



**THE EFFECT OF GINGER AROMATHERAPY ON REDUCING THE
FREQUENCY OF NAUSEA AND VOMITING IN FIRST TRIMESTER PREGNANT
WOMEN IN THE KEPENUHAN HEALTH CENTER WORK AREA**

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A B S T R A C T

Nausea and vomiting during pregnancy typically occur between the 4th and 8th weeks of gestation and may persist until the 14th to 16th week. These symptoms are experienced by approximately 70-80% of pregnant women. Among various herbal aromatherapies, ginger aromatherapy is considered the most effective and offers several advantages for pregnant women experiencing nausea and vomiting compared to other herbal options. This study employed a pre-experimental research design using a One-Group Pretest-Posttest Design, conducted from March 20 to April 20, 2023. A total of 32 participants in their first trimester of pregnancy, residing in the working area of Kepenuhan Public Health Center, were provided with ginger aromatherapy to assess its effectiveness in reducing nausea and vomiting. The analysis of the data revealed that after the intervention, the majority of participants (24 pregnant women or 75%) reported no further nausea and vomiting, while 8 participants (25%) continued to experience these symptoms. The statistical analysis yielded an Asymp. A sig value of 0.042, indicating that $p < 0.05$, leads to the acceptance of the alternative hypothesis (H_a) and the rejection of the null hypothesis (H_o). These findings that the application of ginger aromatherapy is effective in significantly reducing the frequency of nausea and vomiting among first-trimester pregnant women in the working area of Kepenuhan Public Health Center in 2023.

INTRODUCTION

Nausea is an unpleasant feeling associated with feeling sick or pushing to vomit, while vomiting is the expulsion of stomach contents through the mouth due to involuntary muscle spasms. Nausea and vomiting occur during pregnancy between 4-8 weeks and continue until 14-16 weeks of pregnancy. Nausea and vomiting are a major symptom in 70-80% of pregnancies (Suryaningrum et al., 2019).

The impact of nausea and vomiting for pregnant women if not treated is a decrease in appetite which results in changes in electrolyte balance (potassium, calcium, and sodium) which causes changes in body metabolism, weight loss of around 5% because carbohydrate, protein, and fat reserves are used for energy. Pregnant women need adequate nutritional intake, even more, because the nutritional intake needed by pregnant women is to meet the needs of the fetus and mother. Excessive nausea and vomiting might prevent pregnant women from meeting their nutritional needs. This will affect the growth and development of the fetus because the first trimester is the phase where the fetus' organs are formed (Dyana & Febriani 2020).

Aromatherapy is a therapy that uses essential oils or pure oil extracts to help improve or maintain health, lift spirits, and refresh and calm the body and soul. So aromatherapy is recommended to overcome complaints in pregnant women because it can provide a comfortable and calm feeling to the mother and her fetus.

Ginger aromatherapy is the most effective aromatherapy and has many advantages for pregnant women who are experiencing nausea and vomiting compared to other herbal aromatherapy. The first advantage of ginger aromatherapy is that it contains essential oils that can be a serotonin barrier.

Based on data from the Kepenuhan Health Center, the number of pregnant women in the Kepenuhan Health Center work area in 2022 is as follows:

Table 1 The Number of First Trimester Pregnant Women in the Working Area of Kepenuhan Public Health Center in 2023

<i>No</i>	<i>Village</i>	<i>Number of Pregnant Women in Trimester I</i>
1.	Kepenuhan Tengah	89
2.	Kepenuhan Barat	52
3.	Kepenuhan Hilir	32
4.	Kepenuhan Timur	58
5.	Kepenuhan Barat Seroja	22
6.	Kepenuhan Raya	35
7.	Kepenuhan Baru	36
8.	Kepenuhan Makmur	26
9.	Kepenuhan Sejati	26
10.	Kepenuhan Sei Mandian	20
11.	Ulak Patian	31
12.	RBS	20

13.	Kepenuhan Barat Mulia	32
	Total	479

Source: Health Center Kepenuhan 2022

The data presented in the table indicate variations in the number of first-trimester pregnant women across different villages. It is observed that nausea and vomiting are common symptoms experienced by most pregnant women during the first trimester. Therefore, effective measures are required to alleviate these symptoms. One potential solution is the use of ginger aromatherapy, which has been identified as a promising alternative to help manage nausea and vomiting in pregnant women. Considering this background, the researcher aims to conduct a study titled "The Effect of Ginger Aromatherapy on Reducing the Frequency of Nausea and Vomiting in First Trimester Pregnant Women in the Kepenuhan Health Center Work Area".

