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Research Article

The Effect of Lavender Aromatherapy on Fatigue Reduction in Postpartum Mothers at The Puskesmas Ibu, Halbar Regency

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Abstract, Background: The postpartum period is a recovery phase involving physical and psychological changes, during which mothers often experience fatigue due to increased cortisol levels. Excessive fatigue can interfere with the breastfeeding process and reduce motivation for exclusive breastfeeding. Lavender aromatherapy is a non-pharmacological therapy containing linalool with sedative effects to provide relaxation and reduce fatigue levels. Objective: This study aimed to determine the effect of lavender aromatherapy on reducing fatigue in postpartum mothers at Puskesmas Ibu, West Halmahera Regency. Methods: This study was a Pre-Experimental study with a One Group Pretest-Posttest Design. The study population consisted of all postpartum mothers at Puskesmas Ibu, with a total sampling technique of 30 respondents. The research instrument used an observation sheet, and data analysis was performed using the Paired Sample T-Test ($\alpha = 0.05$). Results: The majority of respondents' characteristics were in the age range of 20-35 years (76.7%), had Senior High School education (60%), were unemployed/housewives (70%), and were primiparous (60%). The results of the Paired Sample T-Test showed a mean fatigue score before the intervention of 27.33, which decreased to 11.50 after the intervention (mean difference 15.833) with a p-value = 0.000. Conclusion: There is a significant effect of lavender aromatherapy administration on reducing fatigue in postpartum mothers at Puskesmas Ibu, Halbar Regency. Lavender aromatherapy is effective as a complementary therapy to aid postpartum maternal recovery.

Keywords: Fatigue, Lavender Aromatherapy, Postpartum, Puskesmas Ibu, Reduce Motivation.

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1. INTRODUCTION

The postpartum period is a very important and sensitive phase for both the mother and her baby. During this period, the mother's body undergoes various changes, both physically and psychologically. Some of these changes include the return of the uterus to its original size (uterine involution), the initiation of breastfeeding and breast milk production (ASI), overall bodily system adjustments, and changes in the mother's mental and emotional condition. Generally, the postpartum period lasts for approximately six weeks after delivery, from the birth of the baby until the mother's reproductive organs return to their pre-pregnancy condition. During this time, a comprehensive recovery process occurs in the mother's body, including the restoration of reproductive system function. The changes experienced not only encompass physical aspects but also psychological aspects, where the mother must adapt to a new role and the challenges of caring for the baby. This period is also marked by various anatomical and physiological processes that occur gradually, as the body adapts to return to its pre-pregnancy state (Prayogi & Widiatrilupi, 2025).

Fatigue experienced by postpartum mothers is caused by an increase in cortisol levels within the body. Excessive fatigue increases disruption in the release of oxytocin from the neurohypophysis, thereby decreasing epinephrine. This decrease in epinephrine can cause vasoconstriction of the alveolar blood vessels, preventing oxytocin from reaching the myoepithelium. Disruption of oxytocin hormone results in milk accumulation in the alveoli, causing breast enlargement and pain, which can lead to abscesses. Therefore, the motivation of some postpartum mothers decreases to provide exclusive breastfeeding regularly (Ilmu et al., 2021).

Considering the many impacts caused by fatigue on both pregnant women and the fetus. To reduce fatigue, two therapies can be undertaken: pharmacological and non-pharmacological. Pharmacologically, drugs that can be used to address insomnia, such as benzodiazepines, antihistamines, and antidepressants, are less effective for use in pregnant women. Meanwhile, non-pharmacological therapy to address sleep quality consists of several management actions, including massage techniques, relaxation, and therapy using aromatherapy. Aromatherapy is a non-pharmacological treatment using essential oils derived from plants to help improve sleep quality problems, specifically lavender aromatherapy. Lavender aromatherapy used via inhalation or inhalation has been widely used to improve mood and relax the body. Lavender aromatherapy can induce a person's mind, improve sleep quality, and promote a mild sedative effect (Romadhona et al., 2020).

