


The effect of giving lemon aromatherapy to first trimester pregnant women with emesis gravidarum at PMB klinik Santa Elisabeth Kefamenanu

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Article Info	ABSTRACT
<p>Keywords: Morning Sickness, Lemon, Emesis, Pregnant, Aroma Therapy</p>	<p>Nausea and vomiting in pregnancy is commonly called morning sickness, experienced by about 70-80% of pregnant women and is a phenomenon that often occurs at 5-12 weeks of pregnancy. Lemon essential oil (Citrus Lemon) is one of the herbal oils that is considered the safest medicine in pregnancy. The purpose of this research is to determine the effect of giving lemon aromatherapy to first trimester pregnant women with emesis gravidarum. This study uses a quasi experimental design or pseudo-experiment method using a pretest and posttest design with control. In this design before the treatment is given, the sample is first given a pretest (initial test) and after the experiment the sample is given a posttest (final test). This design is used in accordance with the objectives to be achieved, namely to determine the effect of lemon aromatherapy on the frequency of emesis in first trimester pregnant women. The results of the analysis show the effect of giving lemon aromatherapy to reduce nausea and vomiting in pregnant women at the Santa Elisabeth Kefamenanu Clinic, where the p value = 0.000 (<0.05) is obtained. As well as producing the conclusion that there is a relationship between giving lemon aroma therapy to pregnant women in the first trimester.</p>
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INTRODUCTION

Pregnancy is a continuous chain and consists of ovulation, migration, spermatozoa and ovum, conception and growth of the zygote, nidation (implantation) in the uterus, formation of the placenta, and growth and development of the products of conception until term. (A. Nabuasa, S. Mudrikatin, E. S. Hendarti, 2019; Simamora, 2019). Pregnant women often experience nausea and vomiting at the beginning of the third month which is influenced by the gastrointestinal system, by the influence of hormones and intestinal pressure. (Adiansyah et al., 2021; Mevrica Yohand Santiko, 2022; Rahayu & Sari, 2022). The influence of increased estrogen causes the production of stomach acid to increase and causes saliva secretion to become more acidic and more abundant, the stomach area feels hot, nausea and dizziness or headaches occur, especially in the morning, which is called morning sickness. (Anggraini et al., 2022; Anindita, 2021; Reius, 2021; Zahrani, 2021).

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Information

X1: Group of Pregnant Women before being given Lemon Aromatherapy Inhalation

X11: Group of Pregnant Women after being given Lemon Aromatherapy Inhalation

Time and Place of Research

1. Research time

The research was conducted for 3 days divided into 5 groups (1 group consisting of 4 respondents who were given intervention 5 times in 3 days) with the following activities:

- a. First day: Pretest + intervention I + intervention II
- b. Second day: Intervention III + intervention IV
- c. Third day: Intervention V + Post Test

2. Research Place

3. At the Santa Elisabeth Kefamenanu Clinic

Population and Sample

1. Population

Population is a generalized area consisting of objects or subjects that have certain quantities and characteristics determined by the researcher. So the population in this study was all pregnant women in the first trimester at the Santa Elisabeth Kefamenanu Clinic.

2. Sample

The sample is a portion of the research units in the population. Sampling was carried out using Purposive Sampling, which is a sampling technique taken deliberately. The subjects (pregnant women) in this study were the entire population who met the inclusion and exclusion criteria.

3. Sampling technique

Sampling in this study refers to the following inclusion criteria and exclusion criteria:

inclusion criteria

- a. First trimester pregnant women who experience emesis gravidarum
- b. Mother who is willing to be a respondent
- c. Pregnant women who do not experience respiratory tract infections
- d. Pregnant women who do not have influenza
- e. Pregnant women who do not consume B6

Exclusion criteria:

- a. First trimester pregnant women who do not experience emesis gravidarum
- b. Mothers who were willing to be respondents or withdrew during the research
- c. Pregnant women who experience respiratory tract infections
- d. Pregnant women who experience influenza
- e. Pregnant women who consume B6

4. Research Sample Size

The minimum sample size calculation was based on the total population, namely, the total number of pregnant women who experienced emesis gravidarum at PMB Darti

and PMB Inez, namely 30 patient respondents with Emesis Gravidarum. So the number of samples needed in this research is 30 respondents.