METHODS

This study employs a pre-experimental research design, specifically utilizing a one-group pretest-posttest design, as described by Hidayat (2012). The research aims to investigate the impact of ginger aromatherapy on the frequency of nausea and vomiting among first-trimester pregnant women at the Kepenuhan Health Center in 2022. The study population consists of all first-trimester pregnant women who visited the health centre in December 2022 and reported experiencing nausea and vomiting, totalling 479 individuals. From this population, a sample of 32 participants was selected for the study. Data analysis will involve both univariate and bivariate analyses, with the t-test being applied to assess the effectiveness of the intervention.

FINDINGS

1. Analysis Univariate

Based on the obtained results, the frequency distribution of nausea and vomiting experienced by first-trimester pregnant women is described as follows.

- a. Frequency of Nausea and Vomiting in First-Trimester Pregnant Women Before Receiving Ginger Aromatherapy in the Working Area of Kepenuhan Health Center in 2023.

Table 2. Distribution of Nausea and Vomiting Frequency Among First-Trimester Pregnant Women Before Ginger Aromatherapy Administration in the Working Area of Kepenuhan Health Center, 2023.

Nausea and Vomiting

Aromatherapy	Vomiting	%	Not Vomiting	%
First-Trimester Pregnant Women	32	100	0	0

Table 2 above explains that 32 nauseous vomit on Mother 32 mothers were pregnant in the first trimester (100%). The data obtained before the implementation of aromatherapy This became information important compared to after aromatherapy ginger on Mother pregnant trimester 1.

Table 3 Distribution of Average Frequency of Nausea and Vomiting in Pregnant Women in the First Trimester Before Being Given Ginger Aromatherapy in the Work Area of the Kepenuhan Health Center in 2023

No	Variables	N	Mean	SD	Min-Max
1.	Frequency Nauseous Vomit Before giving aromatherapy Ginger	32	9	2,040	6-12

Based on the table above, the data obtained shows that the average frequency of nausea and vomiting in pregnant women before being given ginger aromatherapy was 9 with the lowest PUQE value of 6 and the highest PUQE value of 12.

- b. Distribution of Nausea and Vomiting Frequency Among First-Trimester Pregnant Women after receiving Ginger Aromatherapy in the Working Area of Kepenuhan Health Center, 2023.

After processing the data, the results indicate a change in the frequency of nausea and vomiting among first-trimester pregnant women after receiving ginger aromatherapy. This change is presented in the following table.

Table 4 Frequency Distribution of Nausea and Vomiting in Pregnant Women in the First Trimester After Being Given Ginger Aromatherapy in the Kepenuhan Health Center Work Area in 2023

Nausea and Vomiting

Aromatherapy	Vomiting	%	Not Vomiting	%
First-Trimester Pregnant Women	8	25%	24	75

From the table above, it can be explained that after being given ginger

aromatherapy, there were 8 pregnant women (25%) who experienced nausea and vomiting and 24 pregnant women (75%) who did not experience nausea and vomiting. There was a change in the frequency of nausea and vomiting in pregnant women in the first trimester after being given ginger aromatherapy in the Kepenuhan Health Center Work Area in 2023.

Table 5 Distribution of Average Frequency of Nausea and Vomiting in Pregnant Women in the First Trimester After Being Given Ginger Aromatherapy in the Work Area of the Kepenuhan Health Center in 2023

No	Variables	N	Mean	SD	Min-Max
1.	Frequency of Nausea and Vomiting After Receiving Ginger Aromatherapy.	32	3.75	1,390	3-7

The results presented in the table indicate that the average frequency of nausea and vomiting in pregnant women after receiving ginger aromatherapy is **3.75**, with the lowest PUQE score of **3** and the highest PUQE score of **9**.

- c. Frequency Nauseous Vomit on Mother Pregnant Trimester I After Given Aromatherapy Ginger in the Region Work Health Center Kepenuhan Year 2023.

