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Infused Water (Strawberry And Honey) To Mothers With Emesis Gravidarum

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ABSTRACT

A common problem in pregnant women is the occurrence of vomiting nausea in pregnant women called emesis gravidarum. This occurs as a result of the complex interaction of endocrine, digestive tract, and endocrine system. The vestibular and olfactory senses which, if not addressed, will cause inconveniences and pathological things such as excessive vomiting nausea that interfere with daily activities (hyperemesis gravidarum) so additional therapy is needed to reduce vomiting nausea. The purpose of this study to Identifying the frequency of vomiting nausea in pregnant women before and after administration of infused water strawberry and honey
This study demonstrates that administering infused water with strawberry and honey significantly reduces vomiting nausea in pregnant women during the first trimester, as evidenced by a p-value of 0.000. However, it lacks a control group and long-term follow-up to assess the sustained impact and efficacy of the intervention. The conclusion of this study is that there is an effect of administering infused water (strawberry and honey) to mothers with emesis gravidarum.

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INTRODUCTION

Pregnancy is a physiological process experienced by women, but pathological conditions and complications may accompany pregnancy. Every process in pregnancy requires physiological and psychological adaptation to the effects of changes in pregnancy hormones, which are largely changes in the mother's body due to increased production of the hormones esterogen, progesterone and human chorionic gonadotropin (HCG) in serum, the physiological effects of this hormone increase are unclear. It may be the central nervous system or gastric emptying. Estrogen itself indirectly plays a role in gastric motility during pregnancy which can cause discomfort.1

In early pregnancy, mothers will experience discomfort such as nausea and vomiting that often occur in the morning and are experienced by 50-80% of pregnant mothers.2 In Indonesia, the incidence of nausea or vomiting due to pregnancy is around 18.6% of 29,056 pregnant mothers. Meanwhile, in Central Java, there are 18.7% of cases of 3,270 pregnant women.3 Complaints of vomiting nausea can lead to decreased appetite, resulting in changes in electrolyte balance with potassium, calcium and sodium that cause changes in

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body metabolism and result in pregnant mothers developing anemia.4 The effect if not resolved will increase to a hyperemesis gravidarum which causes Mother to vomit continuously every time she drinks or eats. As a result, the mother's body gets weaker, paler, and the frequency of urination decreases dramatically, resulting in reduced body fluids (dehydration), blood becoming thick (hemoconcentration) and weight loss.5 Mother-bearing fetuses are also affected: abortus, infant, premature, low birth weight.6

To meet daily fluid needs, the mother can add slices of fruit to the water consumed with fruits that have an acidic taste such as strawberry and cool them to taste fresh.7 Strawberry fruits contain many vitamins needed by mothers during pregnancy, including folic acid, vitamin A, vitamin B1, vitamin B6, and vitamin C whose nutritional content is not less than that of lemons.8

Besides, Severe vomiting nausea and persistent medical treatment are required while mild nausea at the beginning of pregnancy can be reduced with medications to reduce complaints, one of which is pyridoxin (vitamin B6). In its journal, the World Health Organization recommends pyridoxin as a common physiological treatment for nausea and vomiting.9 There are several cases of vomiting nausea that can be treated using medicine, but in some cases pregnant women cannot cope with it until they have severe vomiting nausea. Some prefer to use herbs instead of chemicals or complementary therapy.10 One such complementary therapy can use honey. Honey is one of the known sources of sweeteners and has been used as a treatment. Honey contains some organic compounds, flavonoids, glycosides and polyphenols, as well as anti-bacterial compounds in the digestive tract, vitamin B6 (pyridoxin) as receptor antagonists and other benefits that can help maintain stamina and health during pregnancy and help with nutritional intake. High for fetal growth in the womb.11

Pharmacological methods like antiemetics and corticosteroids effectively reduce hyperemesis gravidarum but often come with side effects such as drowsiness, potential fetal risks, and high costs. Non-pharmacological options like dietary changes, ginger, and acupressure are safer but vary in effectiveness. Strawberry honey-infused water offers a natural alternative with potential benefits from strawberries' vitamins and honey's anti-inflammatory properties, providing a safer and more holistic approach without the drawbacks of traditional treatments. Therefore, researchers are interested in conducting research on administering infused water (strawberry and honey) to pregnant women with emesis gravidarum.

METHOD

This study employed a pre-experimental design with a one-group pretest-posttest approach, involving 32 first-trimester pregnant women experiencing nausea and vomiting at the Toroh 1 Grobogan Health Center. The participants were given a 4-day intervention of strawberry and honey-infused water and assessed using a visual analog scale. Data analysis included normality testing with the Shapiro-Wilk test and the Wilcoxon signed-rank test, revealing a significant effect of the intervention on reducing emesis gravidarum (p-value 0.000).

