

## Analysis of the effectiveness of herbal drink consumption on emesis gravidarum in pregnant women in the senapelan, Pekanbaru city

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### Abstract

Emesis gravidarum is a common condition during the first trimester. However, in some instances, this condition can escalate to emesis gravidarum, elevating the risk of pregnancy complications. Pregnant women have long recognized the use of herbal drinks containing ginger and honey as an alternative approach to mitigate the symptoms of nausea and vomiting. The objective of this research is to evaluate the efficiency of herbal drink consumption in mitigating emesis gravidarum symptoms, with a specific focus on pregnant women living in the Senapelan Subdistrict of Pekanbaru City. The research involved 14 respondents who were observed periodically, employing a Group Pre-Post Test by Quasi-Experimental design. Statistical analysis revealed a positive impact of herbal drink consumption. Before the intervention, 57.1% of respondents experienced moderate Emesis, 35.7% experienced severe Emesis, and 7.1% experienced mild Emesis. Following the consumption of herbal beverages, these percentages shifted to 71.4% experiencing mild Emesis and 28.6% experiencing moderate Emesis. The significant efficacy of herbal drink consumption is confirmed in alleviating emesis gravidarum symptoms among pregnant women in the Senapelan Subdistrict of Pekanbaru City by the bivariate analysis results with a p-value of 0.000. Consequently, it is recommended that healthcare professionals provide non-pharmacological education to pregnant women regarding the benefits of consuming herbal drinks to mitigate nausea and vomiting during pregnancy.

**Keywords:** Herbal Drink, Ginger, Honey, Pregnant Women, Emesis Gravidarum

### Introduction

Emesis gravidarum (EG) is a commonly encountered early pregnancy condition characterized by severe nausea and vomiting, typically occurring during the first trimester. While it often improves by the second or third trimester, persistent EG is rare (Pudiatuti, 2012). EG can adversely affect maternal and fetal health, including a reduced appetite, leading to electrolyte imbalances such as potassium, calcium, and sodium, ultimately affecting maternal metabolism. The fetus may also suffer from nutritional deficiencies and inadequate fluid intake, potentially resulting in low birth weight (LBW) and developmental disruptions (Rose & Neil, 2016).

The global prevalence of Emesis Gravidarum is approximately 15% among pregnant women, as reported by the World Health Organization in 2015. However, the incidence rates of EG vary significantly worldwide. For example, Indonesia has a relatively high incidence, with rates ranging from 1% to 3%. In Sweden, the rate is lower at 0.9%, while California reports a rate of 0.5%. In contrast, Turkey reports a higher prevalence of 1.9%, and the United States has an incidence range of 0.5% to 2%. Taking a closer look at Indonesia, among 2,203 observed pregnancies, 543 pregnant women experienced EG, indicating that approximately 10% of pregnant women in the country are affected by this condition. In a specific case, the Riau region reported a prevalence of 10% to 15% among 182,815 pregnant women in 2015, as documented by the Indonesian Ministry of Health (Depkes, 2015).

Furthermore, at the Senapelan Primary Health Center, there were 116 cases of Emesis Gravidarum in 2022, a number similar to the 112 cases reported in 2020. It is important to note that these cases encompass various levels of severity, including levels 1, 2, and 3 of Emesis. Overall, Emesis Gravidarum is notably more prevalent among women experiencing their first pregnancies. Midwives play a crucial role in providing care to EG patients, including gathering relevant client information, identifying client issues, developing care plans, implementing midwifery care, and evaluating client progress. They should also educate patients about pregnancy and childbirth as physiological processes, reassuring them that nausea and vomiting are expected in early pregnancy and tend to subside after the first four months. Midwives may recommend dietary modifications, such as consuming smaller, more frequent meals, avoiding oily or pungent foods, and serving hot or cold meals (Lisnawati, 2013).

According to Ayuputri (2017), non-pharmacological therapy with ginger-infused herbal drinks can reduce nausea and vomiting in EG patients. The research demonstrates that an herbal drink containing ginger and honey effectively alleviates these symptoms. The herbal drink is prepared by infusing ginger with hot water, sweetened with honey, and consumed in the morning. These herbal drinks are administered three times a week on Mondays, Wednesdays, and Saturdays, with follow-up interviews to assess the frequency of nausea and vomiting.

A preliminary survey at the Private Clinic in Senapelan, Pekanbaru City, revealed that out of 10 pregnant women, 6 experienced excessive nausea and vomiting and were unaware of the potential benefits of ginger-infused herbal drinks. Based on this research, the researcher was motivated to investigate the effectiveness of herbal drink consumption in managing Emesis Gravidarum in pregnant women in Senapelan, Pekanbaru City.

## Methods

This study utilizes quantitative methodology, specifically adopting a Quasi-Experimental design featuring a Group Pre-Post Test. It was conducted at the Private Clinic in Senapelan, Pekanbaru City, during June 2023. Initial preparations encompassed a preliminary survey conducted in February 2023 involving ten pregnant women, six of whom were grappling with severe nausea and vomiting. According to Ayuputri (2017), non-pharmacological therapy involving herbal drinks and a modest amount of honey can effectively alleviate nausea and vomiting in individuals suffering from emesis gravidarum. The herbal drink consists of 2 pieces of ginger root boiled in 1 litre of water for 10 minutes until it yields one cup of infusion. To sweeten it, add one tablespoon of honey, and it should be consumed while still warm, given three times a week.

