

The Effect of Infusing Mint Leaves in First Trimester Pregnant Women on The Frequency of Nausea and Vomiting

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ABSTRACT

Common problems that often occur in first-trimester pregnant women are nausea and vomiting. Even though it is common and not detrimental to pregnant women, if it is not handled correctly, it will result in weight loss. Maintaining pregnancy is essential so that the health of the mother and future baby is maintained until the birth process. Non-pharmacological methods are the safest for dealing with this, one of which is infusing mint leaves. This study aimed to determine the effect of giving an infusion of mint leaves to pregnant women in the first trimester on reducing the frequency of nausea and vomiting. This type of research is quantitative with a pre-experimental design in one group of subjects. The number of samples was 30 pregnant women in the first trimester using purposive sampling. Research location in Pujud, Rokan Hilir, Riau, Indonesia. Statistical data analysis used the Wilcoxon test. The results of the study showed that infusing mint leaves had a significant effect on reducing the frequency of nausea and vomiting in pregnant women in the first trimester. This proves that the therapeutic benefits of mint leaves can overcome nausea and vomiting. The contribution of this research is as evidence of the benefits of infusing mint leaves and as a recommendation as an alternative therapy to reduce nausea and vomiting.

Keywords: Pregnant Women, First-trimester of Pregnancy, Mint Leaves, Nausea, Vomiting, Non-pharmacological



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1. INTRODUCTION

Pregnancy is the meeting of sperm from a man and ovum from a woman (Owiny et al., 2024; Swanson & Liu, 2022). In pregnancy, physiological changes usually occur, one of which is changes in the gastrointestinal tract (Zakaria et al., 2022), where there is a decrease in the tone and motility of the gastrointestinal tract, which causes lengthening of gastric emptying time and intestinal transit (Spencer & Hu, 2020). With the influence of the hormone estrogen, stomach acid production increases, which can cause excessive salivation; the stomach area feels hot; nausea, vomiting, and headaches occur, especially in the morning, called morning sickness (A. Arshad & Aslam, 2021). The vomiting that arises is called emesis gravidarum (Rufaridah et al., 2019).

According to Sari & Wahyuningsih, (2021), the number of pregnancies in the world, 12.5% of pregnant women experience nausea and vomiting. According to Ngo et al. (2022) research, up to 70% of pregnant women experience nausea and vomiting. In general, pregnant women can adjust to this situation. Every pregnant woman will have different degrees of nausea (Gadsby et al., 2020); some don't feel anything, but some feel nauseous, and some feel very uneasy and want to vomit at any time.

Almost 50% of pregnant women experience nausea and vomiting early in pregnancy (Tanjung et al., 2020). In some cases, this nausea and vomiting can continue in the second and third trimesters (Schrager

et al., 2021). In Indonesia, as many as 50% -75% of pregnant women experience nausea and vomiting in the first trimester (Safira et al., 2022). As in Central Java, complaints of nausea and vomiting in pregnant women reach 40% -60% (Aprianti et al., 2022).

Morning sickness is one of the earliest, most common, and most stressful symptoms of nausea and vomiting associated with pregnancy (Anggraini et al., 2021; A. Arshad & Aslam, 2021). Nausea and vomiting are often ignored because they are considered normal at the beginning of pregnancy. Most pregnant women experience morning sickness, which is often known as morning sickness (Hu et al., 2022; Khorasani et al., 2020). Morning sickness does not only occur in the morning but can occur during the day and even at night.

Mint leaves contain many essential oils, namely menthol (Gupta et al., 2023; Rudoy et al., 2023). Menthol can relieve bloating, nausea, vomiting, and cramps and has carminative effects that work in the small intestine and gastrointestinal tract (Arora & Sharma, 2023; Rahayuningsih & Yanuarti, 2023; Singh et al., 2023). Due to the properties of mint leaves, regular infusion of mint leaves is expected to reduce the frequency of nausea and vomiting in pregnant women (Balarastaghi et al., 2022; Sarecka-Hujar & Szulc-Musiol, 2022).