Research conducted in March 2023 indicated that traditional treatments for nausea and vomiting in pregnant women at the health center often involve pharmacological methods with potential side effects. The study found that non-pharmacological interventions, such as the strawberry and honey-infused water, offer a promising alternative. The study was ethically approved by the Research Ethics Committee of the Poltekkes Kemenkes Semarang, number 0241/EA/KEPK/2023.

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RESULTS

Characteristics of Respondent

Table 1 Characteristics of Respondent

Characteristics	Respondent	F	%
Age	Risk	2	6,3
	Not Risk	30	93,8
Parity	Primipara	14	43,8
	Multipara	18	56,3
Education	Junior High School	7	21,9
	High School	23	71,9
	College	2	6,3

Based on table 1 it can be seen that the most age characteristics of respondents were found in the non-risk age category of 30 respondents (93,8%). In the parity category there were 18 respondents (56,3%) and the most education status category was 23 respondents (71,9%).

Frequency of Gravidarum Before and After Infused Water Strawberry Honey

Table 2 Frequency of Gravidarum Before and After Infused Water Strawberry Honey

Effect *emesis gravidarum*	N	*Min-max*	*Mean±SD*	*Median*
Before	32	4-6	4,81±0,738	5,00
After	32	2-4	2,78±0,706	3,00

Based on table 2 pretest results before being given infused water minimum values of (4), maximum (6), mean values (4,81), Std. Deviation (0,738), and median (5). Meanwhile, the posttest result after being given infused Water Strawberry Honey minimum value of (2), maximum (4), mean value (2,78), Std. Deviation (0,706) and median (3).

Normality Test

Table 3 Data Normality Test Results

Variable		Significance value	Data type
Emesis Gravidarum	*Pre-test*	0,000	Not Normal
	Post-test	0,000	Not Normal

Based on table 3 the results of the normality test on the pretest and posttest data are obtained from the results of abnormal distributed data due to a significant value of <0.05. Thus the analysis used is to use a non-parametric analysis test, namely the Wilcoxon Signed Ranks Test.

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Wilcoxon Signed Ranks Test

Table 4 Bivariate Analysis Results

Variabel	Ranks	N	*Mean Rank*	*Sum of Ranks*	P
Emesis Gravidarum (Pre-test Post-test)	*Negative Ranks*	32	16,50	528,00	0,00
	Positive ranks	0	0,00	0,00	
	Ties	0			
	Total	32			

Based on Wilcoxon Signed Ranks Test table 4 results from negative rates have a value of 32 with a mean rating of 16.50 and a sum of ranks of 528.00 indicating negative ratings results that 32 respondents experienced a decrease in the frequency of emesis gravidarum after administering infused water (strawberry and honey). Positive ratings show a value of 0 (zero) indicating no increase in emesis gravidarum after administering honey strawberry infused water intervention. Based on the Test Statistics of the Wilcoxon Signed Ranks Test table it is known that the p-value of 0.000–0.05 is accepted and that H0 is rejected, and H0 is rejected. There is a significant effect between before and after administration of infused water (strawberry and honey) on mother with emesis gravidarum.

DISCUSSION

Characteristics of Respondents

The results of the study mostly showed that 20–35 years of age were 30 people (93.8%). In this study in line with the research conducted by Suryaningrum (2019) showed that 47 out of 65 respondents who experienced emesis gravidarum were mothers aged 20-35.12 In addition, in a study conducted by Sriadnyani (2022) said that 82% of the total respondents aged 20-35 experienced emesis gravidarum.13

There was no meaningful relationship between maternal age and emesis gravidarum. A study conducted by Suryaningrum (2019) concluded that pregnant women's age relationship test with the incidence of nausea and vomiting in trimester 1 pregnant women showed that the low-risk age group received the highest rate of emesis gravidarum compared to the high-risk age group. This is because even when 20 to 35 years of age is appropriate and can receive pregnancy due to physical maturity and other organs, it can still be affected by psychological factors. The relationship of psychological factors with nausea and vomiting during pregnancy is unclear but it is highly likely that women who refuse to conceive, fear of losing their jobs, breakdown of relationships with husbands and so on are thought to be factors of nausea and vomiting during the early pregnancy of mothers.12

