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Finger Hold Relaxation Combined with Ginger Aromatherapy for Emesis Gravidarum

Retno Palupi[1], Lydia Febrina[2], Wenny Indah Purnama Eka Sari[3]

[1,2,3]Midwifery Faculty, Health Polytechnic, Bengkulu, Indonesia

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ABSTRACT

Pregnancy is a period from conception to childbirth, involving complex physiological and psychological adjustments due to significant hormonal and physical changes. One of the main symptoms in the early stages of pregnancy is nausea and vomiting, which hormonal changes, emotions, or anxiety can cause. This study aims to determine the effect of finger hold relaxation combined with ginger (Zingiber Officinale) aromatherapy on emesis gravidarum in first-trimester pregnant women in the work area of Puskesmas Embong Ijuk, 2024. The research method used is a pre-experiment with a one-group pre-test-post-test approach without control. The research sample consists of 24 first-trimester pregnant women with emesis gravidarum, selected using purposive sampling technique. The instrument used is the PUQE-24 questionnaire. Data analysis was performed using the Wilcoxon test. The analysis results show a significant difference between pre-test and post-test values (p-value = 0.000), indicating the influence of finger hold relaxation combined with ginger aromatherapy on emesis gravidarum in first-trimester pregnant women. Finger hold relaxation effectively reduces stress that can trigger nausea, while ginger aromatherapy acts directly on the symptoms of nausea through chemical pathways. This combined approach provides holistic treatment that considers not only physical symptoms but also the mental well-being of pregnant women. It is hoped that first-trimester pregnant women can apply finger hold relaxation combined with ginger aromatherapy as an alternative non-pharmacological therapy to treat emesis gravidarum

Corresponding Author:

Lydia Febrina,
Midwifery Faculty,
Health Polytechnic of Bengkulu,
Indragiri Street, No. 3, Padang Harapan, Bengkulu, 38225, Indonesia
Email: lydia.fe15@gmail.com

1. Introduction

Nausea and vomiting of pregnancy (NVP) is a common condition that affects up to 70% of pregnant women. NVP typically begins at 6–8 weeks of gestation and generally resolves by 16–20 weeks (Liu et al., 2022). Vomiting usually occurs in the morning, while nausea, often described by sufferers as the most severe symptom, can persist throughout the day (Gadsby et al., 2020). It occurs in about 60-80% of primigravida and 40-60% of multigravida (Anggraini et al., 2021). Hyperemesis gravidarum (HG) is generally considered to be the most serious expression of NVP (Liu et al., 2022), and occurs in 0.3–3.6% of pregnant women worldwide (Yonezawa et al., 2024), in Indonesia reaches 14.8% of all pregnancies (Wardani & Umar, 2023). HG is the leading cause of hospitalization during the first trimester and the second most common indication for hospitalization during pregnancy overall (Fejzo et al., 2019). It is associated with maternal and fetal morbidity and has been linked to nutritional deficiencies during

pregnancy, oesophageal damage, mental health effects, and birth outcomes such as preterm delivery and low birth weight. Therefore, it is important to elucidate the pathologies of NVP and HG, which have serious implications for maternal and fetal health (Yonezawa et al., 2024).

The exact causes of NVP and HG are unknown, but various factors have been hypothesized to be associated with their pathogenesis. With advances in precision medicine and molecular biology, some genetic factors, such as growth/differentiation factor 15 (GDF15), have become potential therapeutic targets. Historical hypotheses regarding the pathogenesis of NVP and HG include hormonal factors, Helicobacter pylori infection, gastrointestinal dysmotility, placenta-related factors, psychosocial factors, and newer factors identified through genetic research (Liu et al., 2022).

Nausea and vomiting of pregnancy (NVP) can be managed with dietary and lifestyle modifications, vitamin B6, and non-pharmacological options, including ginger, acupressure, acupuncture, and electrical nerve stimulation of the P6 point (Fejzo et al., 2019). Ginger aromatherapy is one of the most commonly used therapies to reduce nausea or vomiting during pregnancy (Catur et al., 2021; Fejzo et al., 2019; Li et al., 2019; Shahrajabian et al., 2019). Ginger has essential oil content that has a refreshing effect and blocks the gag reflex, while gingerol can launch blood and nerves work properly (Fajri et al., 2023).

