INDOGENIUS

ISSN 2828-1365

Volume 5, Issue 1 : 110-116

The Effect of Ginger Candy Administration on First Trimester Pregnant Women with Emesis Gravidarum in the Working Area of the Kedung Banteng Community Health Center, Tegal Regency, 2025

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Article Info

Keywords :
Gravidary Vomiting, Ginger Candy, Pregnancy, PUQE-24

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ABSTRACT

Background & Objective: Emesis gravidarum is experienced by 50–80% of pregnant women in the first trimester and can develop into hyperemesis gravidarum if not treated properly. This condition carries the risk of dehydration, electrolyte imbalance, and fetal growth restriction. Ginger (Zingiber officinale) contains gingerol and shogaol, which have been proven to have antiemetic effects and are widely used as complementary therapy. To determine the effect of ginger candy on the degree of emesis gravidarum in pregnant women in their first trimester in the working area of the Kedung Banteng Community Health Center in Tegal Regency. **Method:** A pre-experimental design with a *one-group pretest–posttest*. The sample consisted of 20 pregnant women in their first trimester who experienced nausea and vomiting. The instrument used was the PUQE-24. Data were analyzed using the Shapiro-Wilk test and *paired t-test*. **Result:** Before the intervention, the average PUQE score was 9.20; after the intervention, it decreased to 7.00. The *paired t-test* results showed p=0.012, which means that there was a significant effect of ginger candy on the reduction of emesis gravidarum. **Conclusion:** Ginger candy is effective in reducing the severity of emesis gravidarum in first trimester pregnant women.

DOI: https://doi.org/10.56359/igj.v5i1.914

Introduction

Emesis gravidarum is a condition of nausea and vomiting that is often experienced by pregnant women in the first trimester, with a global prevalence of 50–

80%. Approximately 10% of cases are at risk of developing into hyperemesis gravidarum if not treated properly (Rofi'ah, 2019). This condition can cause serious complications such as malnutrition, dehydration, electrolyte imbalance, weight loss, miscarriage, and fetal growth restriction. Globally, the prevalence of emesis gravidarum is recorded at 12.5%, with variations ranging from 0.3–10% in different countries. In Indonesia, approximately 10% of pregnant women experience this condition (Kemenkes RI, 2024). Data from Tegal Regency shows an increase in the number of hyperemesis cases from 2021 to 2023. Meanwhile, the Kedung Banteng Community Health Center in 2024 recorded 134 cases of emesis gravidarum in pregnant women in their first trimester, or 20% of the total number of pregnant women in their first trimester.

The management of emesis gravidarum can be done through pharmacological and non-pharmacological approaches (Aulya Y, 2023). However, concerns about the side effects of drugs have led many pregnant women to choose complementary therapies. Ginger is one of the herbal ingredients that has been proven effective as an antiemetic. The gingerol, shogaol, and essential oil content in ginger can inhibit serotonin receptors in the gastrointestinal tract and central nervous system, thereby reducing the sensation of nausea and vomiting. Ginger is also easy to apply in various forms, including ginger candy, which is more practical and well-accepted by pregnant women (Kundarti, 2017).

A number of studies reinforce the evidence of ginger's effectiveness. Previous studies reported a significant decrease in the frequency of emesis after consuming ginger candy (Marisa, 2025). Another study showed that ginger candy was more effective than sugar candy with a p-value of 0.000 (Sopiatun R, 2024). The consistency of these results confirms that ginger candy is a safe and beneficial non-pharmacological intervention.

Objective

Based on the high incidence of emesis gravidarum and the need for safe interventions for pregnant women, this study was conducted to analyze the effect of ginger candy on emesis gravidarum in first trimester pregnant women in the working area of the Kedung Banteng Community Health Center in Tegal Regency.