Data collection

1. Data collection technique

In this study, researchers used primary and secondary data for data collection. Primary data is data obtained or collected in the field by the person conducting the research or the person concerned conducting the research. The primary data in this study is pregnancy information data or pregnancy medical records at PMB Darti and PMB Ines.

Then secondary data is by interview. An interview is a method used to collect data, where the researcher obtains information or provides information verbally from someone who is the target of the researcher, or has a conversation face to face with that person (Notoatmodio. 2012)²⁸. In this study, interviews were conducted with pregnant women in the first trimester at PMB Darti and PMB Ines.

2. Data Collection Procedures

- a. Approach potential respondents according to the inclusion criteria and explain the aims and objectives of the research
- b. After the mother agreed to participate as a respondent in the research, the researcher ensured the legality of the agreement by signing an informed consent letter.
- c. Assess the frequency of emesis in first trimester pregnant women before giving lemon aromatherapy using the INVR instrument by assessing the intensity of nausea/vomiting 12 hours before giving lemon aromatherapy.
- d. Researchers prepare the tools and materials that will be used to make aromatherapy, namely by dripping 2-3 drops of the solution that has been made on a tissue, placing the tissue near the respondent's nose. Do this for approximately 10-15 minutes. Instruct respondents to inhale the lemon aromatherapy that has been given with a distance of 2 cm between the tissue and their nose.
- e. Observe for \pm 10 minutes and ensure that there is no negative response to the respondent.
- f. Assessing the frequency of emesis in first trimester pregnant women after administering lemon aromatherapy with the INVR instrument at PMB Darti and PMB Ines

3. Research Instrument

- a. SOP (Standard Operating Procedure) for Providing Lemon Aromatherapy
- b. To obtain data on first trimester pregnant women who experienced emesis using an interview guide.
- c. To assess the effect of giving lemon aromatherapy on the frequency of emesis using the Rhodes INVR (Rhodes Index for Nausea, Vomiting, and Retching) instrument.
- d. Lemon Aromatherapy
- e. Tissue as a medium for providing aromatherapy..

- f. Stopwatch to measure how long the treatment takes.

Research ethics

The ethical issue of midwifery research is a very important problem in research, considering that research is directly related to humans, the ethical aspect of research must be considered. Research ethics aims to ensure the confidentiality of respondents' identities, protect and respect respondents' rights by submitting an informed consent statement. Before signing the consent letter, the researcher explains the title of the research, research objectives, and benefits of the research. Researchers will guarantee the confidentiality of respondents' identities, where the data obtained will only be used for research purposes and when complete, the data will be destroyed. Ethical issues that must be considered include the following:

1. Informed Consent

Informed consent is a form of agreement between researchers and research respondents by providing a consent form. Informed consent was given before the research was carried out by providing a consent form to become a respondent. The purpose of informed consent is for the subject to understand the purpose, objectives of the research, and know its impact. If the subject is willing, then they must sign a consent form. If the respondent is not willing, then the researcher must respect it.

2. Anonymity (no name)

The issue of midwifery ethics is a problem that provides guarantees for the use of research subjects by not providing or including the names of respondents on the measuring instrument sheet and only writing the code on the data collection sheet or research results that will be presented.

3. Confidentiality (Confidentiality)

This problem is an ethical problem by providing a guarantee of confidentiality of research results, both information and other issues. All information that has been collected is guaranteed to be kept confidential by the researcher.

