EFFECTIVENESS OF GINGER AROMATHERAPY ON NAUSEA AND VOMITING IN PREGNANT WOMEN AS A PREVENTIVE EFFORT AGAINST STUNTING : AN EXPERIMENTAL STUDY

Erni Ratna Suminar[1] *, Nisa Rizki Nurfita[2], Nurhasanah[3], Nur Aliah[4], Fathiyyatussabillah[5]

[1,2,3,4,5]Universitas Muhammadiyah Ahmad Dahlan Cirebon
Correspondence email: erniratnasuminar02@gmail.com

ABSTRAK : EKSPERIMEN EFEKTIVITAS AROMATERAPI JAHE TERHADAP MUAL MUNTAH PADA IBU HAMIL DALAM UPAYA PENCEGAHAN STUNTING

Latar Belakang : Mual muntah merupakan salah satu ketidaknyamanan yang dialami oleh ibu hamil pada trimester pertama. Di Indonesia jumlah ibu hamil trimester 1 yang melakukan kunjungan K1 sebanyak 4.873.441 ibu hamil dan sekitar 2.436.721 ibu hamil atau sekitar 50% ibu mengalami mual muntah pada kehamilan. Dampak dari mual muntah sangat berpengaruh terhadap penambahan berat badan saat hamil, hal tersebut berhubungan dengan jumlah asupan makanan yang akan diterima janin. Penambahan berat badan dan status gizi ibu hamil berhubungan dengan kejadian stunting.

Tujuan penelitian : Penelitian ini bertujuan untuk mengetahui Efektivitas Aromaterapi Jahe Terhadap Mual Muntah Pada Ibu Hamil dalam Upaya Pencegahan Stunting di Wilayah Harjamukti Kota Cirebon.

Metode penelitian : Dalam penelitian ini metode yang digunakan adalah Pre eksperimen one group pretest posttest design dengan pengambilan sampel purposiv sampling dan analisis uji *Wilcoxon Signed Ranks Test*. Populasi pada penelitian ini yaitu ibu hamil di wilayah Harjamukti Kota Cirebon sebanyak 162. Dengan jumlah sample 44 orang.

Hasil penelitian Skor mual muntah sebelum diberikan aromaterapi jahe sebanyak 24 orang ibu hamil (55%) mengalami mual muntah sedang dengan rentang skor 8-11, sehingga setelah diberikan aromaterapi jahe menjadi menurun sebanyak 23 orang ibu hamil (52%) mengalami mual muntah ringan dengan rentang skor 4-7. Didapat nilai Sig. (2-tailed) = 0.000 dengan nilai α = 0,05.

Kesimpulan : Berdasarkan hasil penelitian dapat diketahui bahwa ada pengaruh pemberian aromaterapi jahe terhadap skor mual muntah pada ibu hamil di wilayah Harjamukti Kota Cirebon ada pengaruh efektifitas aromaterapi.

Saran : Diharapkan bidan dan tenaga kesehatan lain dapat menerapkan aromaterapi jahe dalam menangani mual muntah pada ibu hamil sebagai terapi non farmakologi dalam pencegahan stunting.

Kata Kunci : **Mual, Muntah, Ibu Hamil, Aromaterapi Jahe**

ABSTRACT

Background : Nausea and vomiting are among the most common discomforts experienced by pregnant women during the first trimester. In Indonesia, the number of first-trimester pregnant women attending their first antenatal visit (K1) is 4,873,441, and approximately 2,436,721 (around 50%) of them experience nausea and vomiting during pregnancy. Nausea and vomiting can significantly affect maternal weight gain during pregnancy, which is closely related to the amount of nutritional intake received by the fetus. Maternal weight gain and nutritional status are strongly associated with the incidence of stunting. This study aimed to determine the effectiveness of ginger aromatherapy in reducing nausea and vomiting among pregnant women as a strategy to prevent stunting in the Harjamukti area, Cirebon City.

In this research, This study employed a pre-experimental design with a one-group pretest-posttest approach. The sampling technique used was purposive sampling, and data were analyzed using the Wilcoxon Signed Ranks Test. The study population consisted of 162 pregnant women in the Harjamukti area of Cirebon City, with a total sample of 44 respondents..

The results of research, Before the administration of ginger aromatherapy, 24 pregnant women (55%) experienced moderate nausea and vomiting with a score range of 8–11. After the intervention, the number decreased, with 23 pregnant women (52%) experiencing mild nausea and vomiting with a score range of 4–7. Statistical analysis showed a significance value of Sig. (2-tailed) = 0.000 with α = 0.05.

