



The Impact Of Ginger Aromatherapy On The Occurrence Of Nausea And Vomiting In Pregnant Women During The Initial Trimester At The Kersana Health Center In 2024

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Abstract. Ginger is an herbal medicinal ingredient that is efficacious in relieving coughs and sore throats, lowering bad cholesterol levels, relieving headaches, overcoming rheumatism, losing weight, maintaining heart health, overcoming nausea and digestive problems, preventing intestinal inflammation, improving the immune system, and cure asthma. Ginger acts as an aromatherapy treatment for nausea in pregnant women during the initial stage of pregnancy. The employed methodology is quasi-experimental, utilizing the one-group pretest and posttest design approach. This research design lacks a comparison group (control). However, the researcher conducts an initial observation (pretest) to assess the change. The study's independent variable is the use of ginger aromatherapy. The study focused on the dependent variables of nausea and vomiting experienced by pregnant women during the first trimester. The study findings demonstrated that ginger aromatherapy had a significant impact on reducing the occurrence of nausea and vomiting in pregnant women during the first trimester at the Kersana Brebes Health Center in 2024, shifting the severity from moderate to mild.

Keywords: ginger, aromatherapy, nausea, vomiting, first trimester

INTRODUCTION

Pregnancy is the duration from conception to the birth of the fetus, lasting for 280 days (40 weeks or 9 months and 7 days). It is divided into three stages: the first trimester, which spans from 0 to 14 weeks; the second trimester, which spans from 14 to 28 weeks; and the third trimester, which spans from 28 to 42 weeks (Yuli, 2017). During the first trimester of pregnancy, pregnant women commonly experience physiological adjustments in their gastrointestinal tract. These adaptations include an elevation in Human Chorionic Gonadotropin (HCG) levels and alterations in glucose metabolism, which can lead to the occurrence of nausea and vomiting, also known as emesis gravidarum. The symptoms of nausea and vomiting often manifest between 8 to 12 weeks of pregnancy and gradually diminish, ceasing completely by the 16th week of pregnancy (Wijayanti, 2019)

Nausea and vomiting can lead to malnutrition in pregnant women and their developing fetus. The first trimester is a crucial phase during which the organs of the fetus begin to mature in their early stages. Nutritional deficits during fetal development can result in imperfect organ formation (Yunis et al., 2021)

The impact that occurs if a pregnant woman experiences nausea and vomiting continuously will result in reduced body fluids, so that the mother's blood becomes thick (hemoconcentration) and circulation of blood tissue is late. This will cause tissue damage that can interfere with the mother's health and fetal development. In addition, nausea and vomiting can cause the mother to be weak and lose weight, so it can result in fetal growth in the uterus also being disturbed. Persistent nausea and vomiting can threaten the mother's life and cause fetal disorders such as abortion, low birth weight, birth *premature* and *Malformation* in newborns. (Yunis et al., 2021)

How heavy is it for a mother who is pregnant with her child, so Allah SWT directly commands a child to be filial to his parents as stated in the QS. Luqman verse 14, which reads:

وَوَصَّيْنَا الْإِنْسَانَ بِوَالِدَيْهِ حَمَلَتْهُ أُمُّهُ وَهْنًا عَلَى وَهْنٍ وَفِصَالُهُ فِي عَامَيْنِ أَنِ اشْكُرْ لِي وَلِوَالِدَيْكَ إِلَيَّ الْمَصِيرُ ﴿١﴾

It means: "And We command man (to do good) to his parents. His mother had conceived him in an increasingly weak state, and weaned him at the age of two. Be thankful to Me and to your parents. Only to Me will return you." (QS. Luqman Verse-14)

The above verse explains that a child is obliged to respect both of his parents, especially a mother, because when A pregnant woman means a woman is in a weak and vulnerable condition. Several factors cause the increasingly weak condition referred to in the Qur'an, one of which is due to nausea and vomiting experienced by pregnant women, especially during the first trimester.