Data Processing Techniques

Data processing techniques are a method or method for converting data into a form that can be used and desired. Where this conversion is carried out using a predetermined sequence of operations, either manually or automatically. Data processing techniques certainly have a purpose when applying them to research. Data processing in research goes through five general stages as follows:

1. Editing

Editing is an effort to re-check the correctness of the data or questionnaire form obtained or collected. Editing can be done at the data collection stage or after the data has been collected. The editing process in this research is to re-check the questionnaire sheets that have been filled in. The checks carried out include completeness, clarity, relevance and consistency of the respondents' answers. Incomplete data will be returned to the respondent and to be filled in again at that time.

2. Coding

Coding is the activity of giving numerical codes (numbers) to data consisting of several categories. Giving this code is very important when processing and analyzing data using a computer. Usually when assigning codes, their meanings are made in one book (code book) to make it easier to see the location and meaning of a code for a variable.

3. Transferring

Data that has been coded is entered into the existing mastersheet.

4. Tabulating

After the data was collected, the researcher created a frequency distribution table as an initial step in processing. General data and special data were obtained. From these results, general data was grouped, namely age, parity, occupation and latest education. Then within the custom data grouping.

Data analysis technique

The collected univariate and bivariate data will be analyzed and interpreted further to test the hypothesis. In this research, to analyze the data that has been collected. Data analysis carried out:

1. Univariate Analysis

Univariate analysis is an analysis carried out on each variable from the research results. In general, this analysis only produces the distribution and presentation of each variable. The data is presented in the form of a frequency distribution table as input material. The analysis in this study was the level of frequency of nausea and vomiting in pregnant women in the first trimester before inhalation intervention using lemon aroma therapy.

The homogeneity test is to determine the equality of variations between groups. The variables that were tested for homogeneity were the characteristics of the mother's age, parity, gestational age of the respondent. The age variable was measured using the independent T test, while the characteristics were measured using the Chi Square test.

2. Bivariate Analysis

Difference test analysis is data analysis carried out on two variables that are thought to have a relationship or correlation. Analysis of different tests will describe the differences in mean knowledge before and after being given an inhalation intervention using lemon aroma therapy at the Penjaringan 1 Village Health Center, North Jakarta. Analysis of different tests was carried out using a statistical dependent sample t-test (paired t test) to determine the difference in the level of frequency of nausea and vomiting in knowledge before and after the intervention. Statistical tests for all analyzes were analyzed with a weak level of significance of 95% (alpha 0.05). If it does not meet the requirements, an alternative test (non-parametric test) is used, namely the Wilcoxon Signed Rank Test. If the significance value obtained is less than 0.05 ($p < 0.05$), it shows that there is a significant difference between the pretest and posttest results in the group who regularly inhale lemon aroma therapy and who do not routinely inhale lemon aroma therapy.

RESULTS AND DISCUSSION

Univariate Analysis

After the data has been collected, the data is checked for completeness and then processed to obtain data management research results using the SPSS program in the form of univariate analysis. In the following, the researcher will present the data analysis for each variable by producing a percentage frequency distribution. The data management results are presented as follows. :

Table 1. The average frequency of mothers experiencing nausea and vomiting

age	Frequency	Percentage
20-35 years	27	90.0
< 20 years and > 35 years	3	10.0
amount	30	100.0

*) data source: Author's data processing results

Based on table 1, it shows that the mother's age is 20-35 years, 27 or 90%, while the age is <20 years and . 35 years, which is 3 or 10%. The average age of mothers who experience nausea and vomiting is 20-35 years.

Table 2. Average frequency of maternal parity experiencing nausea and vomiting

Parity	Frequency	Percentage
Primipara	22	73.3
Multiparous	8	26.7
amount	30	100.0

*) data source: Author's data processing results

From table 2 it shows that there were 22 primigravida mothers or 73.3%, and there were 8 multiparous mothers or 26.7%. The average number of mothers who experience vomiting is > 50% in mothers with primiparous pregnancies.

