



Aroma therapy Lavender Against Mother's Nausea Vomiting

Nancy Olii¹, Febri Dwi Yanti², Salman³, Nurhidayah⁴

^{1,2,4} Midwifery, Politeknik Kesehatan Kemenkes Gorontalo, Indonesia.

³ Nutrition, Politeknik Kesehatan Kemenkes Gorontalo, Indonesia

Email: oliinancy7@gmail.com¹, febridwiyanti0293@gmail.com², slmnlukman@gmail.com³, dhayatasa@gmail.com⁴

ABSTRACT

Morning sickness is experienced by around 70-80% of pregnant women and is a phenomenon that often occurs at 5-12 weeks of gestation. Morning sickness is caused by an increase in the hormones estrogen, progesterone, human chorionic gonadotropin expenditure and can be reduced by administering lavender aromatherapy. The research objective was to determine the effectiveness of giving lavender aromatherapy to reduce vomiting and nausea in first trimester pregnant women. The research method used was a quasy experiment with a pretest-posttest approach with a control group design. The sampling technique used was quota sampling, the sample size being 30 first trimester pregnant women in the Limboto Health Center area which were divided into a control group and an experimental group. This study shows that there is an effect of giving lavender aromatherapy to reduce nausea and vomiting in first trimester pregnant women at the Limboto Health Center. Lavender aromatherapy can reduce nausea and vomiting in first trimester pregnant women which can affect the nerves in the hypothalamus to reduce nausea and vomiting

Keywords: Aroma therapy; Lavender; Nauseous Vomit; Pregnant Mother

INTRODUCTION (*Times new roman, 12pts, spaces 1.5*)

Pregnancy is a continuous process that starts from ovulation, conception, nidation, implantation and development of the embryo in the uterus to term which is a physiological part of a woman's life. Every process in pregnancy is a crisis condition that requires psychological and physiological adaptation to the influence of pregnancy hormones and mechanical stress due to enlargement of the uterus and other tissues. This process causes physical, mental and socio-cultural and economic changes. This pregnancy is usually accompanied by a feeling of discomfort that is often experienced by pregnant women, especially in the first trimester of pregnancy, namely nausea and vomiting. The cause is an increase in the hormones estrogen and progesterone produced by Human Chorionic Gonadotropine (HCG) in the placental serum.(Retni et al., 2020),(Istiqomah et al., 2022),(Khadijah et al., 2020)

Nausea and vomiting that occurs in pregnancy caused by changes in the endocrine system that occur during pregnancy, mainly caused by high fluctuations in Human Choronic

Gonadotropin (hCG) levels, most women experience symptoms of nausea and vomiting at 8-12 weeks of gestation and decrease gradually gradually until it finally stopped at 16 weeks of gestation.(Rahayu & Sugita, 2018),(Ilmu & Komplementer, 2021),(Akbarini et al., 2022)

The frequency of occurrence of nausea and vomiting is not only in the morning but can occur during the day and even at night and besides that it is because of the smell of a dish. In general, mothers who experience nausea and vomiting do not feel comfortable and want to get through this period. One of the treatments to overcome the discomfort of nausea and vomiting in the first trimester of pregnancy is pharmacological or non-pharmacological therapy. (Fatmawati, 2022) Pharmacological therapy is carried out by administering antiemetics, antihistamines, anticholinergics, and corticosteroids. However, there are also non-pharmacological therapies, one of which can be done with emotional support, acupressure and aromatherapy (Lubis et al., 2019),(Kurnia, 2019)

Aromatherapy is one of the various complementary therapies that is growing fast and rapidly. The reason is, this treatment is classified as economical or does not require a lot of money, is

affordable and easy to do. The term aromatherapy refers to the use of chemical drugs using natural plant ingredients. Aromatherapy treatment provides a variety of effects for the inhaler, such as calmness, freshness, and can even help pregnant women overcome nausea and vomiting. (Wijaya et al., 2022), (Krueng et al., 2022)

Aromatherapy is a therapeutic action using essential oils that are useful for improving a person's physical and psychological condition for the better. Some essential oils have unique pharmacological effects such as anti-bacterial, anti-viral, diuretic, vasodilator, sedative, and adrenaline-stimulating. (Tamar et al., 2020), (Dhilon & Azni, 2018) The molecules in these essential oils when inhaled through the cavity the nose can stimulate the limbic system in the brain. The limbic system in the brain is an area that influences emotion and memory and is directly related to adrenaline, the pituitary gland, hypothalamus, the parts of the body that regulate heart rate, blood pressure, stress, body balance and breathing. (Wijaya et al., 2022), (Rizki et al., 2022)