The findings indicate that ginger aromatherapy has a significant effect on reducing nausea and vomiting scores among pregnant women in the Harjamukti area, Cirebon City. This demonstrates the effectiveness of

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ginger aromatherapy as a complementary intervention. Midwives and other healthcare providers are encouraged to implement ginger aromatherapy as a non-pharmacological approach to manage nausea and vomiting in pregnant women, thereby contributing to stunting prevention efforts.

Keyword : Nausea, Vomiting, Pregnant Women, Ginger Aromatherapy

INTRODUCTION

Nausea and vomiting are among the common discomforts experienced by pregnant women during the first trimester. These symptoms are caused by increased levels of estrogen and progesterone hormones, which are stimulated by Human Chorionic Gonadotropin (HCG) produced by the placenta. Nausea and vomiting occur in approximately 60–80% of primigravida and 40–60% of multigravida pregnancies (Prawirohardjo, 2016). Globally, the prevalence of nausea and vomiting during pregnancy is estimated to affect 70–80% of all pregnancies (Romauli, 2023). According to the World Health Organization (WHO, 2019), the incidence of emesis gravidarum reaches 78.5% of pregnancies worldwide (Retni & Damansyah, 2022).

In Indonesia, 4,873,441 pregnant women in their first trimester attended their initial antenatal care (K1), and around 2,436,721 or 50% experienced nausea and vomiting (Kemenkes RI, 2020). In West Java, the prevalence is similarly high, affecting 60–80% of pregnant women (Dinkes Jabar, 2019).

Persistent nausea and vomiting may negatively impact maternal weight gain, which affects fetal nutritional intake. Inadequate weight gain and poor nutritional status in pregnant women are associated with an increased risk of stunting. everal studies have confirmed the relationship between maternal nutritional status and fetal growth; mothers with poor nutritional status or inadequate weight gain are at a higher risk of giving birth to stunted infants (Apriningtyas & Kristini, 2019).

If nausea and vomiting persist and become more severe, the risk of maternal and fetal malnutrition increases, which in turn can contribute to the incidence of stunting as one of the long-term outcomes. Since stunting is a chronic nutritional problem that begins during the prenatal period, intervention efforts during pregnancy are crucial. If nausea and vomiting are left untreated or inadequately managed, the risk of inadequate maternal and fetal nutrient intake may increase, thereby elevating the potential for stunting.

Stunting is a chronic nutritional problem that begins during the prenatal period. Indonesia has made progress in reducing the national prevalence of stunting, from 21.5% in 2023 to 19.8% in 2024 (SSGI, 2024). In West Java, the prevalence has also declined to 15.9% (West Java Provincial Health Office, 2024). However, interventions during pregnancy remain a key priority to achieve the national target of 14.2% by 2029. Therefore, effective management of nausea and vomiting during pregnancy plays a strategic role in maintaining maternal nutritional status and supporting stunting prevention efforts.

One of the non-pharmacological interventions that has recently received increasing attention is aromatherapy. Aromatherapy is a form of alternative therapy that uses essential oils extracted from flowers, leaves, stems, and roots. Essential oils are known to have pharmacological effects such as antibacterial, antiviral, diuretic, vasodilator, calming, and relaxing properties. One essential oil that can be used during pregnancy is ginger oil (Mamuroh et al., 2021).

Ginger essential oil contains active compounds such as gingerol and shogaol, which produce a strong aroma effective in reducing nausea and vomiting. Ginger works directly on the digestive system by enhancing gastric motility and absorbing toxins and acids. It is believed to provide a soothing effect in the stomach due to its essential oil content including zingiberene, zingiberol, bisabolene, curcumin, gingerol, and farnesene. These compounds may block serotonin, a neurotransmitter in the central nervous system and enterochromaffin cells in the digestive tract, by inhibiting HCG-induced gastric stimulation, thereby reducing nausea and vomiting (Dyna & Febriani, 2020).

Several studies in Indonesia have demonstrated the effectiveness of ginger in reducing nausea and vomiting among pregnant women, although most interventions have used oral preparations such as tea, extracts, or ginger candy. The use of ginger aromatherapy through inhalation represents a complementary approach that is practical, affordable, safe, and has the potential to enhance maternal comfort and nutritional intake during pregnancy. The results of the study showed that ginger aromatherapy was proven to be effective in reducing the intensity of nausea and vomiting in pregnant women during the first trimester (Maharani & Suryani, 2020). Therefore, ginger aromatherapy

may serve as a supportive strategy for stunting prevention starting from the prenatal period.

RESEARCH METHODS

The research method used in this study was a pre-experimental design with a one-group pretest-posttest approach. The sampling technique employed was purposive sampling. The study population consisted of 162 pregnant women in the Harjamukti area of Cirebon City. The study was conducted in August 2025 with a total sample of 44 participants.