Table 3.The average frequency of gestational age of mothers who experience nausea and vomiting

Gestational Age	Frequency	Percentage
1-4 mg	11	36.7
5-8 mg	5	16.7
9-12 mg	14	46.7
amount	30	100.0

*) data source: Author's data processing results

From table 3 it shows that the gestational age of 1-4 weeks is 11 (36.75) mothers whose gestational age is 5-8 weeks, which is 5 or 16.7%, while the gestational age of mothers who are 9-12 weeks is 14 or 46.7%. %.

Table 4. The average distribution of mothers who experience nausea and vomiting before being given lemon aroma therapy

before	Frequency	Percentage
light	15	50.0
currently	13	43.3
heavy	2	6,7
amount	30	100.0

*) data source: Author's data processing results

Based on table 4, it shows that mothers who experienced mild nausea and vomiting were 15 (50.0) and moderate ones were 13 (43.3%) while those who experienced severe nausea were 2 (6.7%)

Table 5. Average frequency distribution of mothers after being given lemon aroma therapy

Number of nausea and vomiting	Frequency	percentage
1 time	21	70.0
2 times	9	30.0
Amount	30	100.0

*) data source: Author's data processing results

From table 5, it shows that after being given aromatherapy, on average, mothers only experienced nausea, namely 21 mothers who experienced nausea once or 70% and 9 mothers who experienced nausea only twice or 30.0%.

Bivariate Analysis

Bivariate analysis was carried out to determine the effect of hyperemesis gravidarum before and after the lemon aromatherapy intervention was given. The bivariate test results can be seen in the table below:

Table 6. Normality test results

group	sig	condition	information
pretest	0.126	sig . 0.005	normal
post test	0,000		abnormal

*) data source: Author's data processing results

Based on the data in table 6, data analysis was carried out using the Shapiro-Wilk normality test, it was found that the pre-test value had a normal distribution of 0.126 and the post-test value had an abnormal distribution, namely 0.000. Next, the Dependent T test is carried out.

Table 7. Analysis of giving lemon aromatherapy to mothers with emesis, nausea and vomiting after and before

Giving aroma therapy	n	mean	elementary school	95% c.i	p value
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Pre-test	30	11.23	1.9	9.3- 10.56	0,000
Post test	30	1.3	0.4		

T-Test

*) data source: Author's data processing results

Table 7 shows that providing aromatherapy can reduce the frequency of nausea and vomiting by a difference of 1.5. before giving aroma therapy it was 11.2 and after giving aroma therapy it became 1.3. The results of the T - test obtained a P value of 0.000, meaning that statistically there was a significant difference between the administration of aroma therapy before and after the administration of lemon aroma therapy.

Analysis of Results

Univariate Analysis

The results of the univariate analysis in this study showed that the characteristics of the respondents were as follows. Based on table 4.1, the results of the analysis show that the mother's age is 20-35 years, 27 or 90%, while the mother's age is <20 years and . 35 years, which is 3 or 10%. The average age of mothers who experience nausea and vomiting is 20-35 years.

This means that almost all respondents are of healthy and safe reproductive age (no risk). At a healthy reproductive age, most women can undergo pregnancy, childbirth and postpartum periods in optimal conditions so that the mother and baby are healthy.

Nausea and vomiting usually occur at the age of under 20 years due to insufficient physical, mental and social function maturity of the expectant mother, which can lead to doubts about the body, love and care and upbringing of the child she will give birth to. Nausea and vomiting that occurs over the age of 35 years is caused by psychological factors, where the mother is not ready to get pregnant or even doesn't want to be pregnant again so she will feel very depressed and cause stress for the mother.

The age factor is often associated with a woman's mental readiness to become a mother. This mental readiness is usually lacking in young mothers. At the age of over 35 years, reproductive organs and physiological functions decrease compared to when they are 20-35 years old, based on this, it is highly discouraged to have a pregnancy at the age of < 20 and > 35 years.

The time for healthy reproduction at a safe age for pregnancy and childbirth is 20-35 years. The results of the analysis of maternal age and the incidence of emesis gravidarum at the Santa Elisabeth Kefamenanu Clinic 2023 can be concluded that the majority of people who experience emesis gravidarum are the safe age, namely 25-28 years. Meanwhile, the minority who experience emesis gravidarum are aged < 20 years and > 35 years. In conclusion, not all cases of emesis gravidarum occur at ages < 20 and > 35 years which are at risk, but at the safe age of 20-35 years you can also experience emesis gravidarum.