The main components of lavender include linalool, linalylacetat, 1,8-cineole B-ocimene, terpinen-4-ol, and camphor. Linalool is a component of lavender which has a sedative or sedative effect and is commonly used as aromatherapy which affects the body's neuroendocrine system

which affects the release of hormones and neurotransmitters. (Tamar et al., 2020), (Purba et al., 2022) This situation will increase the feeling of comfort in pregnant women who experience nausea and vomiting (Sari, 2021). (Ropika & Linda Meliati, 20

Similar research was conducted by Tarigan (2018) regarding the effect of lavender aromatherapy in first trimester pregnant women on reducing nausea and vomiting. By measuring three times, namely before treatment, fourth day after treatment and seventh day of treatment, the results of Paramitha's research showed that there was an effect of Lavender aromatherapy on reducing nausea and vomiting in trimester pregnant women with a p value = 0.000 ($p < 0.05$). (Tarigan, 2018)

This study aims to determine the effect of giving lavender aromatherapy to reducing nausea and vomiting in first trimester pregnant women in the working area of the Limboto Health Center, Gorontalo Regency. This research article will also have a positive impact to be carried out as input for pregnant women who want to reduce nausea and vomiting during pregnancy in an effective and inexpensive way without having to consume a lot of drugs.

METHOD

This study used a quasi-experimental design with a pretest-posttest control group design approach. The pretest-posttest control group design approach, in this design the experimental and control groups were measured before (pre-test) and after (post-test) the treatment of the two groups. The pre-test and post-test were carried out using the Index Nausea Vomiting and Retching (INVR) questionnaire.

The population in this study were pregnant women in their first trimester in June-October 2019 in the working area of the Limboto Health Center, Gorontalo Regency, namely 54 people. Researchers determine the number of samples of 30 respondents. Fifteen people for the experimental group and fifteen people for the control group. This study used a purposive sampling technique. The inclusion criteria in this study were pregnant women in the first trimester of pregnancy aged 8-12 weeks who

experienced nausea and vomiting and were willing to be respondents. Inclusion criteria in this study were pregnant women who had respiratory infections and pregnant women who were sick.

The assessment of this questionnaire was assessed over the last 12 hours. Scores are interpreted as 0-32 with 0 being the lowest score and 32 being the highest score. Respondents in the treatment group were instructed to apply lavender aromatherapy for 5 days at home, while those in the control group were given education to reduce nausea and vomiting. This research was conducted in the working area of the Limboto Health Center, Gorontalo Regency in June - October 2019. Data analysis used univariate in the form of central tendency and bivariate using the T Paired test and T independent.

RESULTS AND DISCUSSIONS

Result

Table 1. Frequency Distribution of Respondent Characteristics

No.	Kategori	Frekuensi	Persentase
1	Umur		
	<20 tahun	0	0
	20-35 tahun	30	100
	>35 tahun	0	0
2	Pendidikan		
	Pendidikan Dasar	12	40
	Pendidikan Menengah	16	53,33
	Pendidikan Tinggi	2	6,67
3	Pekerjaan		
	IRT	21	70
	Swasta	5	16,66
	Wiraswasta	2	6,67
	PNS	2	6,67
4	Gravida		
	Primigravida	19	63,33
	Multigravida	11	36,67
	Jumlah	30	100

Table 2 Degrees of Nausea Vomiting in First Trimester Pregnant Women Before Intervention

Group (n=30)			
Nausea Vomitting	Intervention	Control	P Value
<i>Index Nausea Vomitting and Retching</i>			
x (SD)	11,21 (3,01)	12,2 (2,0)	0,199*
Median	12,0	13,0	
SD	5-14	8-14	

Table 3. Analysis of the Effect of Nausea and Vomiting Lavender Aromatherapy on Pregnant Women First Trimester Before and After Intervention

