The Result of Generous Ginger Water Boiled Therapy to Pregnant Females on the Incidence of Emesis Gravidarum in PMB Midwife Mery Handayani A.Md.Keb., SKM, Gunung Labuhan Village, Blambangan Pagar District, North Lampung Regency

Atika Kurnia Sari[1*], Weda Ayu Ardini[2], Lisa Putri Yuningsih[3]
[1,3] STIKes An Nur Husada North Lampung
[2] Wahana Husada Midwifery Academy Bandar Jaya

*corresponding author: atikakurnias86@gmail.com

ABSTRACT

Pregnancy is a natural physiological process that most women experience. During pregnancy, hormonal changes occur in the mother, particularly an increase in estrogen and progesterone levels produced by Human Chorionic Gonadotropin (HCG), which can lead to the condition known as emesis gravidarum (morning sickness). Emesis gravidarum is one of the common problems in pregnancy if not followed up properly will become Hyperemesis gravidarum, Non-pharmacological actions to overcome emesis gravidarum are by encouraging pregnant Female to consume ginger water decoction therapy. The purpose of this study was to assess the effectiveness of ginger water decoction therapy in reducing emesis gravidarum or morning sickness in pregnant women at the PMB Mery Handayani A.Md.Keb., SKM Gunung Labuhan Village, Blambangan Pagar District, North Lampung Regency in 2023. This research employs a quantitative approach with a pre-experimental design in one group (one group pre-test post-test). The sampling technique used is systematic random sampling, resulting in a sample size of 15 pregnant women. Data collection is conducted through questionnaires and observation sheets. The statistical evidence suggests that, it can be seen from the initial assessment of the Pretest group, the t count was 2.0855 and the posttest was 2.9590 with a t table of 2.1448, so it can be concluded that in the pretest group, the t count <t table then Ho is accepted, namely there is no result of Generous ginger water decoction therapy on the incidence of emesis gravidarum and in the posttest group, the t count> t table then Ho is rejected and Ha is accepted, namely there is an result of ginger water decoction therapy on the incidence of emesis gravidarum in pregnant Female at PMB Mery Handayani A.Md.Keb., SKM Gunung Labuhan Village, Blambangan Pagar District, North Lampung Regency in 2023. There is an result of ginger water decoction therapy on the incidence of emesis gravidarum in pregnant Female at PMB Mery Handayani A.Md.Keb., SKM, Gunung Labuhan Village, Blambangan Pagar District, North Lampung Regency in 2023.

Keywords: Pregnancy, Emesis Gravidarum, Ginger Water Boil Therapy

INTRODUCTION

Emesis gravidarum, commonly known as morning sickness, occurs due to a sharp rise in HCG and estrogen levels during pregnancy. This condition can significantly affect the body, leaving the mother feeling weak, pale, and experiencing a noticeable decrease in urination. As a result, the body loses fluids, causing the blood to thicken. This thickening can slow down blood circulation, which in turn reduces the delivery of oxygen and nutrients to the tissues. Such a condition can lead to tissue damage, posing serious health risks to both the mother and the fetus. (Melanieka Dina, 2019)

Emesis gravidarum in pregnant women can be triggered by several factors, including fatigue, carrying a female fetus, a history of hyperemesis gravidarum in prior pregnancies, preconception use of contraceptive pills, premenstrual nausea, as well as stress, anxiety, and fear. If emesis gravidarum is not properly managed, it can lead to severe, persistent nausea and vomiting (intractable) during early pregnancy, causing dehydration, electrolyte imbalances, and nutrient deficiencies. Women who experience frequent vomiting, up to 10 times within 24 hours, face significant health risks that can negatively impact their daily activities.

The endocrine system plays a significant role in causing nausea and vomiting during pregnancy, particularly due to elevated levels of Human Chorionic Gonadotropin (HCG) and estrogen. The exact physiological reason behind these hormone increases is not fully understood, but it may be linked to the central nervous system or delayed gastric emptying. Most women adapt to these changes; however, severe symptoms of nausea and vomiting can persist for up to 4 months (Melinda et al., 2022). Nausea and vomiting affect approximately 80% of pregnant women, significantly impacting their quality of life (Retni et al., 2020). Nausea and vomiting during pregnancy have a considerable impact not only on the pregnant woman's daily life but also on her family. It affects her ability to carry out normal activities, disrupts social functioning, and can lead to increased stress. Additionally, these symptoms can cause fatigue, nutritional deficiencies, dehydration, weakness, weight loss, and electrolyte imbalances. (Retni et al., 2020)