Method

This study used a pre-experimental design with a one-group pretest–posttest approach, which allowed researchers to measure changes in the level of emesis gravidarum before and after intervention without a comparison group (Dr. Nova Nevila Rodhi STMTC, 2022). The study was conducted in Tonggara and Margamulya villages, the working area of the Kedung Banteng Community Health Center, Tegal Regency, on July 5–12, 2025. The study population included 20 pregnant women in their first trimester who experienced emesis gravidarum, and all of them were sampled using total sampling technique, because the population size was relatively small and met the research criteria. The main instrument used was the PUQE-24, which assessed the severity of nausea and vomiting based on three components: duration of nausea, number of vomiting episodes, and dry heaving within 24 hours. The PUQE-24 score was categorized into mild nausea and vomiting (4–6), moderate (7–12), and severe (>13). The research intervention was the administration of ginger candy three times a day, one piece each time the respondent felt nauseous, given

consistently for seven consecutive days according to the SOP. To ensure the accuracy of the interpretation of the results, the data were analyzed in two stages: the Shapiro–Wilk normality test to determine the distribution of the data, followed by a paired t-test to test the difference in the level of emesis gravidarum before and after the intervention (Diaz HR, 2019). All analyses were performed using standard statistical software so that the results obtained were valid and scientifically accountable.

Results

Respondent Demographic Data

The demographic data measured includes: age, education, occupation, and age at pregnancy. The frequency can be seen in Table 1 below.

TABLE 1. Frequency distribution of respondent characteristics

Characteristics	Categories	n	%
Age (years)	< 25	5	25,0
	25–35	10	50,0
	> 35	5	25,0
Education	Elementary school	3	15,0
	Junior high school	10	50,0
	High school	7	35,0
Occupation	Housewife	14	70,0
	Entrepreneur	4	20,0
	Farmer	2	10,0
Age at Pregnancy	4–8 weeks	8	40,0
	9–12 weeks	12	60,0

Based on the analysis of respondent characteristics, 20 participants involved in this study showed that the majority were in the 25–35 age group, namely 10 respondents (50%). The respondents' education level was also dominated by junior high school graduates with the same number, namely 10 respondents (50%). In terms of occupation, most respondents were housewives, totaling 14 people (70%). Meanwhile, the distribution of pregnancy age showed that the majority of respondents were in the 9–12 week pregnancy age group, totaling 12 respondents (60%).

Data distribution of Emesis Gravidarum Before and After Intervention

TABLE 2. Distribution of emesis gravidarum pre-post test

Variable	n	Mean	SD	Min	Max
Gravidary Vomiting (Pre-test)	20	9,20	3,037	4	14
Gravidary Vomiting (Post-test)	20	7,00	2,991	3	12

Based on the table above, it shows that the average emesis gravidarum before giving ginger candy to respondents was 9.20 with a standard deviation of 3.307, a minimum value of 4 and a maximum value of 14. Meanwhile, the average emesis gravidarum after giving the treatment to respondents was 7.00 with a standard deviation of 2.991, a minimum value of 3 and a maximum value of 12.

Bivariate Analysis Test Results

Before conducting a bivariate analysis to test the difference in the level of emesis gravidarum before and after the intervention, a data normality test was first conducted to ensure that both data groups were normally distributed. This normality test is important to determine the appropriate type of statistical test, because the use of parametric tests such as the paired t-test requires a normal data distribution. The results of the Shapiro–Wilk normality test are shown in Table 3 below.

TABLE 3. Results of the Shapiro–Wilk Normality Test

Variable	n	*p*-value	Description
Pre-test Nausea and Vomiting of Pregnancy	20	0,131	Normally distributed data
Post-test Nausea and Vomiting of Pregnancy	20	0,652	Normally distributed data

Criteria: data is normal if p > 0.05.

The results of data analysis using the Shapiro-Wilk test on the mean emesis gravidarum in respondents before intervention obtained a p-value of 0.131 (p≥0.05) and after intervention obtained a p-value of 0.652 (p>0.05). Since both are normal, the dependent T-test is used. The dependent T-test (paired T-test) is used to test the difference between two observations.