The intervention administered was ginger aromatherapy, given for one day with a frequency of three times per day**.** The instrument used to measure the level of nausea and vomiting was the Pregnancy-Unique Quantification of Emesis and Nausea (PUQE) questionnaire.

The pretest was conducted before the first administration of ginger aromatherapy on the first day of the study, while the posttest was conducted 1–2 hours after the final administration of the intervention on the same day.

Inclusion Criteria

1. Pregnant women experiencing mild to moderate nausea and vomiting (based on PUQE scores).
2. Pregnant women willing to participate as respondents and who signed informed consent.
3. Pregnant women in stable general condition (no pregnancy complications).

Exclusion Criteria

1. Pregnant women with a history of severe hyperemesis gravidarum.
2. Pregnant women with comorbidities that may influence nausea and vomiting (e.g., severe gastrointestinal disorders).
3. Pregnant women using pharmacological antiemetic therapy during the study period.
4. Pregnant women unable to complete the intervention until the end of the study period.

Data analysis was performed using univariate and bivariate analyses. Since the data were not normally distributed, the *Wilcoxon Signed Ranks Test* was applied to determine differences in PUQE scores before and after the intervention.

RESEARCH RESULTS

Based on the table 1 above, the majority of pregnant women, 24 individuals (55%), experienced moderate nausea and vomiting with a score range of 8–11 before being given ginger aromatherapy.

Table 1
Nausea and Vomiting Scores Before Ginger Aromatherapy Intervention

Nausea and Vomiting Score	Frequency	Percentage (%)
No Nausea and Vomiting	0	0
Mild Nausea and Vomiting	20	45
Moderate Nausea and Vomiting	24	55
Severe Nausea and Vomiting	0	0

Table 2
Nausea and Vomiting Scores After Ginger Aromatherapy Intervention

Nausea and Vomiting Score	Frequency	Percentage (%)
No Nausea and Vomiting	17	39
Mild Nausea and Vomiting	23	52
Moderate Nausea and Vomiting	0	0
Severe Nausea and Vomiting	0	0

Based on the table 2 above, the majority of pregnant women, 23 individuals (52%), experienced mild nausea and vomiting with a score range of 4–7 after receiving ginger aromatherapy.

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Table 3
Normality Test Results of Nausea and Vomiting Scores

Variable	Shapiro-Wilk		
	Statistic	df	Sig.
Nausea and Vomiting Score (Pre)	.634	44	.000
Nausea and Vomiting Score (Post)	.767	44	.000

The data obtained from the study before and after the ginger aromatherapy intervention were not normally distributed, as confirmed by the Shapiro–Wilk test, which yielded a p-value of 0.000.

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Table 4
Comparison of Nausea and Vomiting Scores Before and After Ginger Aromatherapy

	Mean	Sign (2-tailed)	Z	Sum of Ranks
Nausea and Vomiting Score (Pre)	0.000			
Nausea and Vomiting Score (Post)	19.00	0.000	-6.083	703.00

Based on the table 4 above, the results of the Wilcoxon Signed Ranks Test showed that 37 respondents (84.1%) experienced a decrease in the intensity of nausea and vomiting after receiving ginger aromatherapy intervention, with a mean rank of 19 and a total rank sum of 703.00 in the "Negative Ranks" category (Nausea and Vomiting After < Nausea and Vomiting Before). No respondents showed an increase in nausea and vomiting intensity after the intervention (Positive Ranks = 0). Meanwhile, 7 respondents (15.9%) showed no change in nausea and vomiting intensity (Ties). The statistical test results indicated a Z value of -6.083 with a significance level of p = 0.000 (p < 0.05). This indicates a significant difference in the intensity of nausea and vomiting before and after the administration of ginger aromatherapy.

DISCUSSIONS

Based on the results, 55% (24 respondents) experienced moderate nausea and vomiting with scores ranging from 8 to 11 before receiving ginger aromatherapy. This finding aligns with the study by (Eka Cahyaningtyas et al. 2022), which reported that 71.9% of 32 pregnant women experienced moderate nausea and vomiting within the same score range. According to (Nurulicha and Aisyah, 2020), nausea and vomiting are among the earliest, most common, and stress-inducing symptoms associated with pregnancy. Almost all pregnant women experience nausea, sometimes accompanied by vomiting, usually beginning around five weeks of gestation and peaking between 8 and 12 weeks, then resolving by 16 to 18 weeks. When mild, nausea and vomiting do not cause significant harm; however, persistent symptoms can lead to dehydration, weight loss, hypothermia, and adverse effects on the fetus (Romauli, 2023).