Persistent nausea and vomiting during pregnancy can lead to dehydration and even weight loss in pregnant women. If not properly and promptly addressed, these conditions can have

serious consequences for both the mother and the fetus, potentially leading to life-threatening complications for both (Retni et al., 2020). Nausea and vomiting during pregnancy can be managed through both non-pharmacological and pharmacological approaches. Health professionals often recommend non-pharmacological methods such as consuming ginger, either as ginger tea, practicing relaxation techniques, and using aromatherapy. (Ramadhani & Ayudia, 2019)

Nausea during early pregnancy can be alleviated using complementary therapies, including easily accessible herbal or traditional remedies such as peppermint leaves, lemon, grapefruit, and ginger. (Ramadhani & Ayudia, 2019).One of the pharmacological benefits of ginger is its function as an antiemetic (anti-vomiting agent). Ginger helps expel gas from the stomach, which can relieve bloating. Additionally, it acts as a potent aromatic stimulant and helps control vomiting by increasing intestinal peristaltic movements (Budhwaar, 2016). Ginger contains essential nutrients such as potassium (3.4%), magnesium (3.0%), copper (3.0%), and vitamin B6 (pyridoxine) (2.5%) (Ningsih et al., 2020). One of ginger's pharmacological functions is its antiemetic (anti-vomiting) properties. It helps to expel gas from the stomach, alleviating bloating, and acts as a strong aromatic stimulant. Ginger can also control vomiting by enhancing intestinal peristaltic movements. Research has identified approximately six compounds in ginger with effective antiemetic activity. Additionally, ginger contains essential nutrients: potassium (3.4%), magnesium (3.0%), and vitamin B6 (pyridoxine) (2.5%) (Ningsih et al., 2020).

According to the Lampung Province Health Profile, the incidence of hyperemesis gravidarum in pregnant women is quite high, ranging from 50-90%, while emesis gravidarum affects 10-15% of cases in the province. Nausea typically occurs in the morning but can happen at any time of the day or night. These symptoms usually start around 6 weeks after the first day of the last menstrual period and last for about 10 weeks. Nausea and vomiting affect 60-80% of first-time pregnancies (primigravidas) and 40-60% of subsequent pregnancies (multigravidas) (Lampung Provincial Health Office, 2022).

According to data from the Independent Practice of Midwife Mery Handayani, in 2023, 87 out of 197 pregnant women experienced emesis gravidarum. (Independent Practice of Midwife Mery Handayani, Amd.Keb, SKM). Ginger acts as a carminative for the digestive

system, meaning it helps expel gas from the stomach, relieving flatulence. It is also a powerful aromatic stimulant that controls vomiting by increasing intestinal peristaltic movements. Additionally, ginger promotes secretory processes and functions as a diaphoretic, stimulating sweating (Nova Ari Pangesti, Sarifatun Naila, 2022).

Based on the issues outlined, the author conducted a study titled "The Result of Generous Ginger Water Boiled Therapy to Pregnant Female on the Incidence of Emesis Gravidarum in the independent practice of midwife Mery Handayani, Amd.Keb, SKM, Gunung Labuhan Village, Blambangan Pagar District, North Lampung Regency in 2023."

METHOD

This study utilizes a quantitative research approach with a pre-experimental method, using a one-group pre-test and post-test design to assess the effect of ginger decoction on the severity of emesis gravidarum. Initially, the intensity of emesis gravidarum will be measured in the group before the intervention (pre-test). Following the administration of the ginger decoction, the intensity will be measured again (post-test) (Notoatmodjo, 2012).

The research design used is a "None-equivalent Control Group Design," where control and experimental groups are selected randomly (Sugiyono, 2019:79). The study population consists of all pregnant women experiencing emesis gravidarum at PMB Mery Handayani, Amd.Keb, SKM in Gunung Labuhan Village, Blambangan Pagar District, North Lampung Regency, totaling 87 individuals. A sample of 30 pregnant women will be selected using random sampling techniques. Data will be collected through questionnaires and analyzed using both univariate and bivariate methods, including data normality tests, homogeneity tests, and hypothesis testing.