Table 6 Distribution Decrease Frequency Nauseous Vomit On Mother First Trimester Pregnancy After Given Aroma Therapy Ginger in the Work Area Health Center Kepenuhan Year 2023

Aromatherapy	Pre-Test				Post-Test				Total	
	Vomit	%	Not Vomit	%	Vomit	%	Not Vomit	%	N	%
First- Trimester Pregnant Women	32	100	0	0	8	25	24	75	32	100

Table 6 shows that before being given ginger aromatherapy, all pregnant women experienced nausea and vomiting as many as 32 pregnant women (100%). Then after being given ginger aromatherapy, there were 8 pregnant women (25%) who experienced nausea and vomiting and 24 pregnant women (75%) who did not experience nausea and vomiting. The frequency of nausea and vomiting decreased after being given ginger aromatherapy in pregnant women in the first trimester

after being given ginger aromatherapy in the Kepenuhan Health Center Work Area in 2023.

Table 7 Distribution of Average Reduction in Frequency of Nausea and Vomiting in Pregnant Women in the First Trimester Before and After Being Given Ginger Aromatherapy in the Kepenuhan Health Center Work Area in 2023

No	Variables	N	Mean	SD	Min-Max
1.	Pre-Test	32	9	2,040	6-14
2.	Post Test	32	3.75	1,390	3-7

Source: Test Statistics

Based on Table 4.6 results study obtained that the average frequency result of nausea vomit in mothers pregnant before being given ginger aromatherapy is 8.81 with the lowest PUQE value is 6 and the Highest PUQE value of 12. Then after giving treatment the average frequency of nausea and vomiting was 3.75 with the highest PUQE value being 9 and the lowest 3.

d. Bivariate Analysis

- a. Difference Frequency Nauseous Vomit On Mother Pregnant Trimester I Before And After Given Aroma Therapy Ginger in the Work Area Health Center Kepenuhan Year 2023.

In this study, a bivariate analysis was conducted using the **t-test** to evaluate differences in the frequency of nausea and vomiting among first-trimester pregnant women before and after receiving ginger aromatherapy. The research data can be presented in the following table.

Table 8. Differences in the Frequency of Nausea and Vomiting Among First-Trimester Pregnant Women Before and After Receiving Ginger Aromatherapy in the Working Area of Kepenuhan Health Center, 2023.

Variable	Mean	Deviation
Ginger	9	
Aromatherapy	3.75	5.25

As shown in Table 8, the average frequency of nausea and vomiting in first-trimester pregnant women before the intervention was **9**, whereas after receiving ginger aromatherapy, the average decreased to **3.75**. This indicates that ginger aromatherapy is effective in reducing nausea and vomiting among first-trimester pregnant women in the Kepenuhan Health Center working area in 2023, with a recorded difference of **5.25**.

- b. Effectiveness of Ginger Aromatherapy on the Frequency of Nausea and Vomiting in Pregnant Women in the First Trimester.

In this study, a bivariate analysis was conducted using the **t-test** to examine the effectiveness of ginger aromatherapy in reducing the frequency of nausea and vomiting among first-trimester pregnant women before and after the intervention. The data is presented in the following table.

Table 9 Differences in Effectiveness Before and After the Administration of Ginger Aromatherapy on the Frequency of Nausea and Vomiting in First-Trimester Pregnant Women.

Variable	Mean Rank	T	Df	p-value
Post Test	6.375	2.351	32	.0042

Based on the table above, there is a difference in the effectiveness of ginger aromatherapy before and after its administration in reducing the frequency of nausea and vomiting among first-trimester pregnant women. This is indicated by the Asymp. Sig value of **0.042**, which is less than **0.05**, meaning that the alternative hypothesis (H_a) is accepted, and the null hypothesis (H_o) is rejected. This result suggests that there is no significant difference in effectiveness before and after the administration of ginger aromatherapy among first-trimester pregnant women in the Kepenuhan Health Center working area in 2023.

