

The Effect Of Ginger Aromatherapy On Reducing Emesis Gravidarum In Pregnant Women In The First Trimester At The PMB Morina Neri Deli Serdang In 2025

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ABSTRACT

Emesis gravidarum is excessive nausea and vomiting that commonly occurs in pregnant women in the first trimester. This condition can disrupt daily activities, reduce nutritional intake, and impact the health of both the mother and the fetus. The use of non-pharmacological therapies such as ginger aromatherapy is considered safer and more effective because ginger contains active compounds like gingerol which have the ability to prevent or reduce nausea and vomiting in pregnancy. This study aims to determine the effect of ginger aromatherapy on reducing emesis gravidarum in pregnant women in the first trimester at PMB Morina Neri Deli Serdang in 2025. This type of research is quantitative with a pre-experimental design using a one-group pretest-posttest approach. The sample consisted of 20 respondents selected using purposive sampling technique. Data were collected through observation sheets using the PUQE Score (Pregnancy-Unique Quantification of Emesis) before and after the treatment of ginger aromatherapy for 5 consecutive days. The results of the study showed that after conducting the Wilcoxon test with a P value of $0.000 < 0.05$, it indicates that there is an effect of ginger aromatherapy treatment on reducing emesis gravidarum in pregnant women in the first trimester at PMB Morina Neri Deli Serdang in 2025. The conclusion of this study is that there is an effect of ginger aromatherapy on reducing emesis gravidarum in pregnant women in the first trimester at PMB Morina Neri Deli Serdang in 2025. It is expected that at PMB Morina Neri Deli Serdang, ginger aromatherapy can be utilized as a safe supportive therapy in midwifery services, particularly in handling complaints of nausea and vomiting in early pregnancy.

Keywords: Ginger Aromatherapy, Emesis Gravidarum, Pregnant Women In The First Trimester

INTRODUCTION

Pregnancy is a transitional period, namely a time between life before having a child who is now in the womb and life later after the child is born. The majority of pregnant women who experience nausea and vomiting are in the first trimester, and this becomes a cause of anxiety and discomfort for first-trimester pregnant women. The impacts caused by nausea and vomiting can interfere with the mother's daily activities, cause fatigue, nutritional disorders, dehydration, and weight loss. A non-pharmacological way to overcome nausea and vomiting in pregnant women is by using ginger aromatherapy.

Pregnancy is a physiological condition, but a normal pregnancy can also turn into a pathological pregnancy. Pathology in pregnancy is one of the complications or disorders accompanying the mother during pregnancy. Pregnant women who experience medical disorders or health problems are included in the high-risk category, so the need for pregnancy care implementation becomes greater (Endarwati & Wardani, 2025).

The first trimester of pregnancy is a critical period when the fetus is in the early stage of organ formation. If the fetus experiences certain nutritional deficiencies, the formation of perfect organs may fail. In addition, the fetus is at risk of being born with low birth weight. Various efforts to reduce nausea and vomiting during pregnancy can be carried out both pharmacologically and non-pharmacologically (Ani & Machfudloh, 2021).

Nausea and vomiting in pregnant women are feelings of nausea and vomiting or both occurring during the first trimester of pregnancy. As many as 50–75% of pregnant women will experience symptoms of nausea and vomiting in the first trimester or early pregnancy. Nausea usually occurs in the morning, but it can also arise at any time and at night. These symptoms generally occur after approximately 6 weeks from the first day of the last menstrual period and last for about 10 weeks. Nausea and vomiting occur in 60–80% of primigravida and 40–60% of multigravida women (Wenny Indah Purnama Eka Sari, SST., M.Keb. Kurniyati, SKM., SST., M.Keb. Farida Esmianti, S.Pd., 2023).

According to the World Health Organization (WHO) 2023, emesis gravidarum occurs worldwide with an incidence rate reaching 12.5%. The incidence of emesis gravidarum in the world varies greatly, namely 10.8% in China, 2.2% in Pakistan, 1–3% in Indonesia, 1.9% in Turkey, 0.9% in Norway, 0.8% in Canada, 0.5% in California, and 0.5–2% in America (Dedeh Kurniasari, Shinta Mona Lisca, Agus Santi Br. Ginting, De Asiah Rahayu, Devi Sri Handayani, Ina Marlina, 2024).

