



THE EFFECTIVENESS OF GIVING A COMBINATION OF GINGER AND PAPAYA POWDER DRINK IN REDUCING THE FREQUENCY OF NAUSEA AND VOMITING IN PREGNANT WOMEN 12-16 WEEKS

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ABSTRACT

Nausea and vomiting that occurs in early pregnancy is a common occurrence, it is due to an increase in the hormones estrogen, progesterone and the release of the hormone HCG (human chorionic gonadotropin). Nausea and vomiting occur between 4 – 8 weeks and will continue for 14 -16 weeks. If this is not handled properly, it will harm the mother and fetus, because of a decrease in appetite resulting in a lack of electrolyte balance such as sodium, calcium, and potassium. The purpose of this study is to determine the effectiveness of JEDERASA powder drink in reducing nausea and vomiting in pregnant women at 12-16 weeks in the working area of UPTD Tanjung Baru Health Center, Ogan Komering Ulu Regency. This research employed a quantitative approach in the form of a pre-experimental study with a one-group pretest-posttest design. One group underwent pre- and post-treatment testing. The study focused on pregnant women experiencing emesis gravidarum symptoms. Only one group received treatment, and the results were then observed. Sampling was conducted using a purposive sampling technique based on previously identified population characteristics. Thirty-three respondents experienced nausea and vomiting. The study was conducted for 14 days, from September 27 to October 10, 2024. Data analysis used a paired sample t-test. The administration of JEDERASA powder drink showed the results of the frequency of nausea was known, the value of the "Paired Samples Test" showed a value of "Mean Paired Differences" of 3,303. This value shows the difference between the average Pre Test results and the average Post Test results, which is $9.45 - 6.15 = 3,303$. It is known that the value of Sig. (2-Tailed) is $0.000 < 0.05$. The results showed that there was an average difference between the results of the pretest and the posttest where there was an effect of giving JEDERASA powder drink in reducing the frequency of nausea in pregnant women at 12-16 weeks. Meanwhile, the results of the "Paired Samples Test" showed a "Mean Paired Differences" value of 3.818. This value shows the difference between the average pre-test results and the average post-test results, which is $7.03 - 3.21 = 3.818$. It is known that the value of Sig. (2-Tailed) is $0.000 < 0.05$. So it can be concluded that there is an average difference between the results of the pre test and the post test. Which means that there is an effect of giving a powdered drink. JEDERASA powdered drinks are effective in reducing the frequency of nausea in pregnant women at the Tanjung Baru Health Center UPTD by 76%, reducing vomiting by 64% and JEDERASA powdered drinks can be accepted by more than 70% of pregnant women.

Keywords: emesis gravidarum; ginger and papaya combination powdered drinks; pregnant women

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INTRODUCTION

Eighty percent of pregnant women experience nausea and vomiting in early pregnancy, and this occurs in the morning. The effects of nausea and vomiting during pregnancy can impact their quality of life. While most women who experience nausea and vomiting consider it a normal occurrence in early pregnancy, others find it uncomfortable and disruptive to daily activities (Yanuarningsih, 2020). Emesis gravidarum is a condition of nausea and vomiting that occurs during pregnancy between weeks 4 and 8 and can persist until weeks 12 and 16. Therefore, to prevent it from worsening, proper adaptation to this condition is necessary. When this occurs, oxygen and nutrient supply to the tissues is also reduced. This lack of oxygen and nutrient supply to the tissues can cause tissue damage, which can compromise the mother's health and the development of the fetus she is carrying. (Fransiska, 2022).

The World Health Organization (WHO) states that the incidence of emesis gravidarum is at least 15% of all pregnant women. Emesis gravidarum occurs worldwide with varying incidence rates, namely 1-3% of all pregnancies in Indonesia, 0.9% in Sweden, 0.5% in California, 1.9% in Turkey, and in the United States the prevalence of emesis gravidarum is 0.5%-2%. Nausea and vomiting occur in 60-80% of primigravidas and 40-60% of multigravidas. The incidence of emesis gravidarum in Indonesia, obtained from 2,203 pregnancies that can be fully observed, is 543 pregnant women affected by emesis gravidarum (Kustiani, 2023).