Typically, mothers who suffer from nausea and vomiting feel uncomfortable and desire to quickly overcome this phase. Nausea and vomiting are experienced by 60-80% of first-time pregnant women (primigravids) and 40-60% of women who have been pregnant before (multigravida). Out of every thousand pregnancies, these symptoms worsen in one hundred cases. If not managed appropriately, the consequences of nausea and vomiting can lead to persistent symptoms during early pregnancy, resulting in dehydration, electrolyte imbalances, or vitamin shortages, a condition referred to as Hyperemesis gravidarum.

Pharmacological or non-pharmacological therapy can be used to alleviate nausea and vomiting during the first trimester of pregnancy. Non-pharmacological therapies, often known as non-drug therapies, encompass many approaches, such as mental (emotional) support, management of dietary patterns, acupuncture, and aromatherapy. Aromatherapy is a non-conventional therapeutic approach that can alleviate the symptoms of nausea and vomiting commonly experienced by pregnant women during the initial three months of pregnancy. Generally, aromatherapy is performed to enhance mood and alter cognitive functions, and it can also serve as a supplementary medication (Kurniasari, 2017).

There are many types of plants that can be used as aromatherapy that aims to be an alternative to non-pharmacological treatment, one of which is ginger. Ginger aromatherapy is the most common and is considered safe to use to reduce nausea or vomiting (Wirda et al., 2020).

Ginger aromatherapy is the most effective aromatherapy for pregnant women who are feeling nauseous and vomiting. Compared to other plant aromatherapy, ginger also has many benefits for pregnant women who are sick and vomiting. Ginger (*Zingiber Officinale*) has between 1% and 4% essential oils and an oleosin from gingerol. Ginger essential oil has been shown to stop vomiting by blocking serotonin in the *Gastrointestinal*. This serotonin compound makes the abdominal muscles tense, so when blocked, the digestive system muscles become soft and weaken, reducing nausea significantly (Retni & Damansyah, 2023).

The study conducted by Citrawati and Arwidiana (2022) demonstrates that ginger aromatherapy impacts nausea and vomiting experienced by pregnant women during the first trimester, especially morning sickness (Dyna & Febriani, 2020). Given this context, the researcher aims to investigate ginger aromatherapy's impact on nausea and vomiting in pregnant women during the initial three months of pregnancy at the Kersana Health Center in 2024.

LITERATURE

Ginger Aromatherapy

Aromatherapy Content of Ginger

Ginger rhizomes contain 1-3% essential oils, the main chemical content of which is *Zingiberen* and β -bisabolen. The spicy and tangy flavor is produced by a mixture of phenolic compounds called *gingerol*, *gingerdiol*, *gingerdione*, *dihydrogingerdione*, and

shogaol. *Shogaol* is produced from the process of dehydration and degradation of gingerol and is formed during drying and extraction. *Shogaol* is more spicy and tangy than gingerol, which is the fact that dried ginger is more spicy than fresh ginger (Heinrich et al., 2010). Ginger has several different chemical contents. Factors that can affect the chemical content of ginger are the type of ginger, soil elements, harvest age, and ginger rhizome processing. The components contained in ginger are water 80.9%, protein 2.3%, fat 0.9%, mineral 1.2%, fiber 2-4%, and carbohydrates 12.3%. The chemical composition of ginger in 100 gr. (Putri Maria, 2019).

