



The Effect of Peppermint Aromatherapy and Acupressure on Point P6 to Reduce the Incidence of Emesis Gravidarum

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ABSTRACT

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Pregnant women who experience nausea and vomiting during the first trimester are said to have emesis gravidarum. Changes in progesterone and estrogen levels are considered contributing factors to this condition. Complementary therapies such as pericardium acupressure and peppermint aromatherapy can be used to treat emesis gravidarum. The purpose of this study was to evaluate the effects of pericardium acupressure and peppermint aromatherapy on nausea and vomiting experienced by first-trimester pregnant women in Ciadeg Village. The quasi-experimental process used a two-group pre-test and post-test design. The overall study sample consisted of 32 first-trimester pregnant women respondents who experienced emesis gravidarum. Peppermint aromatherapy and pericardium acupressure had a significant impact, according to bivariate analysis using the Wilcoxon test, with a p-value of 0.000 < 0.05. According to the study findings, the average emesis gravidarum score was 8.81 before receiving peppermint aromatherapy and 4.63 after the intervention. The average emesis gravidarum score was 7.87 before pericardium acupressure point 6, and 5.12 after the intervention. Therefore, this complementary therapy can significantly reduce the incidence of emesis gravidarum in first trimester pregnant women in Ciadeg Village in 2025. The goal is to reduce emesis gravidarum and improve maternal understanding of emesis gravidarum treatment.

INTRODUCTION

Emesis gravidarum is a condition characterized by nausea, sometimes accompanied by vomiting, particularly during early pregnancy. This complaint is commonly experienced and felt by pregnant women, especially those in the first trimester. This condition is considered a physiological reaction to hormonal changes in the mother's body. The hormones responsible for this nausea and vomiting are estrogen and progesterone, which are released by the placental human chorionic gonadotropin. Changes in these hormone levels are believed to affect the nausea center in the brain, thus triggering the symptoms of emesis gravidarum.¹

The WHO reported the incidence of emesis gravidarum in 2021 at 12.5% of all pregnancies worldwide. However, the WHO estimates that 70-80% of pregnant women worldwide experience emesis gravidarum in early pregnancy.² Approximately 50 to 90 percent of pregnant women in Indonesia experience vomiting. Emesis gravidarum, also known as nausea and vomiting, occurs differently at each parity. Only 25% of pregnant women experience nausea without vomiting, and 60% to 80% of first-time pregnancies (primigravida) experience vomiting.³



Bogor Regency has the highest number of pregnant women, at 46.495, according to the West Java Provincial Health Profile. Furthermore, from January to April 2023, this number increased to 47.495. The Bogor Regency Health Office reported 47.055 pregnant women across the regency and city of Bogor. According to the data, 14% of them experienced various complaints in early pregnancy, such as nausea, vomiting, anemia, and certain types of chronic energy disorders (KE). According to data from the integrated health post (Posyandu) from January to March 2025, 38 pregnant women in Ciadeg Village experienced emesis gravidarum.⁴

Physiologically, emesis gravidarum does not have many negative impacts on pregnancy. Pregnant women who experience it tend to experience a decreased appetite. However, if left untreated, emesis gravidarum can develop into hyperemesis gravidarum. The impacts and risks to pregnancy include dehydration, electrolyte imbalances, and stunted fetal growth due to limited food and fluid intake.¹ To treat emesis gravidarum during pregnancy, there are many drug-based and non-drug or complementary therapies available. One non-drug therapy that can be used to treat emesis gravidarum is the use of plants, such as peppermint, lemon, ginger, and lavender.⁵ Aromatherapy is a complementary treatment method using scents that utilizes herbal plant materials in the form of essential oils for calming effects.⁶ Peppermint aromatherapy is widely known to be effective in reducing digestive discomforts such as bloating and nausea. The main ingredient in peppermint aromatherapy is menthol, which has antispasmodic properties, helping to relax the smooth muscles in the digestive tract, thereby helping to relieve spasms that can trigger nausea.⁷

In addition to aromatherapy, acupressure is also known to be an effective method for reducing the symptoms of emesis gravidarum. Acupressure, often referred to as "finger prick therapy," is a type of physiotherapy that involves massage and stimulation of specific areas of the body. One frequently used point is the Nei Guan point (pericardium 6), located on the inner wrist. Pressure on this point can stimulate the release of endorphins in the pituitary gland and ACTH along the Chemoreceptor Trigger Zone (CTZ). This process plays a role in inhibiting signals to the nausea and vomiting center in the brain, thereby helping reduce discomfort in pregnant women.⁸

In a study conducted by Hodijah, researchers administered peppermint aromatherapy to pregnant women through inhalation.⁹ The average incidence of nausea and vomiting before the intervention was 8.90, with a minimum score of 6 and a maximum score of 12. Meanwhile, the average incidence of nausea and vomiting after the intervention was 6.55, with a minimum score of 4 and a maximum score of 9. Peppermint aromatherapy was found to have an effect on reducing vomiting in pregnant women in their first trimester at the Hodijah PMB in 2021, with a statistical value of 0.000.