Indonesian Demographic Health Survey (SDKI) Data The incidence of nausea and vomiting in Indonesia during 2018 (5.31%) of 21,581 pregnant women and in 2019 experienced an increase, namely (5.42%) of 25,234 pregnant women who checked themselves at health service facilities (Ministry of Health R1, 2019). The cause of nausea and vomiting that occurs in pregnant women is due to changes in the hormone estrogen and the release of human chorionic gonadotropin (HCG) in the serum. Another factor that causes nausea and vomiting in pregnant women is age, younger pregnant women are usually susceptible to nausea and vomiting because they are not psychologically and mentally ready to accept pregnancy. Nausea and vomiting in pregnancy have a significant impact on the body where the mother becomes very weak, her face is pale and the frequency of urination decreases drastically so that body fluids are reduced and the blood becomes thick (hemoconcentration). This condition can slow blood circulation so that the supply of oxygen and food to the tissue is also reduced, this can cause tissue damage that endangers the health of the mother and fetus. Not only that, the dangers of nausea and vomiting during pregnancy also include pregnant women lacking body electrolytes, feeling weak and without energy, weight loss, dehydration, health problems in the fetus, namely lack of nutrition needed for the growth and development of the baby. Morbidity and mortality in pregnant women can be prevented if pregnant women and their families are able to recognize the danger signs of pregnancy and try to seek health care. (artamevia, 2023).

Poor diet before and during the first week of pregnancy, lack of sleep, and stress can exacerbate nausea and vomiting. Based on the data above, the number of pregnant women experiencing nausea and vomiting continues to increase every year. Therefore, expectant mothers are expected to manage their health by avoiding excessive movement and providing adequate rest, consuming herbal drinks containing essential oils, as they can have a refreshing effect, eating fruits containing potassium, vitamin B6, vitamin C, and folic acid, and increasing their knowledge about nausea and vomiting so that mothers can determine how to deal with emesis gravidarum in early pregnancy. (Hurin'in, 2017).

Nausea experienced during pregnancy can be overcome by complementary therapy, because the ingredients used are easy to get, such as ginger. One of the functions of ginger is antiemetic (anti-vomiting). 1 Ginger is an aromatic stimulant containing essential oils zingiberene (zingirona), zingiberol, bisabilene, curcumin, gingerol, flandrena, vitamin A can block serotonin which is a neurotransmitter synthesized in serotonergic neurons found in the central nervous system and enterochromaffin cells in the digestive tract so that it can provide a feeling of comfort in the stomach that can overcome nausea and vomiting. (aryanta, 2019).

Treatment for nausea and vomiting should be conservative, accompanied by dietary changes, emotional support, and alternative therapies such as herbal remedies. Ginger herbal teas can be an alternative for treating nausea and vomiting in pregnant women. In India, ginger is also used as an alternative tea to reduce nausea and vomiting in pregnant women. Ginger is known as a plant with a multitude of benefits, including being used as a drink, a cooking spice, a candy, and as an ingredient in traditional medicines. Ginger is commonly used as a herbal remedy because it has no acute toxicity at doses commonly consumed in food or medicine. Ginger's essential oils are the main ingredient in ginger, which can be refreshing and block nausea and vomiting reflexes. Gingerol, found in ginger, can improve blood circulation. This results in tension relief, a fresh head, and

nausea and vomiting. The oleoresins produce a spicy flavor that can warm the body, leading to sweating (Handajani, 2019).

Papaya is a fruit rich in benefits because it contains calories, carbohydrates, protein, fat, fiber, antioxidants, vitamin A, vitamin B1, vitamin B2, vitamin B3, vitamin B5, vitamin B6, folic acid, vitamin C, vitamin E and vitamin K. The contents of papaya include water, carbohydrates, low calories, and vitamins, especially vitamins A and C, as well as quite a lot of potassium minerals. (Prihatin, 2021). Vitamin B6 in papaya has been proven effective in relieving nausea in pregnant women in the first period of pregnancy and can make the journey of the first trimester more comfortable. Vitamin B6 is a type of vitamin B complex commonly known as pyridoxine which is useful for ensuring the health of pregnant women, for fetal development and for body metabolism.