Ginger, a versatile plant with a rich history of medicinal applications, holds a crucial place as a spice in culinary practices, beverages, and traditional healing methods. Ginger, scientifically known as *Zingiber Zingiber*, belongs to the Zingiberaceae family and has gained global recognition due to its wide-ranging versatility. Its composition includes essential oils (such as bisabolene, cineol, phellandrene, citral, borneol, citronella, geranial, linalool, limonene, Zingiber, zingiberene, camphene), oleoresins (gingerol, shogaol), phenolic compounds (gingerol, zingerone), proteolytic enzymes (Zingiber), vitamins B6 and C, as well as essential minerals like calcium, magnesium, phosphorus, and potassium. Additionally, it contains linoleic acid and gingerols, which are alcohol compounds found in oleoresins, making up around 1-3% of ginger's composition (Permenkes, 2016).

Alyamaniyah and Mahmudah (2014) propose that to alleviate emesis gravidarum in pregnant women, administering ginger-infused herbal drinks should involve a regimen of twice-daily consumption for four consecutive days, with a maximum daily intake of 250 ml. According to Nasution et al. (2016), the measurement scale for evaluating the administration of ginger-infused herbal drinks to pregnant women can be classified as follows: categorized as mild if maternal nausea and vomiting occur 1-3 times daily following the consumption of ginger-infused herbal drinks, classified as moderate if maternal nausea and vomiting happen 4-7 times daily after ginger-infused herbal drink consumption, designated as severe if maternal nausea and vomiting manifest 8-10 times daily following the intake of these herbal drinks.

## Results and Discussions

The researcher conducted research results through observations on 14 pregnant women to assess the effectiveness of herbal drink consumption in managing Emesis gravidarum at a Private Clinic in Senapelan, Pekanbaru City.

**Table. 1.** Frequency Distribution Before and After Herbal Drink Consumption

No	Emesis	Before		After	
		Frequency	%	Frequency	%
1.	Mild	1		10	71,4
2.	Moderate	8	7,1	4	28,6
3.	Severe	5	57,	0	0,0
			1		
			35,		
			7		
	<b>Total</b>	<b>14</b>	<b>100</b>	<b>14</b>	<b>100</b>

It is known that before the herbal drink was administered, eight individuals (57.1%) experienced moderate Emesis, five individuals (35.7%) experienced severe Emesis, and one individual (7.1%) experienced mild Emesis. After

administering an herbal drink, there was a decrease in emesis severity, with ten individuals (71.4%) experiencing mild Emesis and four individuals (28.6%) experiencing moderate Emesis.

**Table 2.** Data Normality Testing

Variable	p.value
Before	0,271
After	0,022

**Table 2** shows that before an herbal drink was administered, the p-value was 0.271. After administering an herbal drink, the p-value was 0.022, as determined using the Shapiro-Wilk test. The Shapiro-Wilk test was chosen because the sample size was less than 50 respondents. These results can be interpreted as the data distribution is non-normal, as one p-value is less than 0.05. Given that the data used is not normally distributed, the appropriate test is the non-parametric Wilcoxon test or the Signed Rank Test.

**Table 3.** The Effectiveness of Herbal Drink Consumption on Emesis Gravidarum in Pregnant Women

Method	Treatment	Deviation Standart (Min-Max)	P value
Consumption of Herbal Drink	Before	1,939 (3 – 9)	0,000
	After	1,188 (0 – 4)	
Deviation		3 (21,4%)	

**Table 3** presents data showing that before herbal drink consumption, the standard deviation was 1.939. This indicates that, on average, pregnant women experienced emesis gravidarum about two times a day, with a minimum occurrence of 3 and a maximum of 9. Following the consumption of ginger infusion, the standard deviation decreased to 1.188, signifying those pregnant women experienced Emesis gravidarum an average of 1.1 times, with a minimum of 0 and a maximum of 4. The difference between the occurrences before and after herbal drink consumption was 3. The effectiveness assessment, utilizing the Wilcoxon or Signed Rank Test, resulted in a p-value of 0.000, which is less than  $\alpha$  (alpha). This signifies a notable effectiveness in reducing Emesis gravidarum among pregnant women through the consumption of the drink. This is in line with Chandranita (2011), which states that Emesis gravidarum is a common complaint in early pregnancy due to hormonal changes, namely an increase in the hormones estrogen, progesterone, and the release of human chorionic gonadotropin in plasma. Non-pharmacological and pharmacological interventions can manage nausea and vomiting during pregnancy. Non-pharmacological measures often recommended by healthcare professionals include suggesting pregnant women consume ginger in ginger tea, relaxation techniques, and aromatherapy (Runiari, 2015).