RESULTS

Univariate Analysis

Univariate analysis was employed to examine the distribution of nausea and vomiting frequencies before and after the administration of ginger water therapy. The results are presented in the table below:

Table 1. Here's a table illustrating the frequency distribution of nausea in both the experimental and control groups given ginger water therapy

No	Frequency of Nausea and Vomiting (PUQE Score 24)	Group (n = 30)			
		Experiment		Control	
		F	%	F	%
1	**Pretest**				
	Light (1-6)	2	13%	2	13%
	Medium (7 -12)	12	80%	13	87%
	Weight (13 – 15)	1	7%	0	0%
2	**Posttest**				
	Light (1-6)	4	27%	6	40%
	Medium (7 -12)	10	67%	9	60%
	Weight (13 – 15)	1	6%	0	0%

Based on Table 1, it is evident that a majority of the 30 respondents:

a. Before Treatment:

1) In the Experimental Group, nausea and vomiting were common experiences among the participants in the moderate range (80%).

2) In the Control Group, most respondents also had nausea and vomiting in the moderate range (87%).

b. After Treatment:

1) In the Experimental Group, the frequency of nausea and vomiting in the moderate range decreased to 67%.

2) In the Control Group, the frequency of nausea and vomiting in the moderate range decreased slightly to 60%.

This indicates that while both groups initially had high frequencies of moderate nausea and vomiting, the experimental group experienced a more notable reduction after receiving ginger water therapy compared to the control group.

Bivariate Analysis

Using an independent t-test, this analysis aims to determine if ginger water decoction therapy has a significant effect on the nausea and vomiting frequency. The Shapiro-Wilk test confirmed the normality of the data.

Initial Test Results (Pretest)

A questionnaire was administered to pregnant women to gather information about their nausea and vomiting symptoms before they began ginger water decoction therapy. The collected data was subsequently subjected to normality and homogeneity tests:

Table 2 Summary of Pretest Results Group

N	Experiment	Control
1	14	11
2	11	9
3	7	7
4	8	8
5	9	9
6	11	9
7	11	10
8	6	6
9	10	10
10	6	6
11	8	8
12	7	7
13	8	8
14	7	7
15	9	9
Amount	15	15
Average	8.80	8.27

Pretest Normality Test

From the calculation of the Normality Test with Shapiro Wilk, the following is obtained:

Table 3 Summary of Pretest Normality Test Results Student

Group	Amount Student	T Count	T Table	Conclusion
Experiment	15	0.9226	0.881	Normal
Control	15	0.9508	0.881	Normal

The Shapiro-Wilk test results indicate that both the experimental and control groups have t-count values exceeding the t-table value (0.9226 and 0.9508 vs. 0.881). This leads to the

acceptance of the null hypothesis and the rejection of the alternative hypothesis, suggesting that both groups are normally distributed. For detailed calculations, please refer to the appendix.

Pretest Homogeneity Test

The second analysis requirement after the normality test is data homogeneity. The data homogeneity test uses the two-variant equality test. The results of the normality calculation obtained a variant of the experimental group of 8.7857 and a control group of 8.2666.

The hypothesis to be proven is:

Ho: there is no difference in the variance of the experimental class with

control class variant (homogeneous)

Ha: there is a difference between the experimental class variance and the control class variance control class (not homogeneous)

The statistical hypothesis is:

H0:σ^2experiment= σ^2control

H0:σ^2experiment≠ σ^2control

The results of the homogeneity calculation obtained Fcount = 0.7677 with Ftable = 2.0595 With 0.7677 < 2.0995 or Fcount < Ftable then Ho is accepted. The data indicates no significant difference in the variability between the experimental and control groups (homogeneity). For detailed calculations, please refer to the appendix.

Hypothesis Testing

The hypothesis will be tested from the initial test calculation test (pretest) which has been carried out, summarized in the following table:

Table 4 Pretest Booster Summary Frequency of Nausea and Vomiting in Experimental and Control Groups

Description	Experimental Group	Control Group
Average	8.80	8.27
Variance	5.0286	2.2095
Tcount	2.0855	
Table	2.1448	
Testing Criteria	tcount > ttable : H0 is rejected	

From the calculation of the hypothesis test with the criteria if t count < t table, Ho is accepted, otherwise if t count > t table then Ho is rejected. From the table above it is known that t count (2.0855) < t table (2.1448) so that Ho is rejected Ha is accepted which means that there is no result of Generous ginger water decoction therapy to pregnant Female on the incidence of emesis gravidarum.

Final Test Results (Posttest)

The final test (Posttest) was conducted on Sunday, July 21, 2024. The purpose of the posttest was to evaluate the effect of generous ginger water decoction therapy on the incidence of emesis gravidarum in pregnant women. The posttest involved administering ginger water decoction therapy. The results of the posttest are summarized in the following table:

Table 5 Posttest Results Summary Group

N	Experiment	Control
1	13	10
2	9	9
3	6	6
4	8	6
5	9	8
6	10	9
7	9	7
8	6	6
9	8	8
10	6	6
11	8	7
12	7	6
13	8	8
14	6	6
15	7	7
Amount	15	15
Average	8.00	7.27

Posttest Normality Test

A normality test was conducted using the Shapiro-Wilk method. The null hypothesis assumes that the data follows a normal distribution:

Ho: The sample is based on a normally distributed population.