Group						
Intervention (n=15)				Control(n= 15)		
Nausea Vomitting	Pre test	Post test	P Value	Pre test	Post test	p
<i>Index Nausea Vomitting and Retching</i>						
x (SD)	11,21 (3,01)	6,07 (2,21)	<0,001*	12,2 (2,20)	12,02 (2,20)	0,203*
Median	12,0	6,0		13,0	12,0	
Range	5-14	2-10		8-14	6-14	
Δ	-5,25 (3,10)			-0,51 (1,52)		<0,001**

In table 1, the data on the characteristics of the respondents are obtained. Based on age data, it is known that all respondents are aged 20-35 years, namely 30 people (100%). In terms of education data, most of the respondents' education in this study

was secondary education, namely 16 people (53.3%). In the employment data, it is known that almost all of the respondents in the study were housewives, namely 21 people (70%). In the gravida data, it is known that most of the respondents in the

study were primigravidas, namely 19 people (63.3%).

In table 2 it is explained that there is no difference in the two groups before the intervention (value $p = 0.199 > \alpha =$

Discussion

At the beginning of the study, it was found that the characteristics of the two groups of respondents were at a safe reproductive age. At the beginning of the study, the results of both groups were homogeneous. At the end of this study, it was found that there was a significant effect of using lavender aromatherapy on reducing nausea and vomiting in first trimester pregnant women in the working area of the Limboto Health Center.

Nausea and vomiting are normal symptoms or are often found in the first trimester of pregnancy. Nausea usually occurs in the morning, but can occur any time of the day and at night. These symptoms are approximately six weeks after the first day of the last menstrual period and last for approximately ten weeks. The reasons for nausea are unknown, but are associated with increased hCG levels, hypoglycemia, increased metabolic demands and effects of progesterone and estrogen on the digestive system. Interview results from respondents who experienced nausea and

0.05), which shows that the two groups are equivalent and worthy of comparison.

Based on table 3, it was found that there was a significant difference in reducing nausea and vomiting in the two groups ($p < 0.001 < \alpha = 0.05$).

vomiting in the first trimester of pregnancy, on average, complained of nausea, vomiting in the morning and sometimes feeling nauseous or nauseous also occurs at night, nausea when smelling the aroma of cooking spices or certain smells, also tired because of work and if it's too late to eat. Factors that cause nausea and vomiting, namely the impact on the ability to smell and see, the nature of work, fatigue, smell, and the environment can affect nausea and vomiting. The adaptability of pregnant women affects the frequency of nausea and vomiting. (Fauziah et al., 2022), (Purba et al., 2022)

The results showed that 19 respondents (63.33%) were primigravidas and 11 respondents (36.67%) were multigravidas. Most primigravidas experience nausea and vomiting more often because primigravidas have not been able to adapt to the hormones estrogen and chorionic gonadotropin and have no experience of pregnancy and childbirth before. Whereas multigravidas are able to adapt to the hormones estrogen and hCG and already

have experience with pregnancy and childbirth (Prawirohardjo, 2014). These factors can exacerbate the symptoms of nausea and vomiting in primigravidas. Moreover, they do not have the experience to deal with these symptoms immediately, so they consider the discomfort experienced by pregnant women in the first trimester as a severe symptom that must be experienced by pregnant women.

In contrast to multigravida who have previous experience. The results of interviews with multigravida respondents, several respondents said that the discomfort of nausea and vomiting that they experienced was a common inconvenience because they had experienced it before, even from some respondents considered discomfort such as nausea and vomiting in the first trimester of pregnant women to be normal and not to worry about and To overcome the discomfort by resting. Whereas in primigravida respondents, they considered the discomfort of nausea and vomiting to be the most unpleasant symptom. Factors that influence nausea and vomiting include: hormonal, psychosocial, gravida status, age, education and occupation.

Based on the results of the study in the experimental group, 11 respondents were not working (housewives) and 10 respondents experienced a decrease in nausea and vomiting from the moderate to

mild category. In the control group, there were 12 respondents who did not work and it was found that all respondents did not experience a decrease in nausea and vomiting, in which the respondents' daily activities, smells, the environment around the house and also the psychological factors of respondents such as sadness, anger, anxiety can affect the occurrence of nausea and vomiting. Rahayu & Sugita, 2018) The results of the research from the experimental group were respondents who worked in the private sector, self-employed and civil servants in the number of 2 respondents and the results obtained 1 respondent did not experience a decrease in nausea and vomiting but were still in the same category, namely moderate nausea and vomiting. In the control group there were 3 respondents who worked and the results obtained for both remained in the medium category. The nausea and vomiting factor is influenced by workload which can trigger stress, fatigue, the environment such as pleasant or unpleasant odors (cigarette smoke, sweat, perfume and so on) which can trigger nausea and vomiting. The control group and the experimental group who worked as civil servants, customer service and opened a shop, seen from their jobs, did not really trigger nausea and vomiting. So that some of the respondents' nausea and

vomiting continued to decrease but were still in the same category.