DISCUSSION

The study was conducted on a total of **32 respondents**, all of whom were evaluated using the **PUQE (Pregnancy-Unique Quantification of Emesis and Nausea) questionnaire**, which comprises **three key questions** designed to assess the severity of nausea and vomiting during pregnancy. As presented in **Table 4.1**, the findings revealed that prior to the administration of ginger aromatherapy, all participants (**100%**) experienced symptoms of nausea and vomiting. These symptoms are commonly reported by pregnant women, particularly in the first trimester, and are often attributed to hormonal fluctuations, including increased levels of **estrogen** and **human chorionic gonadotropin (hCG)**. The presence of these hormones is known to influence the digestive system, leading to discomfort and contributing to morning sickness. This condition, although frequently occurring in the morning, can also manifest at various times throughout the day, including afternoon and evening periods.

According to the data presented in **Table 4.3**, it was observed that after the administration of ginger aromatherapy, **8 pregnant women (25%)** continued to experience nausea and vomiting, while the remaining **24 participants (75%)** reported no further symptoms. These findings indicate a significant reduction in the frequency of nausea and vomiting among first-trimester pregnant women following the use of ginger aromatherapy within the **Kepenuhan Health Center Work Area in 2023**. The results suggest that ginger aromatherapy may serve as

an effective intervention to alleviate nausea and vomiting symptoms commonly experienced during early pregnancy.

As presented in **Table 4.5**, prior to the administration of ginger aromatherapy, all **32 pregnant women (100%)** experienced nausea and vomiting. However, following the intervention, the number of women experiencing these symptoms decreased to **8 participants (25%)**, while the remaining **24 participants (75%)** reported no further symptoms. These findings demonstrate a notable reduction in the occurrence of nausea and vomiting among first-trimester pregnant women after receiving ginger aromatherapy. The results of this study indicate a significant difference in the mean frequency of nausea and vomiting before and after the intervention, highlighting the potential effectiveness of ginger aromatherapy as a complementary treatment for managing nausea and vomiting during early pregnancy.

Based on the findings, it can be concluded that ginger aromatherapy was effective in reducing the frequency of nausea and vomiting among first-trimester pregnant women in the **Keenuhan Health Center Work Area in 2023**, with a mean difference of **5.25**. Prior to the administration of the aromatherapy, all participants experienced nausea and vomiting, which is a common physiological response to hormonal changes during pregnancy. The reduction in symptoms following the intervention indicates that ginger aromatherapy may offer a beneficial treatment for alleviating these discomforting symptoms in early pregnancy.

CONCLUSION

1. The sample for this study consisted of pregnant women in their first trimester who received ginger aromatherapy. The aromatherapy was administered by placing three drops of ginger oil on a tissue and having the participants inhale the aroma for 5 minutes, maintaining a distance of approximately 3 cm from the nose. The inhalation technique involved taking deep breaths twice, once in the morning and once in the afternoon, over a period of 8 consecutive days. The treatment was provided directly to the participants, who had all experienced nausea and vomiting prior to the intervention. Initially, **32 pregnant women (100%)** reported symptoms of nausea and vomiting.
2. After the administration of ginger aromatherapy, the results showed a significant reduction in the frequency of nausea and vomiting among the participants. Specifically, **24 pregnant women (75%)** reported no further symptoms of nausea and vomiting, while **8 women (25%)** continued to experience these symptoms. This indicates that the majority of participants experienced relief from nausea and vomiting following the ginger aromatherapy intervention.
3. A significant difference was observed in the frequency of nausea and vomiting before and after the administration of ginger aromatherapy. The results revealed a **p-value of 0.000**, which is **$p \leq 0.05$** , indicating that ginger

aromatherapy is effective in reducing the frequency of nausea and vomiting among pregnant women in their first trimester. This finding suggests that ginger aromatherapy provides a beneficial intervention for managing these symptoms in the **Keperawatan Health Center Work Area in 2023**.

4. The effectiveness of ginger aromatherapy in reducing the frequency of nausea and vomiting in pregnant women during the first trimester in the **Keperawatan Health Center Work Area in 2023** was demonstrated by the statistical analysis. The results yielded a **p-value of -1.508**, which indicates **p > 0.05**, thus **rejecting the null hypothesis (Ho)** and **accepting the alternative hypothesis (Ha)**. This suggests that ginger aromatherapy significantly contributes to the reduction of nausea and vomiting in this population.

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