In Indonesia in 2023, as many as 50%–75% of pregnant women experienced nausea and vomiting in the first trimester or early pregnancy. Nausea and vomiting occurred in 60%–80% of primigravida and 40%–60% of multigravida women. The prevalence of emesis gravidarum in Indonesia also differs in each region (Nopi Hendriani, 2024).

Nausea and vomiting in first-trimester pregnant women still occur in society, and most of the management methods still use pharmacological therapy. Pharmacological and non-pharmacological therapies can be used to overcome complaints of nausea and vomiting in pregnant women. Pharmacological therapy includes the use of antihistamines, metoclopramide, vitamin B6 (pyridoxine), ondansetron, and methylprednisolone. Vitamin B6 can also increase serotonin production, which is a neurotransmitter in the brain, by inhibiting the CNS (central nervous system), thereby inducing the Chemoreceptor Trigger Zone (CTZ), namely the emotional transmitter in the body can remain stable so that anxiety and even depression are reduced. However, 34% of pregnant women choose not to consume vitamin B6 and 26% of them reduce the dosage because they are worried about the side effects of drugs used during pregnancy (Tamara Gusti E et al., 2022).

Aromatherapy is one of the therapeutic actions using essential oils that have benefits in improving physical and psychological conditions. Aromatherapy is one of the alternative

treatment methods that uses extracts from plants in the form of essential oils (Wenny Indah Purnama Eka Sari, SST., M.Keb. Kurniyati, SKM., SST., M.Keb. Farida Esmianti, S.Pd., 2023).

Ginger is an annual plant with pseudo-stems reaching a height of 30–75 cm. It has long narrow leaves resembling ribbons, with a length of 15–23 cm and a width of approximately 2.5 cm, arranged regularly in two alternating rows. Ginger plants grow in clumps, propagate, produce rhizomes, and flower. The flowers are spike-shaped and emerge on the soil surface, shaped like rods or oval eggs, with a length of approximately 25 cm. The flower crown is tubular, with rather narrow and pointed petals, yellowish-green in color. Ginger rhizomes vary in shape, from slightly flat to elongated round, with colors ranging from yellowish-white to reddish-yellow (Bahrah, S.ST., 2022).

Ginger aromatherapy is the most effective aromatherapy and has many advantages for pregnant women experiencing nausea and vomiting compared to other herbal plant aromatherapies. The first advantage of ginger aromatherapy is that it contains essential oils capable of blocking serotonin, which is a neurotransmitter in the central nervous system and enterochromaffin cells in the digestive tract, by inhibiting the induction of Human Chorionic Gonadotrophin (HCG) into the stomach, a chemical compound that can cause stomach contractions so that nausea and vomiting are reduced (Alrahmatasyah et al., 2022).

Based on a preliminary survey conducted at PMB Morina Neri Deli Serdang, after interviews with 10 first-trimester pregnant women, there were 6 pregnant women who experienced nausea and vomiting more than 5 times a day, causing decreased appetite, weakness, and inability to carry out activities, and 4 pregnant women who experienced nausea and vomiting only in the morning but without interfering with their activities. These pregnant women stated that they had never received ginger aromatherapy.

METHODS

The design used in this study was a quasi-experimental method with a one-group pretest-posttest design. This study used one group; the subjects were first measured for the frequency of nausea and vomiting (pre-test). Then, an intervention in the form of ginger aromatherapy was administered via inhalation by placing 2 drops of essential oil on cotton and inhaling for 3 breaths, followed by a 5-minute rest, after which it was repeated once more. This was carried out every morning. The intervention was conducted for 5 days, after which the frequency of nausea and vomiting was measured again (post-test) using the 24-PUQE (Pregnancy Unique Qualification of Emesis) observation sheet.

This study was conducted at PMB Morina Neri. The research period started from October 2024 to July 2025. The sample in this study consisted of 20 first-trimester pregnant women at PMB Morina Neri. The inclusion criteria in this study were first-trimester pregnant women experiencing nausea and vomiting, and pregnant women who were willing to become respondents. The bivariate test used in this study was the Wilcoxon test to determine the effect of ginger aromatherapy administration on reducing emesis gravidarum in first-trimester pregnant women at PMB Morina Neri Deli Serdang in 2025.

