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Comparison of Ginger-Honey and Mint-Honey Decoctions for Nausea and Vomiting in First-Trimester Pregnant Women in Pasawahan

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Abstract

Background: Nausea and vomiting are common in the first trimester and may disrupt maternal intake, daily activities, and comfort. Ginger-honey and mint-honey decoctions have potential as non-pharmacological adjuncts. Purpose: To compare the effectiveness of ginger-honey and mint-honey decoctions in reducing nausea and vomiting scores among first-trimester pregnant women. Methods: This quasi-experimental study used a pretest-posttest two-group design involving 44 first-trimester pregnant women recruited by purposive sampling and allocated into two groups of 22. The first group received a decoction containing 2.5 g fresh red ginger and 5 g honey, while the second received 2 g fresh peppermint leaves and 5 g honey. Both interventions were administered as 150 mL once daily after breakfast for seven days. Nausea and vomiting were measured using the PUQE-24. Wilcoxon, Mann-Whitney, and Spearman tests were used. Results: The median score decreased from 12 to 9 in the ginger-honey group and from 12.5 to 10 in the mint-honey group; both changes were significant ($p<0.001$). The median reduction was 4 versus 3, respectively, with a significant between-group difference ($p=0.022$). Maternal age ($p=0.975$) and employment status ($p=0.556$) were not significantly associated with score reduction. Conclusion: Both interventions reduced nausea and vomiting scores, but the ginger-honey decoction produced a greater reduction.

Keywords: first-trimester pregnancy, ginger-honey, mint-honey, nausea and vomiting, PUQE-24

Introduction

The first trimester of pregnancy involves hormonal and gastrointestinal changes that may trigger nausea and vomiting. Symptoms usually begin in early pregnancy and improve in most women as gestation advances.[1] Persistent nausea and vomiting may interfere with nutritional and fluid intake, daily activities, and maternal quality of life.[3]

Management can include pharmacological and non-pharmacological approaches. Ginger is widely used as a complementary option because gingerols and shogaols are associated with antiemetic activity and improved gastrointestinal motility.[4,5] Studies of ginger combined with honey have also reported reductions in pregnancy-related nausea and vomiting.[6]

Peppermint contains menthol and menthone, which are associated with cooling, smooth-muscle relaxation, and antispasmodic effects in the gastrointestinal tract.[11] Mint decoction and mint-honey preparations have been reported to reduce nausea and vomiting during pregnancy.[7,8] Direct comparisons of ginger and mint suggest that both may be beneficial, with a tendency toward a larger reduction in ginger groups.[9,10]

However, previous studies vary in preparation, ingredient composition, duration, instruments, and comparison groups. The present study standardized beverage volume, honey dose, administration time, intervention duration, and PUQE-24 assessment across both groups. This study aimed to compare the effectiveness of ginger-honey and mint-honey decoctions in reducing nausea and vomiting scores among first-trimester pregnant women and to examine whether maternal age and employment status were associated with score reduction.

Method

1. Research design

This study used a quasi-experimental pretest-posttest two-group design. Nausea and vomiting scores were assessed before the intervention and after seven days of intervention in two groups receiving different herbal preparations.

2. Setting and samples

The study was conducted from May to August 2026 in a primary health-care service area in Purwakarta Regency, West Java, Indonesia. The accessible population consisted of 78 first-trimester pregnant women experiencing nausea and vomiting. Forty-four participants were recruited using purposive sampling and divided into two groups of

22. Inclusion criteria were first-trimester pregnancy with nausea and vomiting, willingness to complete the seven-day intervention, ability to communicate adequately, and no history of allergy to ginger, mint, or honey. Women with severe vomiting suggestive of hyperemesis gravidarum, pregnancy danger signs, severe gastrointestinal disease, or concurrent use of other herbal therapies for nausea and vomiting were excluded.

3. Intervention

The ginger-honey group received a decoction prepared from 2.5 g fresh red ginger and 200 mL water reduced to a final volume of 150 mL, followed by 5 g honey after cooling to a warm temperature. The mint-honey group received 2 g fresh peppermint leaves prepared with the same water volume and final volume, followed by 5 g honey. Both preparations were administered once daily in the morning after breakfast for seven consecutive days. Adherence and any complaints during the intervention were recorded on an observation sheet.

4. Measurement and data collection

Nausea and vomiting were measured using the Pregnancy-Unique Quantification of Emesis and Nausea (PUQE-24), which assesses nausea duration, vomiting frequency, and retching frequency during the previous 24 hours. Each component is scored from 1 to 5, producing a total score of 3-15; higher scores indicate more severe symptoms. Assessments were conducted before the first intervention and on the morning after the seventh intervention day. Score reduction was calculated as pretest minus posttest. A characteristics questionnaire captured maternal age, gestational age, education, employment, and gravidity. Specific validity and reliability coefficients for the PUQE-24 version used were not reported in the provided thesis manuscript and should be added before submission.

5. Data analysis

Data normality was assessed using the Shapiro-Wilk test. Because the main score variables were non-normally distributed, within-group pre-post changes were analyzed using the Wilcoxon test. Between-group score reductions and differences by employment status were analyzed using the Mann-Whitney test, while the association between maternal age and score reduction was analyzed using Spearman correlation. Statistical significance was set at $p<0.05$.