TABLE 4. Bivariate Test Results (Paired t-test)

Variable	n	Mean	Average Difference	SD	*p*-value	Description
Pre-test	20	9,20	2,20	3,037		
Post-test	20	7,00		2,991	0,012	There is a significant difference

Interpretation: p = 0.012 (< 0.05) indicates that ginger candy significantly reduces emesis.

Based on the Shapiro–Wilk normality test results, the emesis gravidarum data before and after the intervention had a p value > 0.05, indicating that both were normally distributed. Because the data met the normality assumption, bivariate analysis was performed using a parametric paired t-test. This test was chosen because the study compared two mean values from the same group of respondents at two different measurement times (pre-test and post-test). The paired t-test results showed a p-value of 0.012, so it can be concluded that there was a statistically significant difference between the emesis gravidarum scores before and after the administration of ginger candy. Thus, the intervention was proven to have a significant effect on reducing the level of emesis gravidarum.

Discussion

The results showed that the average PUQE score before intervention was 9.20, indicating that most respondents were in the moderate nausea and vomiting category. This finding is consistent with the physiological characteristics of the first trimester of pregnancy, particularly in the 4–12 week gestational age range when hCG hormone levels peak. Increased levels of hCG and progesterone play a role in decreasing gastrointestinal motility through relaxation of the smooth muscles of the gastrointestinal tract, thereby slowing gastric emptying and increasing stimulation of the vomiting center in the medulla (Alqudah M, 2022). In addition to hormonal factors, psychological aspects also influence the severity of symptoms. Anxiety, stress, and ambivalence towards pregnancy can worsen nausea and vomiting symptoms. This is

relevant to the condition of most respondents who are housewives and potentially face psychosocial demands and pressures during pregnancy.

After seven days of ginger candy administration, the average PUQE score decreased to 7.00, indicating significant clinical improvement. Ginger contains active compounds such as gingerol and shogaol, which act as serotonin (5-HT3) receptor antagonists in the gastrointestinal tract and central nervous system, thereby suppressing the urge to vomit. Gingerol is also known to increase intestinal peristalsis and accelerate gastric emptying, thereby reducing nausea caused by food stasis. Previous studies have confirmed that ginger is safe for consumption by pregnant women and effective in reducing nausea and vomiting (Purba, 2023). This mechanism is also consistent with other studies stating that gingerol functions to optimize gastrointestinal transport and relax the muscles of the gastrointestinal tract (Yunis S, 2021).

The effectiveness of the intervention in this study is consistent with previous findings. Ginger candy significantly reduced the frequency of emesis. Administration of ginger candy for seven days resulted in significant changes in nausea and vomiting symptoms (Nurdiana, 2019). Physiologically, ginger works by inhibiting serotonin receptors and activating antiperistaltic pathways that help stabilize motility (Pungus MCh, 2020). The advantages of ginger candy are its more acceptable taste, ease of consumption, and more controlled dosage compared to decoctions or liquid extracts.

Variations in the effectiveness of ginger in various studies are mainly influenced by differences in preparation, gingerol and shogaol concentrations, frequency of consumption, and respondent characteristics. Previous studies have reported that ginger candy is more acceptable than ginger tea (Ridho, 2025). Consuming ginger candy twice a day for four days has already shown significant effects (Mulyani E, 2023). Although there are variations between studies, the overall evidence shows a consistent pattern that ginger is a safe, effective, and viable antiemetic agent that can be included in complementary management (Ridho, 2025).

Research Limitations

This study has several limitations, namely the absence of a control group, which means there is still a possibility of placebo bias. In addition, the duration of the intervention was relatively short, only seven days, so long-term evaluation could not be carried out.

Conclusion

The average PUQE score before intervention was 9.20 (moderate category), then decreased to 7.00 after administering ginger candy for seven days. The results of the analysis showed that there was a statistically significant effect between the administration of ginger candy and the reduction in the degree of emesis gravidarum ($p = 0.012$). These findings indicate that ginger candy is an effective complementary therapy for pregnant women in their first trimester who experience nausea and vomiting.

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