Ha: The sample is not based on a normally distributed population.

Based on the results of the normality test using the Shapiro Wilk test, in the control group posttest, t count = 0.8569 was obtained and in the experimental group, t count = 0.8706 and t table = 0.881. The sample data is said to be normally distributed if t count < t table. Because t count < t table (0.8706 < 0.881) in the experimental class and t count < t table (0.8569 <

0.881) in the control class, it can be concluded that the control and experimental classes are normally distributed.

Table 6 Summary of Posttest Normality Test Results Student

Group	Amount Student	T Count	T Table	Conclusion
Experiment	15	0.8706	0.881	Normal
Control	15	0.8669	0.881	Normal

Post test homogeneity test

From the results of the homogeneity calculation, Fcount = 1.2276 with Ftable = 2.0595 is obtained. With 1.2276 < 2.0595 or Fcount < Ftable then Ho is accepted. The conclusion drawn is that there is no significant difference in the variance between the experimental group and the control group, indicating that the groups are homogeneous. The detailed calculations supporting this conclusion can be found in the appendix.

Hypothesis Testing

The hypothesis testing to evaluate the effect of ginger water decoction therapy was conducted using parametric statistics, specifically the t-test. The summary of the test results is provided in the following table:

Table 7. Posttest Reinforcement Summary
Frequency of Nausea and Vomiting in Experimental and Control Groups

Description	Experimental Group	Control Group
Average	8.80	8.27
Variance	5.0286	2.2095
Tcount	2.9590	
Table	2.1448	
Testing Criteria	tcount > ttable : H0 is rejected	

From the calculation of the hypothesis test with the criteria if ttable > tcount, Ho is accepted and vice versa if ttable < tcount then Ho is rejected. From the table above it is known that table (2.1448) < t count (2.9590) so that Ho is rejected and Ha is accepted which means that there is an result of Generous Ginger Water Boiled Therapy to Pregnant Female on the Incidence of Emesis Gravidarum. Complete calculations can be seen in the attachment.

DISCUSSION

The study demonstrates that consuming boiled ginger water therapy has a significant effect on reducing the incidence of emesis gravidarum. Pregnant women are recommended to use boiled ginger water therapy to alleviate nausea and vomiting. Among the 30 respondents in the study, it was observed that nearly all participants had a moderate frequency of nausea and vomiting before treatment. Specifically, in the Experimental group, 12 out of 15 participants (80%) experienced moderate symptoms, while in the Control group, 13 out of 15 participants (87%) were in the moderate range. After the treatment, the frequency of nausea and vomiting in the Experimental group decreased, with 10 out of 15 participants (67%) remaining in the moderate range. Conversely, the control group experienced a reduction in nausea and vomiting, with 60% of participants remaining in the moderate range.

The results of the study show that ginger water decoction therapy can significantly improve nausea and vomiting symptoms in pregnant women. In the initial assessment of the pretest group, the t value was 2.0855, and in the posttest, it was 2.9590, with a t table value of 2.1448. This means that in the pretest group, the t value was less than the t table value, leading to the acceptance of the null hypothesis (Ho), which suggests that ginger water therapy had no effect on emesis gravidarum in pregnant women. However, in the posttest group, the t value was greater than the t table value, leading to the rejection of the null hypothesis (Ho) and acceptance of the alternative hypothesis (Ha). Therefore, it can be concluded that ginger water decoction therapy does have an effect on reducing emesis gravidarum in pregnant women.

Supporting research shows that the average level of emesis gravidarum before the intervention was 11.71, while after the intervention, it decreased to 5.12. The paired sample t-test analysis revealed a p-value of 0.000 ($p < 0.05$), which indicates that the null hypothesis (Ho) is rejected and the alternative hypothesis (Ha) is accepted. This suggests that generous boiled ginger water is effective in reducing emesis gravidarum. It is recommended that health workers provide information to pregnant women about the safe method and dosage of consuming boiled ginger water to help reduce nausea and emesis gravidarum (Devy Lestari, 2022). In this study, ginger was found to reduce the frequency of emesis gravidarum due to its content of gingerols, which are the primary active compounds in ginger. Gingerols have antiemetic properties that work by blocking serotonin, a chemical responsible for transmitting

signals related to nausea. When serotonin activity is inhibited, the digestive tract muscles relax and become less active, leading to a reduction in nausea (Marlina & Astina, 2016).