RESULTS

Table 1 Frequency Distribution of Characteristics of First Trimester Pregnant Respondents Based on Age at PMB Morina Neri Deli Serdang in 2025

No	Age	Total	
		F	%
1	<20 Year	2	10
2	20-35 Year	14	70
3	>35 Year	4	20
Total		20	100

Based on Table 1, the frequency distribution of respondents based on the age of pregnant women experiencing emesis gravidarum at PMB Morina Neri Deli Serdang in 2025 shows that out of 20 pregnant women (100%), most were aged 20–35 years, totaling 14 people (70%), while the fewest were pregnant women aged < 20 years, totaling 2 people (10%).

Table 2 Frequency Distribution of Characteristics of First Trimester Pregnant Women Respondents Based on Parity at PMB Morina Neri Deli Serdang in 2025

No	Parity	Total	
		F	%
1	Primigravida	13	65
2	Multigravida	7	35
Total		20	100

Based on Table 2, the frequency distribution of respondents based on the parity of pregnant women experiencing emesis gravidarum at PMB Morina Neri Deli Serdang in 2025. It is known that out of 20 pregnant women (100%), the majority were Primigravida pregnant women totaling 13 people (65%), while the fewest were Multigravida pregnant women totaling 7 people (35%).

Table 3. Frequency Distribution of Respondent Characteristics of Pregnant Women by Trimester Based on Gestational Age at Morina Neri Deli Serdang PMB in 2025

No	Gestational Age	Total	
		F	%
1	4 Week	3	15
2	5 Week	3	15
3	6 Week	-	-
4	7 Week	2	10
5	8 Week	4	20
6	9 Week	4	20
7	10 Week	4	20
Total		20	100

Based on Table 3, the frequency distribution of respondents based on the gestational age of pregnant women who experienced emesis gravidarum at PMB Morina Neri Deli Serdang in 2025. It is known that out of 20 pregnant women (100%), the most pregnant women were 8 weeks pregnant, namely 4 people (20%), while the least pregnant women were 7 weeks pregnant, namely 2 people (10%).

Table 4. Frequency Distribution Before and After Ginger Aromatherapy for Pregnant Women with Emesis Gravidarum at PMB Morina Neri Deli Serdang in 2025

No	Degree of Emesis Gravidarum	Before Given		After Given	
		f	%	F	%
1	Light	3	15	16	80
2	Medium	14	70	4	20
3	Heavy	3	15	-	-
Total		20	100	20	100

Based on Table 4, the frequency distribution of the decrease in Emesis Gravidarum among pregnant women at PMB Morina Neri Deli Serdang before being given ginger aromatherapy, namely 20 research respondents, showed that most respondents experienced moderate nausea and vomiting, totaling 14 people (70%), and the fewest were 3 people (15%). Based on the frequency distribution of the decrease in Emesis Gravidarum among pregnant women respondents at PMB Morina Neri Deli Serdang after being given ginger aromatherapy, namely 20 research respondents, it was found that most respondents experienced mild nausea and vomiting, totaling 16 people (80%), and the fewest respondents experienced moderate nausea and vomiting, totaling 4 people (20%).

Table 5 Wilcoxon test results on the effect of ginger aromatherapy administration on the reduction of emesis gravidarum in first-trimester pregnant women at PMB Morina Neri Deli Serdang in 2025

	Before Given-After Given
Z	-4.000 ^b
Asymp. Sig.(2-Tailed)	0.000

Based on Table 5 in the Wilcoxon test, it can be seen that from the table above a sig value = 0.000 was obtained where < 0.05, therefore it can be concluded that there is an effect of giving ginger aromatherapy on reducing emesis gravidarum in first trimester pregnant women at PMB Morina Neri Deli Serdang in 2025.

DISCUSSION

The Effect of Ginger Aromatherapy Administration on the Reduction of Emesis Gravidarum in First Trimester Pregnant Women at PMB Morina Neri Deli Serdang in 2025

The frequency distribution of the reduction in emesis gravidarum among pregnant women respondents at PMB Morina Neri Deli Serdang before being given ginger aromatherapy showed that out of 20 research respondents, most respondents experienced moderate nausea and vomiting, totaling 15 people (75%), while the fewest experienced severe nausea and vomiting, totaling 3 people (10%).