Another study by Krueng et al. reported a significant reduction in the frequency of nausea and vomiting following peppermint aromatherapy intervention.¹⁰ This study was conducted in the Krueg Barona Jaya Community Health Center (Puskesmas) and found that aromatherapy use before and after the intervention differed. The intervention was deemed statistically effective in reducing nausea and vomiting symptoms, with a p-value of 0.011. These results support peppermint aromatherapy as a safe and harmless therapy for pregnant women. Besides aromatherapy, acupressure is also known as an effective method for reducing the symptoms of emesis gravidarum. Acupressure, often referred to as "finger prick therapy," is a type of physiotherapy that involves massaging and stimulating specific areas of the body. One frequently used point is the Nei Guan point (pericardium 6), located on the inner wrist. Pressure on this point can stimulate the release of endorphins in the pituitary gland and ACTH along the Chemoreceptor Trigger Zone (CTZ). This process plays a role in inhibiting signals to the nausea and vomiting center in the brain, thereby helping reduce discomfort in pregnant women.¹¹

According to research, the application was performed on the pericardium 6 point and the intervention lasted for seven minutes.² The intervention was carried out every morning for five days. The results obtained before the intervention showed an average value of 6.70, with a min and max value of 10 each. After the intervention, the average score dropped to 3.50, with the lowest score of 3 and the highest score of 5. The results showed that at the Wana Health Center, Melinting District, stimulation





at the pericardium point 6, with an Asymp. significance value. (2-tailed) of 0.000 (<0.05), had a significant role in reducing the level of emesis gravidarum in first trimester pregnant women.

According to research, the application is performed on the pericardium 6 point and the intervention lasts for seven minutes.² Based on this background, the researchers were interested in conducting a study on emesis gravidarum with the title "The Effect of Peppermint Aromatherapy and Acupressure on the Pericardium 6 Point to Reduce the Incidence of Emesis Gravidarum in First Trimester Pregnant Women in Ciadeg Village, Bogor Regency, in 2025."

METHOD

This study employed a quantitative approach using a quasi-experimental design. The research design used was a two-group pretest-posttest. This study compared two experimental groups: the first group receiving peppermint aromatherapy and the second group receiving acupressure therapy at point P6. This study was conducted in Ciadeg Village, Bogor, from June to July 2025. The study population included all pregnant women experiencing emesis gravidarum in the first trimester. Sampling was conducted using purposive sampling, and respondents met the predetermined inclusion requirements, namely 32 pregnant women. The inclusion criteria included: 1) Pregnant women in the first trimester, 2) Experiencing nausea and vomiting, 3) No history of chronic illness or serious medical disorders (hypertension, diabetes, gastrointestinal disease), and 4) Not taking anti-nausea medication. Exclusion Criteria: 1) Pregnancy with complications, 2) History of digestive disorders, 3) Use of nausea medication.

Research variables refer to measurable and observable characteristics examined in this study.¹² The research variables included peppermint aromatherapy and acupressure therapy at point P6 (independent variables) and nausea and vomiting (dependent variable). Intervention was administered for 5 consecutive days. Peppermint aromatherapy was administered using peppermint essential oil, poured onto cotton wool, with 2-3 drops and inhaled by the respondents for 10 minutes in a slow, relaxed manner. Pericardium 6 acupressure therapy was performed by applying pressure to the wrist area, three finger-widths from the distal wrist between the two tendons. This was done for 3 minutes with adjusted pressure.