The results of the study in table 2 in the two groups were equivalent or there was no significant difference in the degree of nausea and vomiting at the start of the study. With these equal conditions, it can be concluded that the impact of giving lavender aromatherapy will be more visible because the two groups are homogeneous. This shows that the two groups are worthy of comparison. Table 2 shows the degree of nausea and vomiting of pregnant women in the first trimester before being given lavender aromatherapy in the experimental group, which was an average of 11.21 (3.01). In the control group 12.6 (2.20) also experienced nausea and vomiting which was slightly higher but not significant. Nausea and vomiting are often felt in the first trimester of pregnancy, but if the complaint continues in pregnancy, daily work is disrupted and the general condition becomes worse.

In table 3 nausea and vomiting can be reduced from 11.21 to 6.07 (2.20) when given certain aromatherapy and inhaled for about 20 minutes. Certain scents which usually come from floral scents, such as mint, basil, rosemary, orange, lavender and roses will provide calm and relaxation when sprayed or applied topically, so pregnant women will have less nausea and

vomiting and peace will be well maintained.

Based on the results of the analysis of 15 respondents in the experimental group, namely giving lavender aromatherapy for 5 days, the result was a decrease of -5.25. The results showed that the questionnaire score decreased from the score before being given lavender aromatherapy. After that, the average value was taken for 3 days and the results did not exceed the value before giving lavender aromatherapy. Based on the results of the analysis of 15 respondents in the control group, namely providing counseling about reducing nausea and vomiting, the results were -0.51 (1.55) experiencing a range of decreasing nausea and vomiting but still in the same category.

The results of the analysis of the experimental group and the control group in the first trimester of pregnant women in the working area of the Limboto Health Center using the paired T statistical test significant value in the experimental group was p-value (<0.001) $< \alpha$ (0.05). Whereas in the control group it was p-value (0.205) $> \alpha$ (0.05). So it can be concluded that giving lavender aromatherapy is more significant than giving counseling to reduce nausea and vomiting. The results of the analysis using the Independent T test found a significant difference in reducing

nausea and vomiting in the two groups ($p < 0.001$) ($\alpha = 0.05$).

The results of this study are supported by research conducted by Paramitha (2016) with the acquisition of research results that there is an effect of giving lavender aromatherapy to reducing nausea and vomiting in pregnant women in the first trimester. The decrease in the frequency of nausea and vomiting is an effect of the content of lavender aromatherapy, namely Linalool. Linalool is a component of lavender which has a sedative or sedative effect and is commonly used as aromatherapy which affects the body's neuroendocrine system which affects the release of hormones and neurotransmitters. This situation will increase the feeling of comfort and calm in pregnant women who experience nausea and vomiting. (Tarigan, 2018), (Lubis et al., 2019)

The same thing was also found in previous studies which explained that in the treatment group the symptoms of nausea and vomiting decreased on the third day of essential oil inhalation compared to the initial assessment in pregnant women in the control group. Vitality in the treatment group was better and mothers felt energetic after inhaling essential oils. Mood scores ranged from mild to moderate energy. Even though there was a significant change in the fatigue score,

namely the third day of treatment, the fatigue score was still high. (Husna, Yolanda Febby, 2021)

Lavender aromatherapy works by affecting the work of the brain, olfactory nerves which are stimulated by the presence of certain aromas, directly related to the hypothalamus which minimizes this taste. The hypothalamus is the part of the brain that controls the glandular system, regulates hormones, and influences growth and other bodily activities, such as heart rate, respiratory function, digestion, body temperature and hunger. In addition, when scented oils are inhaled or rubbed on, nerve cells are stimulated and affect the performance of the limbic system. The limbic system is associated with areas of the brain related to memory function, blood circulation, and the glandular system. The optimal duration for eliminating nausea and vomiting is 20 minutes. (Akbarini et al., 2022)