Lavender is one of the most widely used aromatherapy oils today, either via inhalation or massage techniques. Lavender contains linalool, which has calming/relaxing effects. Lavender also helps alleviate insomnia, anxiety, and depression. Lavender aromatherapy increases alpha waves in the brain; these waves depict a state of relaxation in a person and disappear when a person is overthinking or in a mentally busy state. Lavender aromatherapy also provides a sense of comfort, openness, and confidence. Furthermore, lavender can also reduce feelings of pressure, stress, pain, imbalanced emotions, hysteria, frustration, and panic (Diva de Laura, Misrawati, 2015).

2. METHODS

This study used a Pre-Experimental design with a One Group Pretest- Posttest Design. This design was used to measure the effectiveness of lavender aromatherapy intervention by comparing the respondents' fatigue levels before (pre -test) and after (post - test) the treatment was given. The population in this study consisted of all postpartum mothers at Puskesmas Ibu, West Halmahera Regency. The sampling technique used Total Sampling, where all members of the population became respondents, resulting in a sample size of 30 people. The data obtained were analyzed using the SPSS program. Based on the statistical test results, analysis was performed using the Paired Sample T-Test with a significance level (α) = 0.05.

3. RESULTS

Table 1 Respondent Characteristics.

Variable	F	%
Age		
< 20 years	**1**	**3.3**
20-35 years	**23**	**76.7**
> 35 years	**6**	**20.0**
Total	**30**	**100.0**
Education		
Elementary	**3**	**10.0**
Junior High	**5**	**16.7**
Senior High	**18**	**60.0**
Higher Education	**4**	**13.3**
Total	**30**	**100.0**
Occupation		
Housewife	**21**	**70.0**
Private Sector	**8**	**26.7**
Civil Servant	**1**	**3.3**
Total	**30**	**100.0**
Parity		
Primipara	**18**	**60.0**
Multipara	**11**	**36.7**
Grand Multipara	**1**	**3.3**
Total	**30**	**100.0**

Based on the table above, it can be concluded that the majority of respondents were of healthy reproductive age, namely the range of 20-35 years, with 23 people (76.7%). Only a small proportion were under 20 years old (3.3%). Most respondents were Senior High School graduates, with 18 people (60.0%), followed by Junior High School graduates (16.7%), Higher Education (13.3%), and Elementary School (10.0%). Most respondents did not work outside the home or were Housewives (70.0%). The majority of respondents were Primiparous (giving birth for the first time) with 18 people (60.0%), while the remainder were Multiparous (36.7%) and Grand Multiparous (3.3%).

Table 2 Analysis of Mean Differences in Postpartum Mothers' Fatigue Before and After Administration of Lavender Aromatherapy.

Variable	Mean	SD	Mean Diffrence	t	p-value
Pre-test	27,33	1,093	15,833	58,301	0.000
Post-test	11,50	0,938			

Based on Table 2 above, the results show that the average fatigue score of respondents before being given lavender aromatherapy was 27.33 (falling into the higher fatigue category). After being given lavender aromatherapy, the average score decreased to 11.50. A decrease in the mean value (Mean Difference) of 15.833 occurred, indicating an improvement in the fatigue condition of postpartum mothers. The results of the Paired Sample T-test showed a t-value = 58.301 with a significance value of p = 0.000. Since the p-value < 0.05, it can be concluded that there is a significant effect of lavender aromatherapy administration on reducing fatigue in postpartum mothers at Puskesmas Ibu, Halbar Regency.

DISCUSSION

Based on the results of the Paired Sample T- test, a t-value = 58.301 with a significance value of p = 0.000 was obtained. Since the p-value < 0.05, it can be concluded that there is a significant effect of lavender aromatherapy administration on reducing fatigue in postpartum mothers at Puskesmas Ibu, Halbar Regency. This result strengthens the assumption that non-pharmacological methods such as lavender aromatherapy can be an effective and safe alternative approach in managing fatigue, especially for mothers after normal delivery experiencing perineal pain, physical exhaustion, and emotional pressure. The working mechanism of this therapy is related to the main components of lavender oil, such as linalool and linalyl acetate, which act as natural sedatives. These substances work by stimulating the limbic system in the brain related to emotion and sleep regulation, thereby creating feelings of relaxation and comfort.