The results of this study are also possible because most of the pregnant women's visits at the Toroh 1 Grobogan Health Center are 20-35 years old. The incidence of hyperemesis gravidarum (HG), characterized by severe nausea and vomiting during pregnancy, is not significantly influenced by maternal age due to several key biological and pathophysiological mechanisms. Primarily, HG is associated with hormonal changes, especially elevated levels of human chorionic gonadotropin (hCG) and estrogen, which disrupt the gastrointestinal system and cause nausea and vomiting. These hormonal fluctuations occur across all age groups, leading to HG regardless of the mother's age. Additionally, genetic and individual variability in hormone metabolism and physiological

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responses contribute to the development of HG, independent of age. Psychological stress and emotional factors, which can exacerbate HG symptoms, are also not age-dependent, as women of all ages can experience stressors that impact their gastrointestinal health. Furthermore, nutritional and metabolic factors affecting pregnancy are related to individual health status rather than age. Thus, the primary factors driving HG are consistent across different ages, explaining why maternal age does not significantly affect the incidence of this condition.

The next characteristic is that the trimester 1 pregnant woman who experienced emesis gravidarum at most was 18 respondents (56.3%). This contrasts with a study conducted by Fauziah (2019) in which the results of the study showed that the majority of respondents experiencing gravidarum emission were primipara compared to multiparas.14

Research results suggest that there is no relation of maternal parity to the occurrence of emesis gravidarum. This is in line with Rudiyanti's research (2019) on parity relations with emesis gravidarum, which states that there is no relation between parity and emesis gravidarum.15

The third characteristic is the education level of pregnant women who experience emesis gravidarum. There was no meaningful link between education and emesis gravidarum. This study is in line with a study conducted by Musinah (2022) which showed no influence between educational level factors and expectant mothers who experienced emesis gravidarum.16

The biological/pathophysiological mechanism behind emesis gravidarum is primarily driven by hormonal changes, particularly high levels of hCG, which are not directly influenced by age, parity and education. Therefore, age, parity and education does not significantly affect the incidence of emesis gravidarum.

This suggests that not an educational level factor that indicates emesis gravidarum in pregnant women, whether high-educated or low-educated pregnant women may experience emesis gravidarum.

Frequency of Emesis Gravidarum Before and After Infused Water Strawberry Honey

The emesis of gravidarum before administering infused water strawberry honey had a minimum value of (4), maximum (6), mean value (4.81), Std. Deviation (0.738), and median (5). Meanwhile, after being given infused Water Strawberry Honey, the minimum value is (2), the maximum (4), the mean value (2.78), Std. Deviation (0.706) and median (3). This indicates a decrease in emesis gravidarum after intervention of infused water strawberry honey.

Emesis gravidarum occurs as a female adaptation to her pregnancy. Emesis gravidarum increases in weight to the hyperemesis gravidarum which causes the mother to vomit continuously every time she drinks or eats, resulting in a very weak body, pale face, and urate frequency to decrease and the blood becomes thick (hemoconcentration) which slows down the circulation.When the blood supply is reduced, the lack of food and oxygen will cause tissue damage that can harm the mother's health and the health of the child.7

In Widatiningsih (2018) literature, many pregnant women choose to eliminate nausea by consuming fruit, including fruit rich in vitamin C that is useful to neutralize nausea. However, too sour fruit is not recommended for pregnant mothers suffering from stomach acid.17 According to USDA (2020), strawberries are rich in vitamin C with a safe acidity level for the stomach because they contain malic acid [8]. Shahetal, (2020) said Vitamin C has an important role in the synthesis of Norepinephrine-neurotransmitters which are able to promote the metabolism of dopamine neurotransmitters in the brain that function to regulate mood for the better so that nausea will decrease.18

In a study conducted by Ikhsan (2021) said that honey is one of the foods that can act as antiemesis.19

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Results Infused Water (Strawberry and Honey) to Mothers with Emesis Gravidarum

In the study conducted using the Wilcoxon signed ranks test, the results of emesis gravidarum reduction in trimester 1 pregnant women before and after being administered infused water strawberry honey with a p-value (0.000), which is less than the significant value (<0.05). So it can be concluded that there is an effect on the decrease in emesis gravidarum in pregnant women with trimester 1 after administering infused water strawberry honey.