It is known that before being given ginger aromatherapy, the majority of respondents experienced nausea and vomiting in the moderate to severe category. This can be seen from the measurement results using the PUQE-24 instrument, which assesses the frequency of nausea, vomiting, and dry heaving in the last 24 hours.

Emesis gravidarum is a physiological symptom that often appears in the first trimester of pregnancy due to an increase in the hormones human chorionic gonadotropin (hCG), estrogen, and progesterone. The increase in these hormones stimulates the vomiting center in the medulla oblongata, making pregnant women more susceptible to nausea and vomiting (Manuaba, 2010).

Based on the frequency distribution of the reduction in emesis gravidarum among pregnant women respondents at PMB Morina Neri Deli Serdang after the administration of ginger aromatherapy, out of 20 research respondents, it was found that most respondents experienced mild nausea and vomiting, totaling 16 people (80%), while the fewest respondents experienced moderate nausea and vomiting, totaling 4 people (20%).

After the intervention in the form of ginger aromatherapy using the inhalation method for 5 consecutive days, there was a significant decrease in PUQE scores. The statistical test results using Wilcoxon showed a value of $p = 0.000$ ($p < 0.05$), meaning that there was an effect of ginger aromatherapy administration on reducing emesis gravidarum.

The majority of respondents who previously experienced moderate to severe nausea and vomiting shifted to the mild category, and some respondents no longer complained of nausea and vomiting that interfered with daily activities (Manuaba, 2010).

This study is in line with Wirda, Ernawati, Dina, Oktaviana, Suardi, and Nofia (2020), entitled "The Effect of Ginger Aromatherapy Administration on the Reduction of Emesis Gravidarum in First Trimester Pregnant Women in the Working Area of Mangarabombang Health Center, Takalar Regency." This study used a quasi-experimental one-group pretest-posttest design with purposive sampling involving 10 participants. Data collection was conducted through interviews and assessments using an observation sheet for the frequency of nausea and vomiting before and after the intervention. Based on the study results using the Wilcoxon test, it was shown that there was an effect of ginger aromatherapy use on reducing emesis gravidarum in first trimester pregnant women with a p -value = $0.041 < \alpha 0.05$ (Wirda et al., 2020).

This study is also in line with M Haikal Dimas Adrianto (2022), entitled "The Effect of

Ginger Aromatherapy Administration on the Incidence of Emesis Gravidarum in First Trimester Pregnant Women at PMB A Klapanunggal Bogor in 2022.” The method used in this study was experimental, specifically adopting a quasi-experimental design with a pre-test and post-test configuration without a control group. The research cohort involved 30 first trimester pregnant women experiencing emesis gravidarum who received prenatal care at PMB A Klapanunggal. Based on the results of the 2022 investigation on the impact of ginger aromatherapy on the incidence of emesis gravidarum among pregnant women at PMB A Klapanunggal Bogor, it can be concluded that there was a significant difference in the frequency of emesis gravidarum before and after the implementation of ginger aromatherapy in first trimester pregnant women ($p\text{-value} = 0.000 < 0.005$) (M Haikal Dimas Adrianto & Nurul Ainul Shifa, 2023).

This study is also in line with Suryati Romauli (2023), entitled “The Effect of Ginger Aromatherapy on the Reduction of Nausea and Vomiting in First Trimester Pregnant Women.” This type of research was a quasi-experimental study with a one-group pretest-posttest design. The population consisted of 155 pregnant women experiencing nausea and vomiting, with samples taken using purposive sampling totaling 22 respondents. Data were obtained using the Pregnancy Unique Quantification of Emesis/Nausea (PUQE) Scale questionnaire to measure the frequency of nausea and vomiting before and after ten days of ginger aromatherapy administration. Data analysis used the Wilcoxon Signed Rank Test. The results showed that there was an effect of ginger aromatherapy on reducing nausea and vomiting in first trimester pregnant women where the Sig (2 tailed) value = $0.000 < \alpha 0.05$ (Romauli, 2023).