Based on the research results, it can be seen that there were 22 pregnancies in primigravida mothers or 73.3%, and there were 8 pregnancies in multiparous mothers or 26.7%. The average number of mothers who experience vomiting in primiparous

pregnancies is > 50%. Most primigravida pregnancies experience emesis gravidarum more often because primigravidas are affected by levels of the pregnancy hormone HCG. Because in preparous pregnancies, the increase in hormonal levels exceeds that in multigravida women.

Women with multigravida pregnancies are able to adapt to these pregnancy hormones because they already have experience with pregnancy and birth. So the nausea and vomiting of primigravidas is usually higher than that of multigravidas. that the average gestational age of mothers who experience nausea and vomiting is 7.9 weeks with a variation of 4.3. The youngest mother's gestational age was 2 weeks, while the oldest gestational age was 15 weeks. As many as 95% believe that the average gestational age of mothers who suffer from nausea and vomiting is 6.3 weeks to 9.5 weeks, while the variables that influence hyperemesis gravidarum are gestational age with p value = 0.002, parity with p value = 0.011, and employment. with p value = 0.016. The difference in p value between these variables can be used as evidence that the factor that has the most influence on hyperemesis gravidarum is the job with the largest Exp (B) value. Gestational age or gestational age greatly influences the incidence of hypermeemision in pregnant women.

Bivariate Analysis

Based on table 4.2, the results showed that there were 22 primigravida mothers or 73.3%, and there were 8 multiparous mothers or 26.7%. The average number of mothers who experience vomiting is > 50% in mothers with primiparous pregnancies.

There was a significant reduction in the level of Emesis Gravidarum in trimester pregnant women at the Santa Elisabeth Kefamenanu Clinic. There is a theory which states that there was a decrease in the average intensity of nausea and vomiting in respondents before the intervention to 11.42 and after the intervention it decreased to 8.14. There is a difference in the average intensity of nausea and vomiting of respondents between before and after giving lavender aromatherapy with an average difference of 2.8 and a p-value = 0.001, meaning that there is a significant difference in the average intensity of nausea and vomiting of pregnant women between before and the intervention day. The first was giving lavender aromatherapy where there was a decrease after the intervention. Besides that, the average value of nausea and vomiting before intervention was 8.5. Meanwhile, after the intervention there was a decrease to 1.4. Before the intervention was carried out in the experimental group, the average score was 13.18, while after the intervention was given, the average score was 7.65.

Meanwhile, in the second intervention, there was a decrease in the average value, namely 6.0 with a difference of 5.2, this proves that there is a significant difference between before and after giving lemon aromatherapy. Meanwhile, on day 3 of the intervention, it was shown that giving aromatherapy could reduce the frequency of nausea and vomiting by 7.5, it was found that before giving aromatherapy the amount was 11.2, down to 3.6 after giving aromatherapy. The results of the T test obtained a P value of 0.001, meaning that there was a statistically significant difference in the frequency of nausea and vomiting in mothers before and after being given aromatherapy on the third

day. Giving aromatherapy can reduce the frequency of nausea and vomiting on day 4 by 9.3, which was found before giving aromatherapy by 11.2 and after giving aromatherapy it fell to 1.9. With the 5th intervention, the average nausea and vomiting decreased by 1.5 (after the 5th intervention was given). The results of the T test obtained a P value of 0.001, meaning that statistically there was a significant difference between the administration of aroma therapy before and after on the fourth day. The results of the T Test obtained a P value of 0.001, meaning that statistically there was a significant difference in the mother before and after giving aromatherapy on the fifth day using the T – Test statistical test which has the condition that the data is not normally distributed. After analyzing, based on the research results, it can be seen that the average value before being given aromatherapy was 11.23. and the average after being given aromatherapy was 1.5 with the difference before and after the intervention being 9.6 and the p-value obtained was 0.000 with a level of significance $\alpha = <0.05$. Because the p-value is $.000 < 0.05$, the "Hypothesis is accepted".