Non-pharmacological interventions such as ginger aromatherapy play an important role in maintaining the nutritional intake of pregnant women. By reducing the intensity and frequency of nausea and vomiting, pregnant women can eat more comfortably, maintain a balanced diet, stay well hydrated, support proper metabolism, and achieve appropriate weight gain according to recommended standards. Several studies have shown that reducing nausea and vomiting symptoms has a direct impact on improving both the quantity and quality of maternal food intake (Ali et al., 2021; Titin et al., 2023). In addition, better symptom management enhances the quality of life of pregnant women, reduces stress, and supports emotional stability, all of which are crucial for optimal fetal growth.

After the administration of ginger aromatherapy, 52% (23 respondents) experienced mild nausea and vomiting with scores between 4 and 7. This corresponds with (Carolin and Ummah's, 2019) findings, where 63.3% of respondents experienced mild nausea after ginger aromatherapy. Similarly, (Wirda et al., 2020) found that 60% of respondents experienced mild nausea following the intervention.

The effectiveness of ginger aromatherapy is likely due to its ability to reduce nausea and vomiting duration by approximately 43-52%. Aromatherapy stimulates physiological and psychological responses; inhaled aromatic molecules activate olfactory receptors, sending impulses to the brain that release hormones promoting relaxation and mood improvement. Specifically, ginger essential oil contains compounds such as gingerol and shogaol that block serotonin receptors and exert antiemetic effects on the gastrointestinal and central nervous systems, thus alleviating nausea (Kustriyanti & Putri, 2021).

The Wilcoxon Signed Ranks Test revealed that 37 respondents (84.1%) showed a decrease in nausea and vomiting intensity after the intervention, with a mean rank of 19 and a total rank sum of 703. No respondents reported increased symptoms, and 15.9% (7 respondents) had no change. The test statistic was Z = -6.083 with p = 0.000 (p < 0.05), indicating a significant difference before and after ginger aromatherapy administration. These results confirm the effectiveness of ginger aromatherapy in reducing nausea and vomiting intensity during pregnancy.

This reduction is crucial because excessive nausea and vomiting can impair maternal and fetal nutrition, potentially contributing to stunting risk. Therefore, ginger aromatherapy is recommended as a non-pharmacological intervention to improve maternal health and support stunting prevention. Stunting is a form of linear growth impairment

caused by chronic malnutrition that begins in the womb and continues until the age of two. Efforts to prevent stunting must start before birth by ensuring that pregnant women achieve optimal nutritional status.

Supporting these findings, (Retni and Damansyah, 2022) also reported a significant effect of ginger aromatherapy on nausea and vomiting, with p-values below 0.05. Ginger aromatherapy uses volatile essential oils that, when inhaled, bind to receptors in the nasal mucosa, transmitting electrochemical signals to the brain and subsequently to the stomach. This process lowers HCG hormone levels and modulates progesterone and steroid hormones, which regulate gastric emptying and intestinal motility, reducing nausea and vomiting (Agustini et al., 2022).

In this study, ginger aromatherapy was administered by inhalation, using two drops inhaled for 3-5 minutes until nausea subsided. The inhaled molecules stimulate olfactory receptors, triggering hormonal release that enhances mood and physical responses, thereby mitigating nausea and vomiting (Septiani, et al., 2021). Thus, ginger aromatherapy is not merely a method to reduce nausea and vomiting but also a part of a stunting prevention strategy centered on maternal health. The implementation of this intervention can be carried out by midwives and other healthcare providers in primary healthcare facilities, such as community health centers and clinics, as an integral component of comprehensive antenatal care services.

CONCLUSION

The results of this study indicate that ginger aromatherapy is a safe, easy-to-implement non-pharmacological alternative that supports the health of pregnant women by helping to maintain optimal nutritional intake. Therefore, this intervention has the potential to be part of preventive efforts to reduce the risk of stunting starting from the pregnancy period. Thus, there is a significant effect of ginger aromatherapy on reducing nausea and vomiting scores in pregnant women in the Harjamukti area of Cirebon City in 2025.

SUGGESTIONS

Based on the study results, it is recommended that healthcare providers use ginger aromatherapy as a safe and effective non-pharmacological treatment for nausea and vomiting in pregnant women. Pregnant women should be encouraged to use this therapy to maintain their nutritional intake. Health centers should educate the community on its benefits for early stunting prevention. Future research should employ experimental designs with control groups, larger samples, and longer follow-up periods to better assess the effects on maternal and fetal nutrition. Studies could also explore factors like adherence, aroma preferences, and psychological impacts to deepen understanding of the therapy's effectiveness.

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