This is because the benefits of the nutrient content in the infused water strawberry honey can reduce the vomiting nausea. In Widatiningsih (2018) literature, many pregnant women choose to eliminate nausea by consuming fruit, including fruits rich in vitamin C that are useful to neutralize nausea. However, too sour fruit is not recommended for pregnant mothers suffering from stomach acid.17 According to Newerli-Guz (2023) strawberry is rich in vitamin C [20] where Shah (2020) said Vitamin C has an important role in the synthesis of Norepinephrine-neurottransmitters which can promote the metabolism of dopamine neurotransmitters in the brain that function to regulate mood for the better so that nausea will decrease.18

In addition, according to Battino (2020) polyphenols contained in strawberry and honey also have the potential to prevent chronic diseases related to oxidative stress and inflammation, where inflammation can affect the normal function of the digestive system and stimulate vomiting centers in the brain.21

In addition, according to USDA (2020) strawberry and honey also contain vitamin B6 although not in many cases this can be one of the factors that decrease emesis gravidarum, Because vitamin B6 plays a role as a coenzyme in the synthesis of amino acids that would later produce serotonin as a neurotransmitter in the regulation of nausea and vomiting.8

The implication of research is Introducing to the public the benefits of processed strawberry combined with honey that has the function of reducing nausea and vomiting in pregnant women, for mothers (Respondent) it is expected to increase the insight in reproductive women, especially pregnant women to overcome nausea and vomiting. Educational institutions are expected to be input material to increase the number of education institutions knowledge and insight on how to deal with gravidarum emesis or vomiting nausea in pregnant women, Healthcare Facilities can be input into the caregiving of obstetrics to pregnant women especially regarding non-conventional or non-pharmacological therapy, Furthermore, it is hoped that it can increase the knowledge and experience in administering infused water (strawberry and water) Honey) in mothers with gravidarum emesis. This research is a reference further researchers are able to conduct research better than previous studies using different methods and may be added a control group.

The research on the use of infused water with strawberry and honey for managing emesis gravidarum reveals significant implications both theoretically and practically. Theoretically, the study underscores the potential of natural remedies, particularly those rich in vitamins and antioxidants, in addressing nausea and vomiting during pregnancy. This supports the integration of non-pharmacological treatments into the broader scope of clinical practice. The findings suggest that vitamin C, found abundantly in strawberries, plays a crucial role in mood regulation and nausea reduction, aligning with existing literature that emphasizes the benefits of dietary interventions. Practically, the research highlights the value of incorporating such natural remedies into patient care plans. For healthcare providers, this means offering patients a safe, non-drug alternative to manage early pregnancy symptoms, which can be particularly beneficial for those concerned about the side effects of conventional medications. Furthermore, educational institutions and healthcare facilities can use these insights to enhance their understanding and application

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of non-pharmacological therapies, thus improving patient care and expanding treatment options for managing emesis gravidarum.

Despite its valuable findings, the research has notable weaknesses that need to be addressed in future studies. The study's lack of a control group limits the ability to definitively attribute observed changes in emesis gravidarum solely to the infused water intervention. To strengthen the evidence, future research should incorporate a randomized controlled trial (RCT) design, which would allow for more rigorous comparison between the intervention and a control group. Additionally, the relatively small sample size of 32 participants may not provide sufficient generalizability of the results. Future studies should aim to include a larger sample to enhance the reliability and validity of the findings. The research also did not account for other potential influencing factors such as psychological stress, dietary habits, and health conditions, which could impact the severity of emesis gravidarum. Addressing these variables in future research could offer a clearer picture of the intervention's effectiveness. Lastly, exploring a variety of natural remedies and comparing their efficacy could provide more comprehensive insights into effective non-pharmacological treatments for emesis gravidarum.

CONCLUSION

Based on research done on administering infused water (strawberry and honey) to mothers with emesis gravidarum at the Toroh 1 Grobogan Health Center, data were obtained and data analysis results then the researchers concluded as follows:

In characteristics (age, parity, education) of trimester 1 pregnant women who experience emesis gravidarum. Most showed non-risk ages, with 30 respondents (93,8%), 18 respondents parity status (56,3%), and 23 respondents majority education levels (71,9%)

The average frequency of vomiting nausea (emesis gravidarum) before administering infused water strawberry honey to trimester 1 pregnant women was (4,81). Meanwhile, the average frequency of vomiting nausea (emesis gravidarum) after administering infused water strawberry honey to pregnant women was 2,78%.

The results of statistically significant effects on infused water strawberry honey on emesis gravidarum in trimester 1 pregnant women, using the Wilcoxon signalled rates test, can be seen as differences between before and after the intervention of infused water (strawberry and honey) to emissaries. It is found that the emesis gravidarum is present in trimester 1 pregnant women with a yield (a p-value of 0,000). It can be inferred that there is an effect of administering infused water (strawberry and honey) to mothers with emesis gravidarum.

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