Based on the category of nausea and vomiting felt by each respondent in this study, it varied, including mild and moderate nausea and vomiting. This is supported by the theory which states that nausea and vomiting is influenced by psychological factors including unwanted pregnancy, feelings of anger, guilt, anxiety, fear which will increase the severity of nausea and vomiting. After being given lavender aromatherapy intervention, respondents said they felt calm and comfortable. They also said they could smell the aroma of cooking which previously caused nausea and the urge to vomit. Several respondents said that the frequency of nausea and vomiting they experienced had decreased significantly in the morning, afternoon and evening. The research results showed that after being given lavender aromatherapy, several respondents experienced a decrease in the level of nausea and vomiting from moderate to mild, from mild to not experiencing nausea and vomiting. This indicates that lavender aromatherapy can reduce the frequency of nausea and vomiting experienced by respondents.

Providing lemon aromatherapy can provide a comfortable effect and reduce levels of anxiety and stress and this condition can reduce the intensity of nausea and vomiting in pregnant women in the first trimester, where psychological problems (stress) is a condition that worsens nausea and vomiting in pregnant women. The mechanism for reducing anxiety and stress by inhaling lemon aromatherapy is through the smell of the active volatile compounds and linalool contained in lavender aromatherapy which stimulates the parts of the brain that are responsible for stimulating the formation of effects caused by aromatherapy. When aromatherapy is inhaled, the volatile molecules of the oil are carried by the air to the "roof" of the nose where soft cilia emerge from the receptor cells. When these molecules attach to these hairs, an electrochemical message will be transmitted through the bulb and olfactory bulb into the limbic system. This will stimulate memory and emotional responses.

The results of this research obtained a p-value (0.000) $< \alpha$ (0.05), which is a significant difference after giving lavender aromatherapy. And the same thing from the results of data analysis showed a p-value of 0.000, which means that there is an effect of giving lavender aromatherapy on reducing nausea and vomiting in pregnant women.

The decrease in the average frequency of nausea and vomiting is due to aromatherapy being able to reduce the frequency score of nausea and vomiting in pregnancy because the smell is fresh and helps improve or maintain health, uplifts enthusiasm, passion, refreshes and soothes the soul, and stimulates the healing process. When essential oils are inhaled, the molecules enter the nasal cavity and stimulate the limbic system in the brain. The spinal system is an area that influences emotions and memory and is directly related to the adrenals, pituitary gland, hypothalamus, parts of the body that regulate heart rate, blood pressure, stress, memory, hormonal balance and breathing. So lemon aromatherapy is good for reducing nausea and vomiting. The results of this research also reveal that giving lemon aromatherapy inhalation can reduce nausea and vomiting in pregnant women in the first trimester at the Santa Elisabeth Kefamenanu Clinic.

CONCLUSION

Based on research results about The Effect of Lemon Aromatherapy to Reduce Nausea and Vomiting in Trimester Pregnant Women First with hyperemesis gravidarum at the Santa Elisabeth Kefamenanu Clinic where: 1). Before being given treatment, it showed that the average score of respondents in the intervention group had a mean of 11.23 with a standard deviation of 1.9 from 30 respondents. On average, nausea and vomiting are at least 8 times a day and the maximum is 15 times. On average, mothers experience nausea and vomiting 10 to 11 times a day. 2). After being given treatment, it shows that the average value of the respondents has a mean of 1.3 with a standard deviation of 0.4, where the number of mothers who experience nausea and vomiting on average is only once a day, 21 respondents and those who experience nausea and vomiting twice, there are 2 respondents. 3). The results of the T-test obtained a P value of 0.000, meaning that statistically there was a significant difference in pregnant women before and after giving lemon aromatherapy.

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