Penelitian yang dilakukan Wardani et al, dengan judul Efektivitas Ekstrak Jahe Untuk Mengurangi Emesis Gravidarum Pada Ibu Hamil Trimester 1 Di Klinik Hj. Dewi Sasmera Medan, dari 30 responden, yang mengalami emesis gravidarum dengan gejala berat sebanyak 12 responden (40%), gejala sedang 13 responden (43%) dan gejala ringan 5 responden (17%). Setelah diberikan seduhan ekstrak jahe, dari 30 responden tersebut didapatkan hasil yang mengalami emesis dengan gejala ringan sebanyak 22 responden (74%), gejala sedang sebanyak 8 responden (26%) dan tidak didapatkan responden dengan keluhan gejala berat.(wardani, 2020). Another study conducted by Marlina, D., Rosyeni, Y., & Sani, A. I. "The effect of giving ginger infusion on the level of emesis gravidarum in pregnant women in the first trimester at pmb Atmirah Purwantini, Bogor City". From the study before being given ginger infusion to 15 respondents, most respondents (53%) experienced moderate emesis gravidarum. The level of emesis after being given ginger infusion, most of the 66.7% (10 respondents) experienced mild levels of emesis. The average level of emesis gravidarum before being given ginger infusion in 15 respondents was 10.80 and after being given ginger infusion decreased by an average of 3.73. The conclusion is that there is an effect of giving ginger infusion on the level of emesis gravidarum in pregnant women in the first trimester. (Marlina, 2023).

Jedersa is an abbreviation of (Ginger and Papaya Emesis Gravidarum Desi Ratna Sari), is a powdered drink made from red ginger (*Zingiber Officinale* Var.rubrum) ripe papaya (*Carica papaya* L). Jedersa powdered drink uses red ginger powder and ripe papaya fruit of the California papaya type, this jedersa powdered drink is a follow-up result of a professional midwifery project. The expected result of this formulation is a traditional medicine in the form of a powdered drink with an acceptable taste and no side effects so that it can be an alternative in reducing the frequency of nausea and vomiting in pregnant women. A preliminary survey conducted by researchers at the Tanjung Baru Community Health Center UPTD found 35 pregnant women experiencing nausea and vomiting and had conducted interviews with 35 pregnant women in addition to observing the surrounding situation and conditions, and from the results of the preliminary study conducted on 12 pregnant women experiencing nausea and vomiting, the average nausea and vomiting every day ranged from 4-8 times a day. After conducting the initial survey, researchers determined that the location at the Tanjung Baru Community Health Center UPTD had special characteristics and problems worthy of research. Because pregnant women 12-16 weeks on average experience nausea and vomiting and have never known information about the benefits of ginger and papaya which can reduce the frequency of nausea and vomiting in pregnant women 12-16 weeks.

Based on information obtained from a preliminary survey that pregnant women who experience nausea and vomiting is still relatively high, therefore the reason researchers are interested in making Jedersa herbal drink made from red ginger and papaya fruit to be able to reduce the frequency of emesis gravidarum in pregnant women 12-16 weeks because Jedersa contains essential oils, potassium, vitamin B6, Vitamin C, and folic acid which can make the body feel fresh and block the nausea and vomiting reflex. In addition, papaya fruit is easy to find in the research area. Many people around the work area of the Tanjung Baru Health Center UPTD cultivate ginger and papaya fruit around their yards. In addition to being easy to get, the price is more economical and safe for

consumption by pregnant women, so researchers decided to choose ginger and papaya fruit as research intervention materials.

Based on the problems outlined above, the focus of this research is emesis gravidarum. This condition can lead to dehydration and loss of appetite, which can lead to weight loss during the 12-16th week of pregnancy, preventing further weight gain or hyperemesis gravidarum, which can lead to decreased oxygen levels. Therefore, the Jenderasa powdered drink is expected to relieve vomiting and nausea in pregnant women. Jenderasa is a powdered drink made from ginger and papaya. Because it contains essential oils, it can provide a refreshing feeling. Furthermore, pregnant women experience a reduction in nausea and vomiting after drinking it. Furthermore, because it contains vitamin B6 and folic acid, the drink suppresses nausea symptoms in pregnant women. Based on this, the researcher compiled a paper entitled The Effect of Giving a Combination of Ginger and Papaya Powder Drink in Reducing the Frequency of Nausea and Vomiting in Pregnant Women 12-16 Weeks in the Working Area of the Tanjung Baru Community Health Center UPTD, Ogan Komering Ulu Regency.