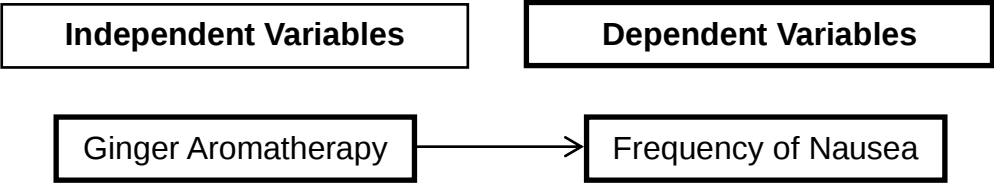
Benefits of Ginger Aromatherapy

The benefits of ginger as an herbal medicinal ingredient, Swari (2017), Anon. (2018), and Hafida (2019) stated that ginger is a safe, effective herbal medicinal ingredient that has high efficacy for health. According to Swari (2017), ginger is efficacious for preventing indigestion, reducing muscle and joint pain (due to the activity of gingerol, ginger-dione, zingerone, and *oleoresin*), increasing male fertility (due to the aphrodisiac effect/stimulating sexual power), and treating arthritis. The content of the active chemical compounds *gingerol, zingeron, shogaol, gingerin, and zingerberin in ginger causes ginger to have great benefits for health* (Anon., 2018); for example, one goal could be to achieve weight loss. Managing cardiovascular health, alleviating motion sickness, addressing gastrointestinal issues, alleviating nausea and vomiting during pregnancy, reducing the risk of colorectal cancer, treating headaches and allergies, enhancing immunological function, and managing conditions associated with throat disorders (Pujiasmanto, 2021)

In the intervention group, ginger aromatherapy was administered by applying two drops of essential oil at a concentration of 2% onto a tissue soaked in a 10 ml solution. Maintain a distance of 3 centimeters from your nose. Engage in a 15-minute inhalation session every morning, consistently for 7 consecutive days.

Conceptual Framework

According to Notoatmodjo (2018), the conceptual framework is the framework of the relationship between concepts that will be measured and observed in research. A conceptual framework must show the relationship between the variables to be studied. The conceptual framework in this study can be described as follows:



Picture 1
Conceptual Framework

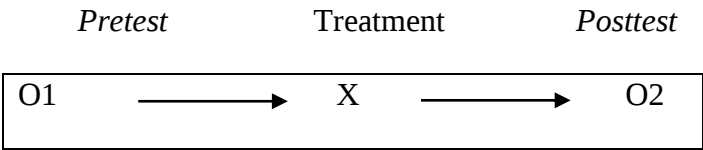
Hypothesis

A hypothesis is a tentative solution to a research topic based on empirical evidence gathered through data collection (Sugiyono, 2019). Based on the study above, the hypothesis for this study can be phrased as follows: The study investigates the impact of ginger aromatherapy on the occurrence of nausea and vomiting in pregnant women during the first trimester at the Kersana Health Center in 2024.

METHOD

Research Design

The research design employed in this study is quasi-experimental, utilizing the one-group pretest and posttest design approach. This design does not include a comparison group (control), but it does involve an initial observation (pretest) that enables the researcher to assess the changes that take place after the experiment (program) (Notoadmodjo, 2010). The study employed a research design chart. The research is delineated as follows:



Source: Notoatmodjo, 2012

Picture 1
Research Design

Information:

- O1: Pretest before giving Ginger aromatherapy
- X: Intervention by giving Ginger aromatherapy
- O2: Posttest after Ginger aromatherapy

Place and Time

The study was carried out at the Kersana Brebes Health Center. on Jalan Pemuda No.2, Ciampel Village, Kersana District, Brebes Regency. The research is planned to prepare proposals, collect data and reports, starting from March-August 2024.

Research Variables

According to Notoatmodjo (2018), a variable is a property, characteristic, or quantity that is mastered/obtained by a unit of study from an understanding of a certain concept.

1. Independent Variables. Independent variables affect or cause dependent variables to change or arise (Sugiyono, 2019). Ginger aromatherapy is the independent variable in this study.
2. Dependent variables. Related variables are variables that are influenced or the effects of independent variables (Sugiyono, 2019). The study focused on the dependent variables of nausea and vomiting experienced by pregnant women during the first trimester.

Population and Sample

Population

Population refers to the entirety of things and people in a research study that has specific features and attributes. The citation (Amin et al., 2023) is provided. The population under investigation comprises pregnant women in their first trimester receiving care at the Kersana Health Center. Data collection took place in May 2024 and involved a sample of 30 pregnant women.