Efforts to overcome the frequency of vomiting can include several measures, such as medicine. Apart from medicine for nausea in early pregnancy, you can use complementary therapies, including herbal or traditional plants that can be used and are easily available, such as ginger (Anita et al., 2020; Devi & Friska, 2018), peppermint leaves (Agustini et al., 2022; Jafarimanesh et al., 2020), lemons (Doloksaribu, 2023; Friska, 2023), etc. Based on a preliminary study by researchers in Pujud, Rokan Hilir Regency, Riau, the majority of pregnant women who experience nausea and vomiting use pharmacological therapy or just leave it alone. Therefore, research on non-pharmacological treatment in this area is a novelty. From this description, this study aimed to determine the effect of giving an infusion of mint leaves to pregnant women in the first trimester on reducing the frequency of nausea and vomiting. This research is expected to prove that mint leaves' therapeutic benefits as a non-pharmacological treatment for nausea and vomiting can be helpful.

2. METHOD

This research is quantitative with a pre-experimental design with one group of subjects (one pre-post test design). This research design aims to reveal cause-and-effect relationships by involving one group of subjects. The subject group had their nausea scale measured first before being given the intervention of steeping peppermint leaves, and then the nausea scale was measured again after the intervention. Wilcoxon statistical analysis was used to test this research hypothesis.

This research hypothesizes that infusing mint leaves significantly reduces the frequency of nausea and vomiting in pregnant women in the first trimester. Research location in Pujud, Rokan Hilir, Riau, Indonesia. The number of samples was 30 pregnant women in the first trimester using purposive sampling. Table 1 below is the operational definition of this research.

Table 1
Operational Definitions

Variables	Operational Definitions	Measuring Tools	Measuring Methods	Measuring Results	Scaling
Independent: Mint Leaf Infusion	Mint leaves are brewed for 4-5 minutes with water cooked for 5-10 minutes to 100 °C. Leave it for 2 minutes until the water is hot at 95 °C, as much as 250 ml, and add a little sugar.	1. Analytical Balances 2. Thermometer 3. Paper Bag Tea	1. Make sure the scale number is zero, place a sample of 3 grams of mint leaves; 2. Heat the water until it boils, measure the water temperature using a thermometer to 95 °C; 3. Put a sample of mint leaves that have been weighed into	1. Sample weight in units (grams) 2. Water temperature in units (°C) 3. Makes it easier to brew	Interval

Dependent: Frequency of nausea and vomiting Total	Frequency of nausea and vomiting experienced by pregnant women in the first trimester by infusing mint leaves	PUQE (Pregnancy- Unique Quantification of Emesis/Nausea) within 24 hours	a papper tea bag. This is carried out by diffusion on mothers with emesis gravidarum twice daily for six days after consecutively eating in a closed room.	Light ≤ 6 Medium 7- 12 Weight ≥ 13	Interval
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3. RESULTS AND DISCUSSION

3.1. Results

Table 2 below is the result of observing the frequency of nausea and vomiting in 30 pregnant women in the first trimester before being given mint leaves infusing treatment in Pujud, Rokan Hilir Regency, Riau.

Table 2
Frequency Distribution of Nausea and Vomiting Before Infusion of Mint Leaves

Levels of Nausea and Vomiting	F	%
No Nausea And Vomiting	0	0
Light	0	0
Medium	12	40
Weight	18	60
Total	30	100

Table 2 shows that before being given the infusion of mint leaves, there were 18 (60%) pregnant women in the first trimester who experienced weight levels of nausea and vomiting. There were 18 (60%) pregnant women in the first trimester who experienced medium levels of nausea and vomiting. Table 3 below is the result of observing the frequency of nausea and vomiting in 30 pregnant women in the first trimester after being given mint leaves infusing treatment in Pujud, Rokan Hilir Regency, Riau.

Table 3
Frequency Distribution of Nausea and Vomiting After Infusion of Mint Leaves

Levels of Nausea and Vomiting	F	%
No Nausea And Vomiting	0	0
Light	26	86.7
Medium	4	13.3
Weight	0	0
Total	30	100

Table 3 shows that after being given the infusion of mint leaves, there were 26 (86.7%) pregnant women in the first trimester who experienced light levels of nausea and vomiting. There were 4 (13.3%) pregnant women in the first trimester who experienced medium levels of nausea and vomiting. Based on Table 2 and Table 3, it can be analyzed regarding the Pregnancy-Unique Quantification of Emesis and Nause (PUQE) values before and after being given the mint leaf infusion. The number of pregnant women at the weight level has decreased from 60% to 0%. And at the medium level from 40% to 13.3%. Meanwhile, on the light level, there was an increase from 0 to 26 pregnant women (86.7%). Table 4 below is the result of hypothesis testing on the infusing mint leaves significantly reduces the frequency of nausea and vomiting in pregnant women in the first trimester.