Psychological factors are linked with HG or NVP (Crespi, 2024; Fejzo et al., 2019; Nelson-Piercy et al., 2024). Adverse psychological factors may include depression, anxiety, mood disorders, and stress (Liu et al., 2022). Relaxation techniques could serve as a beneficial intervention for alleviating anxiety, distress, and depression (Hamdani et al., 2022). Finger-hold relaxation is crucial for managing emotions and developing emotional intelligence. It facilitates relaxation of the body, mind, and spirit (Alam et al., 2022; Haniyah & Adriani, 2020). This technique originates from Japanese healing art called Jin Shin Jyutsu (JSJ). It helps to empower individuals to relieve stress and minimize anxiety and discomfort (Millspaugh et al., 2021).

Based on data from the Health Office of Kepahiang Regency in 2023, the percentage of pregnant women who underwent their first antenatal care visit (K1) at a health facility is 78.39%. Puskesmas Embong Ijuk in Kepahiang Regency is one of the 14 health centers with the highest K1 coverage, at 87.65%, and 80% of pregnant women experience emesis gravidarum. Management includes providing health education, dietary regulation, and pharmacological therapy with vitamin B6. Despite the use of various treatments, the prevalence of emesis gravidarum at Puskesmas Embong Ijuk remains relatively high. This is due to several factors. Individual responses to treatment can vary, which means that some women may not benefit as much from the interventions. Adherence to the treatment plan can also be challenging, potentially leading to less satisfactory outcomes. Psychological factors, such as stress and anxiety, can exacerbate symptoms and reduce the effectiveness of the therapy. Additionally, current treatments may not be sufficient for all cases, highlighting the need for further research to discover more effective therapies or improved combinations of treatments. Furthermore, no research has been conducted in the Puskesmas Embong Ijuk area regarding non-pharmacological therapies for emesis gravidarum. Therefore, researchers are interested in investigating the effect of finger hold relaxation combined with ginger aromatherapy on emesis gravidarum in the Work Area of Embong Ijuk in 2024.

2. Methods

Aromatherapy Procedure with Ginger (Zingiber officinale): 4 drops of ginger oil are mixed into a diffuser containing 100 ml of water, then inhaled in the room for 15 minutes. This procedure is performed once a day for 3 days (Ekacahyaningtyas et al., 2022). The diffuser is placed at a distance of 30-60 cm from the individual (Sari et al., 2023). Finger grip relaxation is conducted for 15 minutes with the therapy administered once a day for 3 days (Larasati & Hidayati, 2022). Therefore, the combined therapy of finger grip relaxation and ginger aromatherapy is conducted once a day for 3 days, with each session lasting 15 minutes and accompanied by the spouse.

The population in this study comprises all pregnant women in their first trimester located in the working area of Puskesmas Embong Ijuk, Kepahiang District, who are experiencing emesis gravidarum, totaling 40 individuals. The sample for this study consists of pregnant women in their first trimester,

chosen using purposive sampling techniques. Purposive sampling involves selecting participants based on specific criteria. This study considers several factors, including choosing respondents who meet the inclusion criteria, reside in areas accessible to the researchers, and have their spouses agree to participate throughout the study. The sample size is determined using the Lameshow theory formula. To address potential issues such as participant drop-out, data loss, or non-compliance, the sample size is adjusted with an additional buffer for anticipated drop-out rates. As a result, the study includes a total of 24 participants. The instruments employed in this study include a diffuser, water, ginger essential oil, a questionnaire for respondent characteristics, the Pregnancy Unique Quantification of Emesis and Nausea (PUQE-24) questionnaire, and an observation sheet.

3. Results and Discussion

Writing Procedure/Numbering of section, subsection

Table 1.
Characteristics of Pregnant Women in the First Trimester with Emesis Gravidarum

No	Characteristic	Frequency	Percent
1.	Age		
	At Risk (<20 and >35 years)	4	16.7
	Not At Risk (20-35 years)	20	83.3
2.	Education		
	Low Education	6	25.0
	Higher Education	18	75.0
3.	Employment Status		
	Not Working	12	50.0
	Working	12	50.0
4.	Parity		
	Primigravida	15	62.5
	Multigravida	9	37.5

A total of 24 pregnant women met the inclusion criteria. According to Table 1, among these respondents, 20 (83.3%) are in the not-at-risk age category, 18 (75%) have higher education (high school or above), 12 (50%) are employed while 12 (50%) are not employed, and 15 (62.5%) are primigravida.