Sample

A sample is a subset of the population that serves as a study's primary data source. Put, a sample is a subset of the population that is used to represent the full population. The citation (Amin et al., 2023) is provided. The sampling approaches employed in this study include Non-Probability Sampling, specifically accidental sampling. Accidental sampling is a way of selecting samples based on the availability or existence of respondents in the research environment. The respondents polled were those who were encountered or happened to be present in the Kersana Brebes Health Center in 2023. The sample size in this study consists of 15 individuals.

Data Collection Tools and Methods

Data Collection Tools

The data collection tools used are: PUQE-24 Sheet

The observation sheet was utilized to record alterations in the occurrence of nausea and vomiting in pregnant women during the initial trimester, from before the implementation of the intervention to the seventh day following the administration of ginger aromatherapy.

Data Collection Methods

Data collection is a procedure carried out in research, which can be carried out by several methods such as observation, interviews, questionnaires, and so on (Hasmi, 2016). Data collection was obtained directly from respondents through observation, interviews, and the filling out of the demography questionnaire and PUQE-24 questionnaire. Secondary data was obtained from data on pregnant women at the Kersana Health Center. The following are the steps to collect data in this study:

1. The researcher prepares a research proposal that has been approved by the supervisor and examiner.
2. Researchers and administrators of all research licenses, either from STIKes Muhammadiyah Cirebon or related parties.
3. Informed *consent* to all respondents who will be the sample in the study.

Data Processing and Analysis Methods

Data Processing

Data processing is carried out in stages as follows:

1. *Revision*. Efforts to verify the accuracy of the acquired or gathered data. Editing occurs either during the data-collecting phase or after the data has been gathered.
2. *Programming*. Coding is the process of assigning numerical codes to data that is organized into different categories. The inclusion of this code is crucial for computer-based processing and analysis.
3. *Processing*. Data processing activities so that the data that has been entered can be analyzed using a computer.
4. *Cleaning*. If errors are found at the time of data entry, data cleaning activities are carried out so that they can be corrected and assessed (score).

Data Analysis

The study employed both univariate and bivariate analysis. The univariate analysis examined the participants' attributes and the occurrence rate of nausea and vomiting both before and after the application of ginger aromatherapy. Bivariate analysis was conducted to assess the correlation between the occurrence of nausea and vomiting following the

administration of ginger aromatherapy.

Univariate analysis refers to the statistical analysis of a single variable at a time without considering the relationship between that variable and other variables. Univariate analysis was employed to examine the occurrence of nausea and vomiting, assess the variations in nausea and vomiting pre- and post-ginger aromatherapy, and calculate the average emesis gravidarum score before and after treatment using the mean. Bivariate analysis is the statistical analysis of two variables to determine their relationship.

The study utilized bivariate analysis to assess the impact of ginger aromatherapy on reducing the emesis gravidarum score in pregnant women during the first trimester of pregnancy. The research was conducted at the Kersana Health Center in 2024, employing the Paired Sample T-Test.

The results can be analyzed as follows:

1. If the $P\text{-value} < 0.05$ means that ginger aromatherapy effectively reduces the frequency of nausea and vomiting in pregnant women in the first trimester at the Kersana Health Center in 2024.
2. If the $P\text{-value} > 0.05$ means that ginger aromatherapy is not practical in reducing the frequency of nausea and vomiting in pregnant women in the first trimester at the Kersana Health Center in 2024

DISCUSSION

This study examines ginger aromatherapy's impact on nausea and vomiting in pregnant women during the initial trimester at the Kersana Health Center in 2024. The participants in this study consisted of 15 patients who were in the first trimester of pregnancy. This study aimed to investigate ginger aromatherapy's impact on nausea and vomiting in pregnant women during the initial trimester at the Kersana Brebes Health Center in 2024.