METHOD

This research method is a quantitative research using pre-experimental with a one group pretest and posttest approach. With experimental research. This research was conducted at the UPTD Tanjung Baru Health Center, Ogan Komering Ulu Regency. The research time was on September 27, 2024 - October 10, 2024, the data collection technique was with a questionnaire sheet, the data was analyzed using the SPSS application, namely Data analysis using paired sample t-test. with a population of 35 people. The sample was 33 people with the sampling technique of sampling in this study was carried out by non-probability sampling using the purposive sampling method.

RESULT

Table 1. 1
Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
Nausea Pretest	.023	1	30	.881
Vomiting Pretest	.127	1	30	.724
Nausea Posttest	2.841	1	30	.102
Vomiting Posttest	.031	1	30	.562

Based on table 1 from the results of the homogeneity test before and after treatment, the pretest nausea data group obtained a significant result of 0.881 while the posttest nausea with a score of 0.102 while the pretest vomiting results with a score of 0.724 after being given treatment got a posttest vomiting result of 0.562. Based on the results of the homogeneity test in the table above before and after being given treatment for nausea and vomiting, it can be concluded that both groups are homogeneous so that it will not affect the results of the study.

Table 2.
Frequency Distribution of Respondent Characteristics

		f	%
Age	< 20th	10	30.3
	20-35th	23	69.7
Work	Work	8	24.2
	Not Working	25	75.8
Paritas	Primigravida	27	81.8
	Multigravida	6	18.2
Education	Elementary School	2	6.1
	Middle School	5	15.2
	High School	15	45.5
	Diploma 3	5	15.2
	Bachelor's Degree	6	18.2

Based on table 2, it can be seen that respondents aged 20-35 years have the highest percentage value, namely 69.7% with 23 respondents, while respondents aged under 20 years have a

percentage of 30.3% with 10 respondents. Based on the table of respondents' work, mothers who do not work have the highest percentage, namely 75.8% with 25 respondents, while working mothers have a low percentage, namely 24.2% with 8 respondents. Based on the parity table, respondents in primigravida mothers have a higher percentage than multigravida mothers, namely 81.8% with 27 respondents, while multigravida mothers have a percentage of 18.8% with 6 respondents. Based on the results of the table, maternal education has the highest percentage of high school, namely 45.5% with 15 respondents, while elementary school mothers have the lowest percentage, namely 6.1% with 2 respondents.

Table 3.
Tests of Normality Nausea

	Shapiro-Wilk		
	Statistic	Df	Sig.
Nausea pretest	.947	33	.111
Nausea posttest	.944	33	.088

Based on the results of the "Tests of Normality" in the Shapiro-Wilk nausea test section, the significance value is known. for the pretest value of 0.111 and the posttest value of 0.088, the results of these values exceed the significance value of 5% or 0.05, as the basis for decision making in the normality test, it can be concluded that the data on the pretest and posttest nausea values are normally distributed. Thus, the requirements or assumptions of normality in the use of the paired sample t test have been met. Based on the results of paired samples statistics, it can be seen that in the mean column, the posttest value of 6.15 is lower than the pretest value of 9.45. Descriptively, it can be seen that there is a decrease between before respondents consumed the Jenderasa drink and after consuming the Jenderasa drink.