Table 2.
Average Nausea and Vomiting Scores in Pregnant Women in the First Trimester Before and After Receiving Finger Grasp Relaxation Combined with Ginger Aromatherapy (Zingiber officinale)

Variabel	Mean	Mean Difference	SD	Min	Max
Pre test	8.25	4,37	1.511	6	11
Post test	3.88		1.076	3	7

Based on Table 2, among the 24 respondents who received finger grasp relaxation combined with ginger aromatherapy (Zingiber officinale) for three consecutive days, the average nausea and vomiting score before the intervention was 8.25, while the average score after the intervention was 3.88. The difference in the average nausea and vomiting score before and after the intervention was 4.37.

Table 3.
Normality Test for Emesis Gravidarum Scores Before and After Intervention

Variable	*P-Value*	Description
Pre test	0.072*	Normal
Post test	0.000*	Not Normal

Note: a Shapiro-Wilk Test, Significance > 0.05

Table 3 shows that the pre-test value (p-value = 0.072) is greater than 0.05, indicating a normal distribution, while the post-test value (p-value = 0.000) is less than 0.05, indicating a non-normal distribution. Since the data is not normally distributed, hypothesis testing in this study was conducted using a non-parametric statistical test, specifically the Wilcoxon signed-rank test.

Table 4.
Effect of Finger Grasp Relaxation Combined with Ginger Aromatherapy (Zingiber officinale) on Emesis Gravidarum in the Working Area of Puskesmas Embong Ijuk

Variable	Mean	Mean Difference	±SD	C1 95%	*P-Value*
Pre test	8.25	4.37	1.511	7.61-8.89	0.000*
Post test	3.88		1.076	3.42-4.33	

***** *Note: a Wilcoxon Signed-Rank Test, Significance < 0.05*

Based on Table 4, the Wilcoxon test results before and after the intervention show a p-value of 0.000, which is significant (p-value < 0.05). This indicates that the finger grasp relaxation combined with ginger aromatherapy is effective in reducing emesis gravidarum in pregnant women in their first trimester in the working area of Puskesmas Embong Ijuk in 2024.

Discussion

Characteristics of Research Subjects

Severe nausea and vomiting in pregnancy (NVP), also known as hyperemesis gravidarum (HG), is a multifactorial condition linked to various risk factors (Parihar & Singh, 2019). Factors such as age, educational status, occupation, residence, family history, previous HG, unplanned pregnancy, recent abortion, and gravidity are significantly associated with HG (Mohammed Seid et al., 2024). The age range of 20-35 years is often referred to as a safe reproductive age because, during this period, the reproductive organs are generally mature and prepared for pregnancy. Women in this age group tend to have more optimal physical conditions and reproductive health, which results in a lower risk of pregnancy complications or reproductive health issues.

Pregnancy at a young age (under 20 years) and at an older age (over 35 years) carries higher risks compared to pregnancy at a healthy reproductive age. This is because, at under 20 years, the uterus and pelvis of the mother have not yet fully developed and matured to become a mother, whereas at over 35 years, the elasticity of the pelvic muscles and surrounding tissues, as well as reproductive organs in general, have declined, which can complicate childbirth and subsequently lead to higher risks of maternal mortality (Hijrawati et al., 2023)

Women with HG are more likely to be younger and primiparous. This may be attributed to their first-time exposure to elevated levels of human chorionic gonadotropins and other stress hormones during pregnancy. Multiparous women often cope with symptoms more easily due to their previous pregnancy experiences. In contrast, other studies have indicated that multigravidas (women with multiple pregnancies) are also significant risk factors for HG (Parihar & Singh, 2019). Additionally, pregnant women over the age of 35 may experience stress due to unplanned pregnancies or feelings of unpreparedness (Wardani & Umar, 2023). Research has shown that women who had HG in previous pregnancies are likely to experience it again, potentially due to stress, recurring risk factors, or a genetic predisposition involving maternal, paternal, and fetal genes (Mohammed Seid et al., 2024).