When lavender is inhaled, the aromatic molecules enter through the lining of the nasal cavity and reach the olfactory area. The olfactory is the nerve that carries impulses for the sense of smell from the nose to the control center of the brain, which is located on the inside of the top of the nose. Once the impulses reach the brain, complex reactions begin. All parts of the brain take part in translating this

reaction, including the limbic system which is the collective name functionally and anatomically for the structure of the human brain which involves emotion, motivation, memory and hormones, sexual arousal, heart rate, and generally a system that connects memory with stimuli. After being translated by all parts of the brain, a good hormonal (endocrine) and nervous response is carried out to overcome healing. The ingredients contained in Avender aromatherapy can affect nausea and vomiting in the first trimester of pregnant women. This is because when inhaled through the nose the lavender content affects the work of the brain, the olfactory nerves which are stimulated by the presence of certain aromas, are directly related to the hypothalamus which is able to provide relaxation and reduce nausea in pregnant women. (Retni et al., 2020), (Mu'alimah et al., 2022)

CONCLUSION

Lavender aromatherapy given for 5 days can reduce or reduce nausea and vomiting experienced by first trimester pregnant women in the working area of the Limboto Health Center. Pregnant women who experience nausea and vomiting are advised to apply lavender aromatherapy as an alternative treatment method to reduce nausea and vomiting in pregnancy

BIBLIOGRAPHY

- Akbarini, O. F., Diajeng, S., Lestari, T., Lamana, A., Kebidanan, J., & Pontianak, P. K. (2022). *FREKUENSI MUAL MUNTAAH PADA. 1*(November).
- Dhilon, D. A., & Azni, R. (2018). Pengaruh Pemberian Terapi Aroma Jeruk Terhadap Intensitas Rasa Mual dan Muntah pada Ibu Hamil di Wilayah Kerja Puskesmas Harapan Raya. *Jurnal Doppler Universitas Pahlawan Tuanku Tambusai*, 2(No 1), 1–8.
- Fatmawati, A. (2022). Formulasi Dan Evaluasi Sediaan Aromaterapi Blended Peppermint, Lavender Dan Lemon Sebagai Antiemetika. *INPHARNMED Journal (Indonesian Pharmacy and Natural Medicine Journal)*, 5(2), 8. <https://doi.org/10.21927/inpharnmed.v5i2.1904>
- Fauziah, Y., Aulya, Y., & Widawati, R. (2022). The Effectiveness Of Peppermint Aromatherapy And Lemon Aromaterapy To Reduce Nausea And Vomiting In Pregnant Women In Trimester I. *Jurnal Kebidanan Malahayati*, 8(2), 443–450. <https://doi.org/10.33024/jkm.v8i2.5001>
- Husna, Yolanda Febby, D. (2021). , Batam University Jl. Abulyatama No 5 Batam 29464Midwifery Study Program, Faculty of Medicine. *Midwifery Study Program, Faculty of Medicine*, 59–69.