The postpartum period is the mother's recovery period after childbirth, marked by the return of reproductive organs to their pre-pregnancy condition within a duration of 6-8 weeks. During this duration, postpartum mothers will go through many changes, both physical and psychological, which, if not accompanied properly by family and health workers, risk problems in navigating their puerperium. One of the physiological changes that occur is uterine changes undergoing the involution process, which is the process of the uterus shrinking after enlarging due to pregnancy and returning to its original shape before pregnancy. The weight of the uterus from before pregnancy to the end of pregnancy can increase 11-fold. The uterus will involute or shrink to about 500 grams at 1 week postpartum, and at 2 weeks postpartum, the uterus shrinks to about 350 grams. After 1 week, the position of the uterus will be within the pelvis and will return to its pre-pregnancy state by week 6, weighing 50-60 grams (Danur Jayanti & Indah Mayasari, 2022).

The fatigue experienced by postpartum mothers has a considerable relationship with the motivation to provide exclusive breastfeeding. Stress, worry, and unhappiness of the mother during the breastfeeding period play a significant role in the success of exclusive breastfeeding. Stress is greatly influenced by increased cortisol levels in the body, which will cause disruption in the release of oxytocin from the neurohypophysis. Psychological disturbances due to adaptation to a new role, the responsibility of becoming a mother.

Factors that can cause anxiety itself are age, education, parity, and the mother's level of knowledge. The education or knowledge level of respondents will greatly influence the anxiety level of postpartum mothers. A person's education level will influence their response to something coming from outside or within (Chairiyah & Irmaya, 2024).

In addition to psychological disorders, physiological disturbances experienced by the mother, such as cracked nipples, breast engorgement, and low milk supply, also risk decreasing the mother's motivation to provide exclusive breastfeeding. This causes blocking of the let-down reflex, which will increase vasoconstriction of the alveolar blood vessels, preventing the oxytocin hormone from reaching the myoepithelium (Sinaga, 2017).

Lavender aromatherapy is a therapy using lavender essential oil, which is considered helpful in calming or relaxing and providing a sense of comfort to the body. Lavender aromatherapy also contains essential oils that have the effect of prolonging sleep duration. Lavender aromatherapy contains linalool acetate, which functions as a sedative effect, so that someone who inhales the scent of lavender flowers is able to obtain a sense of comfort and calm (Riset et al., 2025).

And lavender contains essential oils that have the effect of prolonging sleep duration. Lavender oil with its linalool content is one of the most widely used aromatherapy oils today. Aromatherapy used by inhalation, where when we inhale a scent, its chemical components enter the nasal cavity and are received by olfactory neurons, which are then transmitted to the olfactory bulb, then to the limbic system in the brain. The limbic system serves as the center for pain, pleasure, anger, fear, depression, and various other emotions. The limbic system receives all information from the auditory system, visual system, and olfactory system. The effect of lavender aromatherapy on EEG (Electroencephalogram) activity shows an increase in alpha and beta wave power, thus increasing sleep time (Mu'alimah et al., 2022).

Aroma therapy is usually performed through direct inhalation and indirect inhalation. Direct inhalation is administered individually using medical devices such as a face mask or oxygen mask, while indirect inhalation is performed collectively in one room, such as this lavender aroma therapy. Lavender oil containing linalool is one of the aromatherapies widely used via inhalation. Lavender is dripped, five drops with 30 ml of water, which is vaporized for 15 minutes to be inhaled via inhalation by the patient (Rahayu et al., 2020).

4. CONCLUSION

Based on the research results and discussion regarding the effect of lavender aromatherapy on reducing fatigue in postpartum mothers at Puskesmas Ibu, Halbar Regency, the following conclusions can be drawn:

1. The average fatigue level of postpartum mothers before (pre-test) being given lavender aromatherapy was 27.33, which falls into the high fatigue category.
2. The average fatigue level of postpartum mothers after (post-test) being given lavender aromatherapy experienced a drastic decrease to 11.50.
3. There is a significant effect of lavender aromatherapy administration on reducing fatigue in postpartum mothers at Puskesmas Ibu, Halbar Regency, as evidenced by a p-value =

0.000 ($p < 0.05$) and a t-value of 58.301. The decrease in the average fatigue score of 15.833 shows that this intervention is very effective in improving the physical and emotional condition of mothers after childbirth.

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