Results

All 44 participants completed the study, with 22 participants in the ginger-honey group and 22 in the mint-honey group. Baseline characteristics were generally comparable. All pre-intervention, post-intervention, and change-score distributions were non-normal according to Shapiro-Wilk testing ($p<0.05$).

Table 1
Participant characteristics by intervention group

Characteristic	Ginger-honey (n=22)	Mint-honey (n=22)
Maternal age, mean ± SD (years)	27.45 ± 4.284	27.86 ± 4.335
Gestational age, mean ± SD (weeks)	9.41 ± 1.709	9.64 ± 1.560
Not employed, n (%)	13 (59.1)	14 (63.6)
Employed, n (%)	9 (40.9)	8 (36.4)
Primigravida, n (%)	8 (36.4)	7 (31.8)
Gravida 2, n (%)	7 (31.8)	8 (36.4)

Notes. SD = standard deviation.

Table 2
PUQE-24 scores before and after the intervention

Group	Pretest, mean ± SD; median (min-max)	Posttest, mean ± SD; median (min-max)	p*
Ginger-honey	12.05 ± 1.704; 12 (8-14)	8.55 ± 2.198; 9 (3-12)	<0.001
Mint-honey	12.18 ± 2.015; 12.5 (8-14)	9.55 ± 2.154; 10 (5-12)	<0.001

*Notes. *Wilcoxon test; SD = standard deviation.*

Table 3
Comparison of intervention effectiveness

Group	Median reduction	Minimum-Maximum	Mean rank	p*
Ginger-honey	4	2-7	26.77	0.022
Mint-honey	3	1-5	18.23	

*Notes. *Mann-Whitney test. Baseline scores did not differ significantly between groups (p=0.596).*

Table 4
Maternal age and employment status in relation to score reduction

Variable	Statistic	p	Interpretation
Maternal age	r_s = -0.005	0.975	No significant association
Employment status	U = 206	0.556	No significant difference

Discussion

Nausea and vomiting scores decreased in both intervention groups. In the ginger-honey group, the reduction is biologically consistent with gingerols and shogaols, which have been linked to improved gastrointestinal motility and modulation of serotonin-related emetic pathways.[4,5] The finding is also consistent with studies reporting reduced pregnancy-related nausea and vomiting after ginger-honey interventions.[6,12]

The mint-honey group also showed a significant reduction. Peppermint contains

menthol and menthone, compounds associated with cooling, antispasmodic activity, and gastrointestinal smooth-muscle relaxation.[11] This finding is consistent with studies of mint decoction and mint-honey preparations in first-trimester pregnant women.[7,8,13]

The between-group comparison showed a greater median score reduction in the ginger-honey group than in the mint-honey group. This pattern is consistent with previous direct comparisons of ginger and mint that reported a tendency toward greater improvement with ginger.[9,10] Because beverage volume, honey dose, administration time, frequency, and intervention duration were standardized, the difference more plausibly reflects differing responses to the primary herbal ingredients. Nevertheless, the quasi-experimental design and non-random sampling provide weaker causal inference than a randomized controlled trial.

Maternal age was not associated with symptom-score reduction, and employment status did not distinguish the magnitude of reduction. Nausea and vomiting in pregnancy are multifactorial, and maternal characteristics may not independently determine changes in symptoms.[1,14] Future studies should consider other potentially relevant factors, including gestational age, gravidity, diet, psychological status, fatigue, and adherence.[15]

Limitation

This study used purposive sampling without randomization and did not include a no-intervention control group. Potential confounding analysis was limited to maternal age and employment status, while other factors such as gestational age, gravidity, diet, psychological status, fatigue, and previous nausea and vomiting were not specifically analyzed. The intervention lasted only seven days; therefore, the findings primarily reflect short-term responses.

Conclusion

Both ginger-honey and mint-honey decoctions reduced nausea and vomiting scores among first-trimester pregnant women. The ginger-honey decoction produced a greater median score reduction than the mint-honey decoction, with a statistically significant difference in effectiveness. Maternal age and employment status were not significantly associated with score reduction. Ginger-honey decoction may be considered as a non-pharmacological adjunct while accounting for maternal condition, allergy history, medication use, and pregnancy danger signs. Further studies should use randomization, a control group, larger samples, and broader control of potential confounding factors.

Ethical Considerations

All potential participants received information about the study purpose, benefits, procedures, possible discomfort, confidentiality, and their right to refuse or withdraw. Participants who agreed provided written informed consent. The study was conducted after obtaining permission from the educational institution and the relevant health-care facility. The ethics committee approval reference number was not stated in the provided thesis manuscript and should be added before submission.

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Conflict of Interest

The conflict-of-interest statement should be confirmed by all authors before submission.

Author Contribution

YP: conceptualization, data collection, data processing and analysis, and manuscript drafting. DH and MLD: supervision, methodological review, interpretation of findings, and manuscript revision. All authors should confirm their contributions and approve the final manuscript before submission.

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