Table 4
Test the Effect After and Before Mint Infusion of Mint Leaves Treatment

Treatment	Z	P-Value
After and before infusion of mint leaves	-3.417	0,001

Table 4 shows that statistical calculations using the Wilcoxon test obtained test results for the effect of infusing mint leaves on reducing the frequency of nausea and vomiting in first trimester pregnant women with a p-value of $0.001 < 0.05$. This value means that there is a significant effect of infusing mint leaves treatment on the frequency of nausea and vomiting in first trimester pregnant women.

3.2. Discussion

Mint leaves' therapeutic benefits as a non-pharmacological treatment for nausea and vomiting can be helpful. Research has shown a significant effect of infusing mint leaves therapy on the frequency of nausea and vomiting in first-trimester pregnant women. This is supported by research by Masruroh et al. (2020), which stated that almost half of the respondents experienced nausea and that mint leaves effectively reduced the incidence of morning sickness in pregnant women in early pregnancy.

Yanti (2022) said that nausea and vomiting in pregnancy are usually mild and are conditions that can be controlled according to the condition of the pregnant woman. This condition sometimes stops in the first trimester, but its effects can cause nutritional disorders, dehydration, weakness, weight loss, and electrolyte imbalance (Fejzo et al., 2019; Ruspita et al., 2023). Nausea, vomiting that occurs in pregnancy is caused by increased levels of the hormones estrogen and progesterone produced by Human Chorionic Gonadotropin (HCG) in serum from the placenta (Kaban et al., 2021; Liu et al., 2022; Medved et al., 2023; Retnoningtyas & Dewi, 2021; Şahin, 2021). Nausea and vomiting during excessive pregnancy or hyperemesis gravidarum not only threaten the life of pregnant women but can also cause side effects on the fetus, such as abortion, low birth weight babies, premature birth, and malformation in newborn babies (Arisdiani & Hastuti, 2020; Bensoussan, 2023; Febriyeni & Delfina, 2021; Liu et al., 2022).

The results can be analyzed regarding the Pregnancy-Uniqe Quantification of Emesis and Nause (PUQE) values before and after being given the mint leaf infusion. The number of pregnant women at the weight level has decreased from 60% to 0%. And at the medium level, from 40% to 13.3%. Meanwhile, there was an increase from 0 to 26 pregnant women (86.7%) at the light level. Research of Ruspita et al. (2023) states that nausea and vomiting at light levels can cause weakness, not wanting to eat, weight loss and epigastric pain, decreased blood pressure, poor skin turgor, dry tongue, and sunken eyes. Medium levels can cause apathy, poor skin turgor, dry and dirty tongue, small and rapid pulse, dehydration, weight loss, and sunken eyes. The weight level can cause decreased consciousness to the point of coma, delicate and rapid pulse, severe dehydration, increased body temperature, decreased blood pressure, complications that can be fatal in the central nervous system with mental changes, etc.

The ability of mint leaves to reduce nausea and vomiting in pregnancy is thought to be related to the essential oil content contained in it, namely the α -, β -pinene limonene 1,8-cineole type (Liang et al., 2023). Mint leaves contain menthol, which can speed up circulation and relieve bloating, nausea, and cramps (Kazemi et al., 2024; Masruroh et al., 2020; Rahayuningsih & Yanuarti, 2023). Mint leaves contain essential oil (menthol), which has the potential to facilitate the digestive system and relieve stomach spasms or cramps (M. K. Arshad et al., 2023) because it has a mild anesthetic effect and contains carminative and antispasmodic effects which work in the small intestine in the gastrointestinal tract, so able to overcome or eliminate nausea and vomiting (Kazemi et al., 2024; Septiana et al., 2021). A Wheeling Jesuit University, US study concluded that people who consume peppermint regularly tend to eat 2,800 fewer calories each week than those who do not (Gingiss, 2021).

4. CONCLUSION

Infusing mint leaves had a significant effect on reducing the frequency of nausea and vomiting in pregnant women in the first trimester. The therapeutic benefits of mint leaves can prevent nausea and vomiting. This study offers proof of the health benefits of infusing mint leaves as well as a suggestion for an alternate treatment for decreasing nausea and vomiting.

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