl acetate having narcotic properties and linalool acting as a sedative. The analgesic properties of the lavender extract are attributed to its effect on inflammatory processes. Lavender can also induce analgesia by inhibiting nitric oxide synthesis. The aroma and compounds in essential oils enter the bloodstream and cause psychological and physiological reactions so that they directly interact with tryptophan and help with relaxation responses (Pakseresht et al., 2020).

Besides having the effect of reducing post-cesarean pain levels, lavender aromatherapy is also effective in reducing back pain in pregnant women. research conducted by Sanjaya (2022) found that giving effleurage massage combined with lavender aromatherapy has proven effective in reducing back pain in pregnant women (Sanjaya et al., 2022). Lavender aromatherapy is also effective in reducing labor pain (Juliani et al., 2021; Sari & Sanjaya, 2020), and menstrual pain (Sabrina et al., 2020).

CONCLUSIONS

Lavender aromatherapy and deep breathing relaxation techniques can be given to reduce pain as non-pharmacological therapy. The results of this study support the view that both therapies can be useful treatments to reduce the severity of post-cesarean section pain. This study also showed that pain was reduced significantly especially in the intervention group. Therefore it is hoped that midwives and nurses in hospitals, especially in the delivery room, can provide non-pharmacological pain management using combination therapy, not just deep breathing relaxation techniques only. It is recommended that further research be conducted with a larger number of respondents and explore experiences in pain relaxation therapy activities at the hospital using qualitative research.

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