The research variables included peppermint aromatherapy and acupressure therapy at point P6 (independent variables) and emesis gravidarum (dependent variable). The research instrument used was the Pregnancy-Unique Quantification of Emesis and Nausea (PUQE-24) questionnaire to measure the level and severity of nausea and vomiting experienced by pregnant women. Data were analyzed using univariate and bivariate analysis, including the Wilcoxon test.¹³

RESULT AND DISCUSSION

Table 1. Frequency distribution of respondent characteristics

Characteristics	Category	n	%
Age	<20 years	5	15.6
	20-35 years	21	65.6
	>35 years	6	18.8
Total		32	100
Employment	Work	17	53.1
	Not Working	15	46.9
Total		32	100
Parity	Primigravida	20	62.5
	Multigravida	12	37.5
Total		32	100



Table 1 showed that the majority of respondents, 21 people (65.6%) were aged between 20 and 35 years. More than half of the respondents, 17 people (53.1%) were working mothers and 20 people (62.5%) were pregnant for the first time, or primigravida.

Table 2. The effect of peppermint aromatherapy on reducing emesis gravidarum

Variable Score Emesis Gravidarum	Min-Max	Mean	SD	P-value
<i>Pretest</i>	4 - 14	8.81	3.12	0.000
<i>Posttest</i>	3 - 12	4.63	2.41	

Table 2 shows that the mean score for reducing emesis gravidarum among the 32 respondents before receiving peppermint aromatherapy was 8.81 (moderate emesis gravidarum). This mean score decreased after receiving peppermint aromatherapy to 4.63 (mild emesis gravidarum). The results of the Shapiro-Wilk normality statistical test. In the pre-test before the peppermint aromatherapy intervention, the p-value was 0.430, which is greater than 0.05, meaning the data was normally distributed. However, after the post-test after the intervention, the p-value became 0.000, which is less than 0.05, meaning the data was not normally distributed.

The Wilcoxon test results for the group receiving peppermint aromatherapy intervention show a p-value of 0.000, which is less than 0.05. Therefore, the null hypothesis (H_0) is rejected. This indicates a statistically significant difference between the conditions before and after the application of aromatherapy in pregnant women experiencing nausea in the first trimester. These findings indicate that peppermint aromatherapy is effective in reducing symptoms of emesis gravidarum in pregnant women in Ciadeg Village in 2025.

Table 3. The effect of pericardium acupressure point 6 on reducing emesis gravidarum

Variable Score Emesis Gravidarum	Min-Max	Mean	SD	P-value
<i>Pretest</i>	5 - 15	7.87	2.65	0.000
<i>Posttest</i>	3 - 10	5.12	2.30	

Table 3 shows that the mean score for reducing emesis gravidarum among the 32 respondents before pericardium acupressure intervention 6 was 7.87 (moderate emesis gravidarum category). The mean score for reducing emesis gravidarum decreased after pericardium acupressure intervention 6 to 5.12 (mild emesis gravidarum category). The results of the Shapiro-Wilk normality statistical test. In the pre-test before the peppermint aromatherapy intervention, the p-value was 0.430, which is greater than 0.05, meaning the data was normally distributed. However, after the post-test after the intervention, the p-value became 0.000, which is less than 0.05, meaning the data was not normally distributed. The Wilcoxon test results for the group receiving acupressure at point P6 showed a p-value of 0.000, which is less than 0.05. Therefore, the null hypothesis (H_0) is rejected. This indicates a statistically significant difference between the conditions before and after the application of aromatherapy in pregnant women experiencing nausea in the first trimester. These findings indicate that acupressure at point P6 is effective in reducing symptoms of emesis gravidarum in pregnant women in Ciadeg Village in 2025.

Table 4. Comparative test of peppermint aromatherapy and pericardium acupressure point 6 on reducing emesis gravidarum

Variable	n	Mean	P Value
Aromatherapy	16	15.09	0.376
Acupressure	16	17.91	



In Table 4, which displays the results of the comparison test, the average rating for peppermint aromatherapy was 15.09, while the average rating for pericardium acupressure was 17.91, with a p-value of 0.376, which is greater than 0.05. These results indicate that there is no statistically significant difference between the benefits of peppermint aromatherapy and pericardium acupressure in pregnant women in their first trimester who experience vomiting during pregnancy in Ciadeg Village. In other words, by 2025, cases of emesis gravidarum in pregnant women in the first trimester in the village will be affected similarly by both intervention methods.