The results of the paired sample correlation show that the correlation coefficient value is 0.854, with a significance (Sig.) of 0.000. By looking at the test results, it shows that the correlation is $0.854 > 0.000$. This indicates the effect of giving Jenderasa powdered drinks in reducing the frequency of nausea in pregnant women 12-16 weeks. The results of the "Paired Samples Test" show a "Mean Paired Differences" value of 3.303. This value shows the difference between the average Pre-Test results and the average Post-Test results, namely $9.45 - 6.15 = 3.303$. It is known that the Sig. (2-Tailed) value is $0.000 < 0.05$, so H_0 is rejected and H_a is accepted. So it can be concluded that there is an average difference between the pre-test and post-test results that there is an effect of giving Jenderasa powdered drinks in reducing the frequency of emesis gravidarum in pregnant women 12-16 weeks.

Table 4.
Tests of Normality Vomiting

	Shapiro-Wilk		
	Statistic	Df	Sig.
Vomiting Pretest	.948	33	.115
Vomiting Posttest	.941	33	.072

The results obtained from the "Tests of Normality" above in the Shapiro-Wilk test section show a significant value. For the pretest value of 0.115 and the posttest value of 0.072, the results exceed the significance value of 5% or 0.05. It can be concluded that the pretest and posttest data are normally distributed. Thus, the requirements or assumptions of normality in the use of the paired sample t-test have been met.

Based on the results of paired samples statistics, it can be seen that in the mean column, the posttest value of 3.21 is lower than the pretest value of 7.03. Descriptively, it can be seen that there is a decrease between before respondents consumed the Jenderasa powder drink and after consuming the Jenderasa powder drink. The results of the paired sample correlation showed a correlation coefficient of 0.234 with a significance level of 0.191. The test results showed a correlation of $0.234 > 0.191$. This indicates the effect of providing Jenderasa powdered drink in reducing the frequency of vomiting in pregnant women aged 12-16 weeks.

The results of the “Paired Samples Test” show a “Mean Paired Differences” value of 3.818. This value shows the difference between the average pre-test results and the average post-test results, namely $7.03 - 3.21 = 3.818$. It is known that the Sig. (2-Tailed) value is $0.000 < 0.05$, so H_0 is rejected and H_a is accepted. So it can be concluded that there is an average difference between the pre-test and post-test results that there is an effect of giving Jenderasa powdered drinks in reducing the frequency of vomiting in pregnant women 12-16 weeks.

Table 5.
The effectiveness of Jenderasa drinks in reducing nausea and vomiting

Nausea N Gain Test	0,76	High
Nausea N-Gain (%)	76,40%	Effective
Vomiting N-Gain Test	0,64	Moderate
Vomiting N_ Gain (%)	64,32%	Moderately Effective

Based on table 5, the effectiveness test for nausea using N-Gain was 76.40% in the range of >76 with an effective category and the effectiveness test for vomiting was 64.32% in the range of 55-75 with a fairly effective category.

DISCUSSION

Based on the results of the univariate analysis that has been explained previously, it is known that the level of nausea before being given the Jenderasa powder drink in this study was classified as moderate, namely with a frequency of nausea (6-10 times), while the level of vomiting before being given was classified as high, namely with a frequency (6-10 times). This is due to an increase in estrogen and progesterone levels which causes nausea in pregnant women. Based on the results before treatment was given to respondents, 21 (64%) pregnant women experienced nausea 6-10 times and 12 (36%) respondents experienced nausea 11-15 times. The results of this study align with previous research that stated that emesis gravidarum is a common complaint in early pregnancy. This is due to changes in the hormones estrogen, progesterone, and HCG secretion in women. Nausea and vomiting are among the earliest, most common, and most stressful symptoms associated with pregnancy. Nausea and vomiting in pregnancy, commonly called morning sickness, is experienced by approximately 70-80% of pregnant women and is a common phenomenon between 5 and 16 weeks of gestation (Fransiska, 2022). Nausea experienced during pregnancy can be managed with complementary therapies, because the ingredients used are easily available, such as ginger. One of ginger's functions is as an antiemetic (anti-vomiting). Ginger is an aromatic stimulant containing essential oils zingiberene (zingirona), zingiberol, bisabilene, curcumin, gingerol, flandrena, vitamin A can block serotonin which is a neurotransmitter synthesized in serotonergic neurons found in the central nervous system and enterochromaffin cells in the digestive tract so that it can provide a comfortable feeling in the stomach that can overcome nausea and vomiting.