The mechanism of ginger is known to positively affect the stomach by enhancing gastric function, increasing pulse rate, and promoting peristalsis, as well as having antiserotonin effects. Ginger acts directly on the digestive tract, which helps avoid the side effects on the central nervous system that are commonly associated with many antiemetic medications (Ramadhani & Ayudia, 2019). Spicy substances, including those in ginger, stimulate sensory fibers to release compounds that activate cholinergic and histaminic neurons. This results in the secretion of acetylcholine (AcH) and histamine, which cause direct muscle contractions and activate nausea receptors. The purpose of this mechanism is to desensitize the nausea receptors after they have been stimulated by the spicy substances, making them less responsive to further stimulation. Consequently, ginger can inhibit the effects of anticholinergic and antihistamine agents. Additionally, ginger rhizomes contain various nutrients beneficial to the body, such as energy, carbohydrates, fiber, protein, sodium, iron, potassium, and vitamin C (Sari, 2021).

CONCLUSION

The effectiveness of generous ginger water decoction therapy on emesis gravidarum can be observed from the study results. In the pretest group, the t value was 2.0855, and in the posttest, it was 2.9590, with a t table value of 2.1448. This indicates that in the pretest group, the t value was less than the t table value, leading to the acceptance of the null hypothesis (Ho), which means there was no significant effect of ginger water therapy on emesis gravidarum. However, in the posttest group, the t value exceeded the t table value, resulting in the rejection of the null hypothesis (Ho) and acceptance of the alternative hypothesis (Ha). This suggests that ginger water decoction therapy does have a significant impact on reducing emesis gravidarum in pregnant women. Future research is encouraged to explore further the benefits of ginger in obstetric care.

ACKNOWLEDGE

Thank you to all the individuals and organizations who have participated in and supported this research. I also extend my gratitude to my colleagues for their valuable suggestions and input, which will be beneficial for future research endeavors.

REFERENCES

Devy Lestari. (2022). Effectiveness of Giving Boiled Ginger Water Against Emesis Gravidarum in First Trimester Pregnant Women. Al-Insyirah Midwifery: Journal of Midwifery Sciences, 11(1), 43–51. https://doi.org/10.35328/kebidanan.v11i1.2130

Marlina, H., & Astina, NP (2016). Benefits of Ginger Candy and Mint Candy in Treating Hyperemesis Gravidarum in Pregnant Women. Ojs.Stikesbhamada.Ac.Id/Ojs/Index.Php/Jitk/Article/Download/.../181, 27–30.

Melanieka DIna. (2019). The Effect Of Drinking Ginger Juice In Reducing Emesis Gravidarum In Pregnant Women At Alak Health Center. Chmk Midwifery Scientific Journal Volume 2, Number 2 April 2019 Effect of Ginger Juice Drinking in Reducing Emesis Gravidarum in Pregnant Women at Alak Community Health Center, 2(April), 39–44.

Ningsih, DA, Fahriani, M., Azhari, M., & Oktarina, M. (2020). Effectiveness Of Ginger Drinking On The Frequency Of Emesis Gravidarum I Trimester. 7(1), 1–8.

Nova Ari Pangesti, Sarifatun Naila, ER (2022). Effectiveness Of Ginger To Overcome Emesis Gravidarum In Pregnant Women: Literature Review Eko. Nursing Science Journal (NSJ), 3(1), 57–65. https://doi.org/10.53510/nsj.v3i1.107

Ramadhani, IP, & Ayudia, F. (2019). The Effect of Giving Ginger Drink (Zingiber Officinale Var. Rubrum) on Reducing Emesis Gravidarum in the First Trimester. Jik- Journal of Health Sciences, 3(2), 97. https://doi.org/10.33757/jik.v3i2.231

Retni, A., Handayani, F., & Mohamad, ISW (2020). Literature Review: Administration Of Lavender Essential Oil Aromatherapy Against Emesis Gravidarum In Pregnancy Introduction Pregnancy is an event. Journal of Borneo Holistic Health, 3(2).

Sari, D. (2021). Nutrient Content, Phytochemicals, and Pharmacological Activity in Ginger (Zingiber officinale Rosc.): Review. Tropical Bioscience: Journal of Biological Science, 1(2), 11–18. https://doi.org/10.32678/tropicalbiosci.v1i2.5246