Univariate Analysis

Frequency of Nausea and Vomiting Before Ginger Aromatherapy

Table 1
Distribution of Nausea Frequency Before Giving Ginger Aromatherapy

Category	Frequency	Percentage (%)
No Nausea and Vomiting	0	0
Mild nausea and vomiting	0	0
Moderate nausea and vomiting	15	100
Nausea and vomiting	0	0
Total	15	100

According to the data in Table 5, the study found that all participants, specifically 15 participants (100.0%), had mild nausea and vomiting before receiving ginger aromatherapy.

Frequency of Nausea and Vomiting After Ginger Aromatherapy

Table 2
Frequency Nausea After Giving Ginger Aromatherapy

Category	Frequency	Percentage (%)
No Nausea and Vomiting	0	0
Mild nausea and vomiting	11	73,3
Moderate nausea and vomiting	4	26,7
Nausea and vomiting	0	0
Total	15	100

Table 6 indicates that the prevalence of nausea and vomiting following ginger aromatherapy was primarily modest, with 11 individuals (73.3%) reporting such symptoms.

Analyzed the relationship between ginger aromatherapy and the occurrence of nausea and vomiting in pregnant women during the first trimester at the Kersana Health Center.

Table 3
Effect of Ginger Aromatherapy on the Frequency of Nausea and Vomiting in
Pregnant Women in the First Trimester
at the Kersana Health Center

Intensity of Nausea and Vomiting	Mean	SD	N	Sig. (2. tailed)
Pre-test	3,00	0,000	15	0,001
Post-test	2,27	0,458		

According to the data in Table 7, the average frequency of nausea and vomiting prior to receiving ginger aromatherapy is 3.00, with a standard deviation of 0.000. After receiving ginger aromatherapy, the average intensity of nausea and vomiting is 2.27, with a standard deviation of 0.458. The Wilcoxon test results indicated a significant difference (p -value = 0.001, <0.005) between the pre-test and post-test of ginger aromatherapy on the frequency of nausea and vomiting in pregnant women during the first trimester at the Kersana Brebes Health Center in 2024. Therefore, it can be concluded that ginger aromatherapy reduces the frequency of nausea and vomiting in pregnant women during the first trimester at the Kersana Health Center.

Univariate Analysis

Frequency of Nausea and Vomiting Before Ginger Aromatherapy

The study's findings revealed that all 15 respondents (100.0%) in the first trimester of pregnancy suffered moderate nausea and vomiting prior to receiving ginger aromatherapy. Nausea and vomiting commonly occur throughout the first trimester of pregnancy, causing pain. The sensation of nausea results from elevated levels of the hormones estrogen and Human Chorionic Gonadotropin (HCG) within the body. Emesis gravidarum refers to nausea and vomiting that disrupt daily activities. However, if these symptoms occur daily and worsen the overall condition, it is called Hyperemesis Gravidarum. According to this hypothesis, the researcher posits that nausea and vomiting are a prevalent occurrence among women during the early stages of pregnancy. The severity of nausea and vomiting experienced by pregnant women in the first trimester can vary, ranging from no symptoms to mild symptoms, to moderate symptoms, and even to severe symptoms.

Frequency of Nausea and Vomiting After Ginger Aromatherapy

The findings indicated that the application of ginger aromatherapy resulted in mild nausea and vomiting for the majority of responders, specifically 11 individuals (73.3%).

Non-pharmacological therapy is a management approach that can be used to alleviate the discomfort of nausea and vomiting during the first trimester of pregnancy. Non-pharmacological therapy refers to a form of treatment that does not include drugs and is typically used in conjunction with medical treatment. Ginger aromatherapy is a supplementary therapy that can be used to alleviate nausea and vomiting in pregnant women. Aromatherapy is a rapidly growing form of supplementary therapy due to its cost-effectiveness and accessibility. It is the practice of utilizing natural plant materials to administer pharmaceutical medications. Aromatherapy involves the use of essential oils to enhance physical and psychological well-being. Ginger is a potent herbal remedy that effectively alleviates coughs and sore throats, reduces cholesterol levels, relieves headaches, treats rheumatism, aids in weight loss, promotes heart health, alleviates nausea and digestive issues, prevents intestinal inflammation, enhances the immune system, and treats asthma. (Pujiasmanto, 2021).