Pregnant women with education levels of grade ≤10 are more likely to develop HG compared to those with a diploma or higher (Mohammed Seid et al., 2024). Higher educational levels facilitate better acceptance of new and innovative healthcare ideas, effective communication with healthcare providers, and clearer expression of concerns, leading to more accurate diagnosis and care. Higher education levels enable pregnant women to actively participate in their healthcare, improving adherence to medical advice and adaptability to necessary changes for managing pregnancy conditions.

Compared to employed women, housewives are at increased risk for both prolonged moderate and severe NVP (Zhang et al., 2020). Housewives might be more exposed to vomiting triggers at home (Mohammed Seid et al., 2024). However, whether employment status is a definitive risk factor remains

unclear, as women may stop working due to their symptoms rather than employment status itself being a direct risk factor. Additionally, housewives might remain at home due to multiparity and the need to care for other children (Zhang et al., 2020). Based on this study, it was found that there is no significant effect of employment on the occurrence of emesis gravidarum in pregnant women. The results indicate that both working and non-working mothers have the same likelihood of experiencing emesis gravidarum. This suggests that employment does not play a significant role in the onset of this condition. Other factors, such as hormonal changes, psychological state, maternal readiness, genetics, previous pregnancy history, and individual health conditions, influence the onset of nausea and vomiting during pregnancy.

Other significant risk factors for hyperemesis gravidarum include low maternal age, lower educational level, being a housewife, urban residency, a history of hyperemesis gravidarum, a family history of the condition, unplanned pregnancies, and recent abortions should receive more careful monitoring (Dekkers, 2019).

Average Nausea And Vomiting Scores Before And After Administration Of Finger Hold Relaxation Combined With Ginger Aromatherapy

Univariate analysis results indicate that the nausea and vomiting score before the administration of finger hold relaxation combined with ginger aromatherapy was (8.25), and after the intervention, the score decreased to (3.88), showing a difference of (4.37). The reduction in the emesis gravidarum score suggests a substantial difference in the average nausea and vomiting scores before and after the intervention. This indicates that there is a significant effect of administering finger hold relaxation combined with ginger aromatherapy on reducing emesis gravidarum.

According to research conducted by Supriyatin et al., (2021) there was a reduction in anxiety among pre-operative breast cancer patients at Dr. Mintoharjo Hospital after finger grip relaxation. Research by Sari & Norhapifah, (2022) also showed a decrease in anxiety among pregnant women before a cesarean section at Kudungga Sangatta Hospital. Similarly, a study by Hamidah Eneng, (2023) demonstrated a reduction in anxiety levels from moderate to mild in pre-operative patients after finger grip relaxation. Thus, it can be concluded that finger grip relaxation impacts anxiety levels, making it an effective complementary therapy for reducing anxiety. Research by Ekacahyaningtyas et al., (2022) in the Sambirejo Health Center area showed a reduction in morning sickness in first-trimester pregnant women after receiving ginger oil aromatherapy. A study by Azaria & Anjrawati, (2023) also indicated a decrease in nausea and vomiting among pregnant women after ginger aromatherapy. Likewise, research by Dyna & Febriani, (2020) in the Payung Sekaki Pekanbaru Health Center area demonstrated that ginger aromatherapy had a significant effect in reducing the frequency of nausea and vomiting in pregnant women. Therefore, it can be concluded that ginger aromatherapy is effective in helping pregnant women alleviate nausea and vomiting.

Based on the reduction in average emesis gravidarum in this study, finger grip relaxation helps reduce stress and tension that can worsen symptoms, while ginger aromatherapy provides a natural antiemetic effect that alleviates nausea. The combination of these two methods works synergistically and offers a more effective solution. This study emphasizes that these holistic and non-pharmacological approaches can enhance the quality of life for pregnant women experiencing emesis gravidarum, providing a safe and comfortable alternative for pregnancy care.

The Effect of Finger Hold Relaxation Combined with Ginger Aromatherapy on Emesis Gravidarum in the Work Area of Puskesmas Embong Ijuk in 2024

Holding the fingers and regulating breathing can reduce and alleviate physical and emotional tension, as finger gripping is linked to the body's organs and emotions located in the fingers. During finger gripping, reflex points on the hands provide spontaneous stimulation. This stimulation sends shock or electrical waves to the brain, which processes it rapidly and then transmits it to the nerves of the affected organs, clearing energy blockages. These blockages represent imbalanced feelings such as worry, anxiety, anger, fear, and sadness, which can obstruct energy flow in the body and cause discomfort (N. Sari & Norhapifah, 2022).