According to theory, peppermint is an herbal plant with a very strong fragrance and a refreshing odor. Peppermint aromatherapy is widely used for nausea and vomiting because it contains menthol (34-45%) and menthone (10-30%) essential oils, which aim to stop muscle contractions in the stomach and intestines caused by serotonin, which causes nausea and vomiting.⁷

According to previous research, entitled "The Effect of Peppermint Oil (Mint Leaf) Aromatherapy on Reducing Nausea and Vomiting in Pregnant Women in the Work Area of the Krung Barona Jaya Community Health Center," the use of peppermint aromatherapy significantly reduced emesis gravidarum in pregnant women. The results of a paired sample t-test showed a p-value of 0.011, indicating a statistically significant difference. These findings suggest that peppermint aromatherapy can help reduce symptoms of nausea and vomiting in pregnant women in the first trimester.¹⁰

In another study titled "The Effect of Peppermint Aromatherapy on Complaints of Nausea and Vomiting in First Trimester Pregnant Women in the Pondok Tinggi Community Health Center Work Area," it was found that the use of peppermint aromatherapy can reduce the likelihood of vomiting in pregnant women. Before aromatherapy use, the average nausea and vomiting score was 3.20, but after aromatherapy use, this score dropped to 2.12, a decrease of approximately 1.07 points. The Wilcoxon statistical test results showed a p-value of 0.000, which is less than the 0.05 significance level. These findings indicate a significant difference between nausea levels before and after peppermint aromatherapy use.¹⁴

These findings are consistent with previous studies demonstrating similar results. This is supported by previous research that also found a significant reduction in nausea and vomiting after aromatherapy use, as evidenced by p-values of $0.011 < 0.05$ and $0.000 < 0.05$. The effectiveness of peppermint may be attributed to its active compounds, particularly menthol, which can relax the digestive tract and reduce nausea. The similarity between the results of this study and previous research further strengthens the possibility that peppermint aromatherapy is effective in reducing nausea and vomiting in pregnant women in the first trimester.

According to the results of the study, titled "The Effect of PC6 Acupressure Therapy in Overcoming Nausea and Vomiting in First Trimester Pregnant Women at the Jongaya Community Health Center in Makassar City," they found a significant difference between the frequency of vomiting before and after acupressure therapy at the pericardium point 6. Analysis using the Wilcoxon test yielded a p-value of 0.000, which is lower than the significance threshold of 0.05. These results demonstrate that acupressure at the pericardium 6 point significantly reduces nausea and vomiting in pregnant women in the first trimester at the Jongaya Community Health Center in Makassar City.¹⁵

According to the theory, this acupressure technique involves applying pressure to a specific acupressure point. This acupressure technique can be used to relieve nausea and vomiting caused by various health conditions, including pregnancy, digestive disorders, and chemotherapy side effects. The Nei Guan point is often used to relieve vomiting. Acupressure stimulation of the pericardium 6 point is thought to release beta-endorphin in the pituitary gland and adrenocorticotrophic hormone (ACTH) along the chemoreceptor trigger zone (CTZ), which can suppress the vomiting center. Previous studies have examined the stimulation of the pericardium 6 acupressure point to assess its effectiveness in reducing vomiting symptoms.¹⁶



Additionally, additional research showed that the average rate of emesis gravidarum differed before and after acupressure therapy at pericardium point 6. The study, entitled "Effectiveness of Acupressure Therapy at Point Pc 6 in Overcoming Emesis Gravidarum in First-Trimester Pregnant Women at the Wana Community Health Center, Melinting District," showed a p-value of 0.000, less than the significance threshold of 0.05. The average frequency of vomiting before the intervention was 6.70, and decreased to 3.50 after the intervention. These findings indicate that acupressure at pericardium point 6 is effective in reducing the frequency of vomiting in pregnant women in the first trimester.²

This finding is consistent with previous study showing that acupressure at pericardium point 6 can help reduce the frequency of vomiting in pregnant women in the first trimester. According to the researchers, the success of acupressure.

CONCLUSION

Peppermint aromatherapy and acupressure at the P6 point significantly reduce nausea and vomiting in pregnant women because the P6 acupressure therapy stimulates the release of biochemical substances such as neurotransmitters that can stabilize the stomach and regulate gastrointestinal function. The result of this stimulation blocks nausea signals to the brain, making it effective for nausea in pregnancy. Meanwhile, peppermint aromatherapy works through olfactory stimulation, which may promote relaxation and reduce nausea perception. This non-pharmacological treatment can be developed and disseminated to pregnant women who experience nausea and vomiting through health information during pregnancy check-ups and leaflets distributed at integrated health posts (Posyandu) about peppermint aromatherapy and P6 acupressure therapy for pregnant women who experience nausea and vomiting.

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