According to this explanation, the researchers determined that ginger aromatherapy can decrease nausea and vomiting during the initial three months of pregnancy. The majority of pregnant women in the study experienced a progressive reduction in nausea and vomiting, starting on the third day following the administration of ginger aromatherapy. This improvement was confirmed through direct observation by researchers, and the participants themselves reported feeling significantly better and being able to resume their usual activities after receiving the ginger aromatherapy treatment.

Analyzed the relationship between ginger aromatherapy and the occurrence of nausea and vomiting in pregnant women during the first trimester at the Kersana Health Center.

The researcher did a Wilcoxon Test and found a p-value of 0.001 (<0.005), leading to the acceptance of H_a . There is a correlation between administering ginger aromatherapy and the occurrence of nausea and vomiting in pregnant women during the initial three months of pregnancy at the Kersana Brebes Health Center in 2024. The findings of this study align with a previous investigation conducted by Pramesti in 2020 on the impact of Ginger Aromatherapy on Nausea and Vomiting (Emesis) in expectant mothers. The results were highly significant, indicating a notable reduction in nausea and vomiting after administering ginger aromatherapy. Ginger aromatherapy has a direct impact on the occurrence of nausea and vomiting in pregnant women.

Based on researchers' assumption and supported by prior theory, ginger aromatherapy has the potential to decrease the occurrence of nausea and vomiting in pregnant women because of its invigorating scent. Additionally, it can contribute to enhancing or preserving health, stimulating enthusiasm, and igniting romance. Ginger aromatherapy can revitalize and soothe the spirit while promoting the process of recovery. Pregnant ladies suffering from nausea and vomiting may seek pleasant scents, and ginger aromatherapy is both accessible and inexpensive. Administering daily ginger aromatherapy for 15 minutes proves to be a more effective and efficient method for alleviating nausea and vomiting in pregnant women. The frequency of inhalation directly correlates with the magnitude of benefits experienced by the mother in reducing her symptoms (Romauli, 2023).

Research Limitations

1. Constraints of Location and Duration. Ginger aromatherapy was administered daily at the Kersana Brebes Health Center for seven consecutive days. However, the research was not conducted optimally due to the disruption of housewives' morning activities and the blocked distance between their homes and the Kersana Health Center.
2. Constraints on population size. This study exclusively focused on pregnant women in their first trimester who suffered from nausea and vomiting.

CONCLUSION

Conclusion

The research conducted by researchers at the Kersana Brebes Health Center in 2024 examined the impact of ginger aromatherapy on the frequency of nausea and vomiting in 15 pregnant women during the first trimester of pregnancy. The findings indicate that all respondents experienced moderate nausea and vomiting before receiving ginger aromatherapy. After receiving ginger aromatherapy, the majority of responders reported experiencing minor nausea and vomiting.

The study investigates the impact of administering ginger aromatherapy on nausea and vomiting in pregnant women during the initial trimester at the Kersana Brebes Health Center in 2024.

Suggestion

1. Targeting pregnant individuals. Pregnant women who suffer from nausea and vomiting during pregnancy are advised to promptly seek medical advice to prevent disruptions to

their daily activities and potential health issues, including dehydration. An independent method recommended by healthcare professionals to control nausea and vomiting in pregnant women, particularly during the first trimester, is the use of ginger aromatherapy. This can help lessen the occurrence of these symptoms.

2. Acting on behalf of the Health Center. The health center should consider expanding and enhancing the availability of aromatherapy as a complementary care option for pregnant women suffering from nausea and vomiting. Aromatherapy can serve as an alternate non-pharmacological therapy to accompany medical treatments.
3. For the subsequent researcher. Future researchers should aim to expand their research by including a broader range of research participants, namely pregnant women who experience nausea and vomiting. This would allow for a more comprehensive investigation, encompassing pregnant women beyond only the first trimester.

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