Ginger's mechanism directly affects the digestive tract by enhancing gastric motility and toxin and acid absorption (Tiara Carolin & Regita Putri, 2022). Ginger is commonly used to treat nausea, motion sickness, and even vertigo. Its aromatic and spicy qualities warm the body, making it a useful medicinal ingredient. Ginger processed into aromatherapy can help reduce nausea and vomiting during pregnancy. The advantage of ginger oil is that its essential oil content can alleviate nausea in pregnant women due to its stronger aroma, which is more effective in reducing nausea (Siregar et al., 2022)

Research on the combined effect of finger grip relaxation and ginger aromatherapy for managing emesis gravidarum shows very significant and promising results. Emesis gravidarum, characterized by excessive nausea and vomiting during pregnancy, often causes physical and psychological discomfort and can affect nutritional intake and overall well-being. This study aims to find an effective and safe alternative method to alleviate these symptoms.

In the study by Latifah et al., (2023), the mean score before ginger aromatherapy was 7.14, and after aromatherapy, it decreased to 4.07, a difference of 3.077, with a p-value of 0.000 < α = 0.05, indicating that ginger aromatherapy affects nausea and vomiting in first-trimester pregnant women. Research by Dyna & Febriani, (2020) also showed a difference in average nausea and vomiting frequency before and after ginger oil aromatherapy, from 11.08 to 8.33, with an average difference of 2.75 and a p-value of 0.000. Pramesti et al., (2020) also conducted a similar study showing the effect of ginger aromatherapy on reducing the frequency of nausea and vomiting (emesis) in pregnant women in the Sungai Durian Health Center area, Kubu Raya Regency, with a p-value of 0.000 < α = 0.05, where the average value decreased from 7.00 (moderate) to 5.37 (mild), a difference of 1.63.

This study indicates that pregnant women who received the combination of finger grip relaxation and ginger aromatherapy experienced a more significant reduction. The average score before intervention was 8.25, and after the intervention, it decreased to 3.88, a difference of 4.37, with a p-value of 0.000 < 0.05. This reduction was observed not only in physical aspects but also in psychological well-being, where participants reported feeling calmer and better able to manage their symptoms, partly due to the involvement of supportive husbands.

A study clarified that perceived family support has a significant positive relationship with emotional well-being, social well-being, and psychological well-being (An et al., 2024). The reduction in anxiety with finger hold relaxation is enhanced when accompanied by family support. It influences the psychological responses experienced by patients, as it fosters motivation and readiness to face medical procedures. Psychological responses to anxiety in patients include restlessness, tremors, and worry (Silviani et al., 2021).

The synergistic effect of these two therapies can be explained through their complementary mechanisms: finger hold relaxation helps reduce stress that can trigger nausea, while ginger aromatherapy directly targets nausea symptoms through biochemical pathways. This combination provides a holistic approach that addresses not only physical symptoms but also mental well-being. Thus, the findings support the use of finger hold relaxation combined with ginger aromatherapy as an effective, safe, and comfortable holistic approach for alleviating emesis gravidarum. It offers a valuable alternative for pregnant women seeking non-pharmacological solutions to manage nausea and vomiting during pregnancy, thereby improving their quality of life during this period.

4. Conclusion

The average nausea and vomiting score in pregnant women in the first trimester before receiving the finger grip relaxation combined with ginger aromatherapy intervention was 8.25. After receiving the intervention for 3 days, the score decreased to 3.88, a difference of 4.37 with *p-value* = 0.000. There is a significant effect of the combination of finger hold relaxation and ginger aromatherapy in reducing emesis gravidarum in first-trimester pregnant women in the work area of Puskesmas Embong Ijuk in 2024. Therefore, pregnant women can apply this therapy whenever they experience symptoms of emesis gravidarum again. The study findings endorse the combination of finger hold relaxation and ginger aromatherapy as a holistic, effective, safe, and comfortable method for relieving emesis gravidarum. This therapy offers a significant non-pharmacological alternative for pregnant women

looking to address nausea and vomiting during pregnancy, potentially enhancing their overall quality of life during this period.

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