Ginger (*Zingiber officinale*) has a long history as an antiemetic remedy. Its effects are believed to be related to increased peristaltic movement in the digestive tract due to its anti-cholinergic and anti-serotonin properties. Ginger directly affects the digestive tract and does not have any impact on the central nervous system. In traditional medicine, ginger is sometimes discouraged for use during pregnancy due to concerns that it might trigger menstruation or bleeding. In traditional medicine, ginger is often considered a contraindication for use by pregnant women because it is believed to induce menstruation or bleeding. However, no clinical evidence supports the theory that ginger acts as an abortifacient (Pratimin, 2016).

According to Rofi'ah (2017), ginger is a powerful aromatic stimulant that can regulate vomiting by enhancing intestinal peristalsis. Several research findings indicate potential advantages of ginger, including cancer prevention, relief from pregnancy-related nausea and vomiting, mitigation of nausea and vomiting in chemotherapy patients, and postoperative nausea and vomiting. Pregnant women can consume ginger in any form they prefer. By Alyamaniyah (2014), it is asserted that ginger comprises a minimum of 19 components that offer various benefits to the body. Among these components, gingerol is the most notable compound, known for its proven antiemetic (anti-vomiting) properties, primarily achieved through serotonin blockade, a chemical messenger. This compound triggers contractions in the stomach, so when it is obstructed, the muscles in the digestive tract relax, resulting in a significant reduction in nausea. Following the administration of ginger infusion, the occurrence of Emesis gravidarum decreased, attributable to the influence of ginger's constituents, particularly gingerols and shogaols, which effectively block serotonin—a chemical substance responsible for inducing nausea.

The findings of this research align with those from a study conducted by Aini *et al.* (2010) regarding the impact of ginger herbal drinks on nausea and vomiting in pregnant women suffering from Emesis gravidarum within the Wirobrajan Health Center's jurisdiction in Yogyakarta. The paired t-test analysis resulted in a p-value of 0.000 ( $<0.05$ ), indicating the influence of ginger infusion on pregnant women experiencing Emesis gravidarum in that area. Furthermore, a study by Hasanah *et al.* (2014) supports these findings, as it yielded a p-value of 0.000 ( $<\alpha=0.05$ ), signifying a notable difference in Emesis gravidarum frequency among pregnant women before and after receiving ginger infusion at the Tebalo Manyar Village Health Center in Gresik in 2014. These research outcomes are consistent with Rusman (2017), which proposes that ginger infusion effectively reduces nausea and vomiting in pregnant women during the first trimester. Prior to the intervention, most pregnant women experienced Emesis gravidarum up to 13 times daily. However, on average, after the ginger infusion intervention, the frequency of nausea and vomiting decreased by 3.18 times per day.

The researcher believes that providing ginger infusion can offer a beneficial solution for mitigating vomiting and can be utilized by pregnant women to alleviate morning sickness. Following the consumption of ginger infusion, there was a notable shift in the occurrence of nausea and vomiting among pregnant women, underscoring the considerable effectiveness of ginger infusion in alleviating these symptoms during the initial trimester. As indicated by the findings, women who incorporated ginger infusion into their regimen experienced a warming sensation in their stomachs, accompanied by a reduction in Emesis gravidarum following its consumption. Ginger contains essential oils, zingiberene, zingiberol, bisabolenes, curcumin, gingerol, and landrene, as well as vitamin A and bitter resin. Ginger is believed to provide comfort in the stomach to alleviate nausea and vomiting. Ginger also has a direct effect on the digestive tract and absorbs toxins and acids because the substances in ginger can block serotonin, a neurotransmitter in the central nervous system, and enterochromaffin cells. Thus, it inhibits the induction of HCG in the stomach. Finding ginger is easy because this plant is widely used as a spice, flavouring in various foods and drinks, and traditional medicine ingredients. Another advantage of consuming ginger infusion to manage Emesis gravidarum is that it is inexpensive and readily available, making it easily accessible in the market. Ginger infusion is safe from harmful ingredients because it can be made at home, so pregnant women do not need to worry about endangering their pregnancy and their fetus. Based on the research results obtained from 14 respondents, the average frequency of nausea and vomiting before drinking the herbal drink was six times. After consuming ginger and honey herbal drinks, the average frequency of nausea and vomiting among respondents was three times. The difference between before and after consumption was three times. The percentage of the effectiveness of consuming herbal drinks was 50%. Based on the results, women who consumed the herbal drink felt warmth in their stomachs, and Emesis gravidarum decreased afterwards.

## Conclusions

This research concluded that before the administration of ginger and honey herbal drink, it was found that eight individuals (57.1%) experienced moderate Emesis, five individuals (35.7%) experienced severe Emesis, and one individual (7.1%) experienced mild Emesis. After the administration of ginger infusion, it was found that ten individuals (71.4%) had mild Emesis, and four individuals (28.6%) had moderate Emesis. Herbal drink that contained ginger infusion and honey is effective with a p-value of  $0.000 < 0.05$  against Emesis Gravidarum at a Private Clinic in Senapelan, Pekanbaru City.

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