Based on the results before treatment was given to pregnant women who experienced vomiting 4-5 times, there were 26 respondents (79%), and those who experienced vomiting 6-10 times were 7 respondents (21%). The results of this study align with previous research that found that emesis gravidarum is caused by drastically increased levels of HCG (human chorionic gonadotrophin) and estrogen. The stomach digests food more slowly than before pregnancy, which can trigger vomiting. Ginger contains essential oils that are refreshing and inhibit the gag reflex, while gingerol can improve blood circulation and nerve function. Consuming red ginger as a traditional remedy is also believed to reduce nausea and vomiting in pregnant women due to its antiemetic effect.

Researchers suspect that the occurrence of nausea and vomiting in early pregnancy is greatly influenced by Jenderasa powdered drinks because the ingredients in Jenderasa powdered drinks are made from red ginger and papaya which have been proven to reduce nausea and vomiting in pregnant women 12-16 weeks

Based on the results, it is known that after being given the treatment of drinking Jenderasa powder, it can be seen that the number of respondents who experienced nausea 1-5 times was 18 respondents

(55%), those who experienced nausea 6-10 times were 12 respondents (36%) and those who experienced nausea 11-15 times were 3 respondents (9%).

The results of this study are in line with previous research that states that nausea experienced during pregnancy can be overcome by using complementary therapy with easily available ingredients such as ginger, peppermint leaves and lemon. One of the pharmacological functions of ginger is antiemetic (anti-vomiting). Ginger is an aromatic stimulant containing essential oils zingiberene (zingirona), zingiberol, bisabilene, curcumin, gingerol, flandrene, vitamin A and bitter resin can block serotonin which is a neurotransmitter synthesized in serotonergic neurons in the central nervous system and enterochromaffin cells in the digestive tract so it can provide a feeling of comfort in the stomach that can overcome nausea and vomiting.

In this case, after giving the *jederasa* drink, it was effective in reducing the frequency of nausea, because before being given the *jederasa* drink, the respondents who scored the most, namely with a percentage of 61%, had nausea 6-10 times, whereas after being given the *jederasa* powder drink, the respondents who experienced nausea were 1-5 times at most with a percentage of (55%), thus there was a decrease in the frequency of nausea from before and after being given the *jederasa* powder drink. After being given treatment to pregnant women with nausea and vomiting 12-16 weeks in table 4.4 the results show the number of respondents who experienced vomiting the most 1-3 times with the number of respondents 20 (61%) and who experienced vomiting 4-5 times with 12 respondents (36%), while those who experienced vomiting 6-10 times with 1 respondent (3%). Based on the data before and after being given *jederasa* powder drink, pregnant women who experienced vomiting were effective in reducing the frequency of vomiting, namely before being given treatment the most respondents with a percentage of 79% experienced nausea 6-10 times with a severe category, while after being given treatment the respondents experienced vomiting the most with a frequency of 1-3 times with a mild category with a percentage of 61%, here there is a decrease in the frequency of vomiting after being given *jederasa* powder drink.

The results of this study are in line with previous researchers who said that reducing the frequency of vomiting can be done with complementary therapy including using herbal or traditional plants such as ginger drinks. The advantage of ginger is the content of essential oils that have a refreshing effect and block the gag reflex, while gingerol can smooth blood and nerves to work well. The fragrant aroma of ginger is produced by essential oils, while oleoresin causes a spicy taste that warms the body, giving ginger drinks can effectively overcome morning sickness. 5 Ginger is an aromatic stimulant containing essential oils zingiberene (zingirona), zingiberol, bisabilene, curcumin, gingerol, flandrena, vitamin A can block serotonin which is a neurotransmitter synthesized in serotonergic neurons found in the central nervous system and enterochromaffin cells in the digestive tract so that it can provide a comfortable feeling in the stomach that can overcome nausea and vomiting. ginger can control vomiting.

CONCLUSION

Jederasa drink was effective in reducing nausea by 76% and vomiting by 64% in pregnant women 12-16 weeks pregnant at the Tanjung Baru Community Health Center (UPTD). *Jederasa* powdered drink was well-tolerated by over 70% of pregnant women.

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