- Ilmu, J., & Komplementer, T. (2021). *Bhamada Mual Muntah Treatment for Pregnant Mothers To Relieve Nausea*, . 12(2), 20–26.
- Istiqomah, A., Erisna, M., Wahyuni M., S., & Astuti, E. (2022). Pengaruh Aromaterapi Lavender dan Serai Merah Terhadap Penurunan Intensitas Nyeri Persalinan Kala I Fase Aktif Pada Ibu Primipara. *Jurnal Kesehatan*, 13(1), 110. <https://doi.org/10.26630/jk.v13i1.2839>
- Khadijah, S. R., Husnul, L. N., & Kurniawati, D. (2020). *Gizi ibu hamil merupakan nutrisi yang diperlukan dalam jumlah yang banyak untuk pemenuhan gizi ibu sendiri dan perkembangan janin yang dikandungnya (Khasanah , 2020). Mual dan muntah terus menerus akan menimbulkan komplikasi pada ibu dan janinnya . Kond. 79–86.*
- Krueng, P., Jaya, B., Usila, D., Masthura, S., & Desreza, N. (2022). Pengaruh Pemberian Aromaterapi Minyak Peppermint (Daun Mint) Terhadap Penurunan Mual Muntah Pada Ibu Hamil di Wilayah Kerja The Effect of Peppermint Oil Aromatherapy (Mint Leaves) on Decreasing the Severity of Nausea and Vomiting among Pregnant Women in the Working Area of Krueng Barona Jaya Public Health Center in 2022. *Journal of Healthcare Technology and Medicine*, 8(2), 2615–109.
- Kurnia, H. (2019). Pengaruh Pemberian Aromaterapi Jahe Terhadap Mual Muntah Pada Ibu Hamil Trimester I. *Jurnal Riset Kesehatan Poltekkes Depkes Bandung*, 11(1), 44–51. <https://doi.org/10.34011/juriskesbdg.v11i1.617>
- Lubis, R., Evita, S., Siregar, Y., Poltekkes, D., Medan, K., Medan, J. K., Poltekkes, M., Kebidanan, J., Jamin, J., Km, G. 13, Cih, K. L., Tuntungan, M., & Utara, S. (2019). *Pemberian Aromaterapi Minyak Peppermint Secara Inhalasi Berpengaruh Terhadap Penurunan Mual Muntah Pada Ibu Hamil Di Pmb Linda Silalahi Pancur Batu Tahun 2019 Provision of Peppermint Oil Aromaterapy Influence Against Reduction of Vomitingin Pregnant Mothe.*
- Mu'alimah, M., Tri Purnani, W., & Sunaningsih, S. (2022). Pengaruh Aromaterapi Lavender Terhadap Kualitas Tidur Ibu Hamil Di Wilayah Kerja Puskesmas Tiron Kabupaten Kediri. *Judika (Jurnal Nusantara Medika)*, 6(1), 31–37. <https://doi.org/10.29407/judika.v6i1.17932>
- Purba, A., Simanjuntak, N. M., & Sembiring, R. (2022). The Differences of Anxiety of Pregnant Women in Trimester III on Lavender Aromatherapy. *Jurnal Kebidanan Kestra (Jkk)*, 4(2), 87–92. <https://doi.org/10.35451/jkk.v4i2.1032>
- Rahayu, R., & Sugita, S. (2018). Efektivitas Pemberian Aromaterapi Lavender Dan Jahe Terhadap Penurunan Frekuensi Mual Muntah Pada Ibu

- Hamil Trimester I Di BPM Trucuk Klaten. *Jurnal Kebidanan Dan Kesehatan Tradisional*, 3(1), 19–26. <https://doi.org/10.37341/jkkt.v3i1.62>
- Retni, A., Handayani, F., & Mohamad, I. S. W. (2020). Literature Review: Pemberian Aromaterapi Essential Oil Lavender Terhadap Emesis Gravidarum Pada Kehamilan Trimester Pertama. *Journal of Borneo Holistic Health*, 3(2). <https://doi.org/10.35334/borticalth.v3i2.1687>
- Rizki, Harahap, & Fitri. (2022). Efektivitas Aromaterapi Lavender (*Lavandula Angustifolia*) Dan Muntah Pada Ibu Hamil Trimester I the Effectiveness of Aromatherapy Lavender (*Lavandula Angustifolia*) and Peppermint (*Mentha Piperita L*) on the Intensity of Nausea and Vomiting in Pregnant. *Femina Jurnal Kebidanan*, 2(1), 49–57.
- Ropika, H., & Linda Meliati, K. (2021). Pengaruh Aromatherapi Lavender Terhadap Kualitas Tidur Ibu Postpartum Seksio Sesarea. *Jurnal Kesehatan*, 4(4).
- Tamar, M., Nursanti, I., & Nugroho, N. (2020). Efek Inhalasi Aromaterapi Lemon, Jahe Dan Kombinasi Terhadap Frekuensi Mual Muntah Pada Ibu Hamil Trimester I. *Journal of Islamic Nursing*, 5(1), 41. <https://doi.org/10.24252/join.v5i1.10395>
- Tarigan, P. B. (2018). Quasi Eksperimen. *Efektivitas Lavender*, 53(9), 1689–1699.
- Wijaya, J. I., Suryaman, R., Novianty, T., Kunci, K., & Gravidarum, H. (2022). *Pengaruh pemberian aromaterapi lavender terhadap penurunan frekuensi mual muntah pada penderita hiperemesis gravidarum*. 14.