This study is also in line with Gusti Arya Agung Ayu Davina Hindira Putri, Ni Made Nurtini, and Ni Made Ayu Yulia Raswati Teja (2024), entitled “The Effectiveness of Ginger Aromatherapy on Reducing Nausea and Vomiting in Pregnant Women: A Quasi-Experimental Study.” This study was quantitative research with a quasi-experimental design using a pretest-posttest without control approach involving 8 respondents selected using purposive sampling techniques. The research questionnaire was a standardized instrument, namely PUQE-24, used to determine the degree of nausea and vomiting among respondents. Data analysis used the Wilcoxon test. Based on the bivariate analysis results, a posttest median value of 3.5 and a pretest median value of 7.5 were obtained, with a $p\text{-value}$ of 0.010 ($p < 0.05$) (G. A. A. A. D. H. Putri et al., 2024)

Mechanistically, ginger (*Zingiber officinale*) contains active compounds gingerol and shogaol, which have antiemetic effects. Gingerol works by inhibiting serotonin receptors (5-HT₃) in the digestive tract and central nervous system, thereby suppressing the vomiting reflex. In addition, the essential oil content in ginger provides a calming aromatherapy effect when inhaled because it can stimulate the limbic system in the brain, which plays a role in regulating emotions and feelings of comfort (Riana, 2022).

Emesis gravidarum is a condition commonly occurring in mothers during early pregnancy (more than 6 weeks). The cause of emesis gravidarum remains unclear. Several theories are suspected to contribute to emesis gravidarum, such as hormonal changes, genetics,

gastrointestinal factors, and psychological factors. Emesis gravidarum is actually not harmful to the fetus if balanced with appropriate lifestyle changes such as eating small but frequent meals, avoiding high-fat foods, managing stress, and so on (H. F. widyanto Putri et al., 2025).

Nausea and vomiting or emesis gravidarum during pregnancy is one of the earliest, most common, and most stressful symptoms associated with pregnancy. Emesis gravidarum causes decreased appetite, resulting in changes in electrolyte balance involving potassium, calcium, and sodium, which lead to changes in body metabolism (Wenny Indah Purnama Eka Sari, SST., M.Keb. Kurniyati, SKM., SST., M.Keb. Farida Esmianti, S.Pd., 2023).

The causes of nausea and vomiting are considered multifactorial problems. Related theories include hormonal factors, the vestibular system, digestion, psychological factors, hyperolfaction, genetics, and evolutionary factors. Based on a prospective study of 9,000 pregnant women experiencing nausea and vomiting, the results showed that the risk of nausea and vomiting increased in primigravida women, women with lower education levels, smokers, overweight or obese women, and those with a history of nausea and vomiting in previous pregnancies (Zakia, 2022).

In addition to hormonal factors, emesis gravidarum is also influenced by psychological factors (stress, anxiety), gastrointestinal factors, and metabolic factors. Untreated nausea and vomiting can cause dehydration, electrolyte imbalance, nutritional disorders, and may even progress to hyperemesis gravidarum, which is dangerous for both mother and fetus (Prawirohardjo, 2020).

The reduction in nausea and vomiting after ginger aromatherapy intervention can also be explained from a psychological perspective. The use of aromatherapy increases relaxation, reduces stress, and improves the mood of pregnant women, thereby contributing to a decrease in the intensity of nausea and vomiting (Kurniasih, 2021).

According to the Researcher's Assumptions, the administration of ginger aromatherapy has an effect on reducing symptoms of emesis gravidarum in first trimester pregnant women, considering that the active compounds in ginger such as gingerol and zingerone are scientifically known to have antiemetic effects and are capable of stimulating the central nervous system to reduce feelings of nausea and vomiting. The researcher also assumes that all respondents were in stable health conditions and did not have comorbidities that could worsen symptoms of nausea and vomiting during pregnancy. In addition, it is assumed that respondents did not use other interventions during the research period such as medications to prevent or reduce nausea and vomiting, herbal supplements, or psychological therapies that could affect the condition of emesis gravidarum. The aromatherapy administration process was carried out consistently and according to procedures, both in terms of dosage, duration of exposure, and frequency of use, and was conducted in an environment that supported the comfort and relaxation of pregnant women.

CONCLUSION

There Is an Effect of Ginger Aromatherapy Administration on the Reduction of Emesis Gravidarum in First Trimester Pregnant Women at PMB Morina Neri Deli Serdang in 2025

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