

# Effectiveness of Lemon Aromatherapy on Nausea and Vomiting in Pregnant Women in the First Trimester at Paguyaman Health Center

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## ABSTRACT

Nausea and vomiting are common symptoms in the first trimester or early pregnancy, 50-90% of mothers experience nausea and vomiting in the first trimester. The purpose of this study was to determine the effect of lemon aromatherapy on nausea and vomiting in pregnant women in the first trimester at the Paguyaman Health Center. The research design used was Quasi Experimental with the Pre and Post Test. The sample in this study was 16 pregnant women in the first trimester with the Purposive Sampling technique. The results of the Paired T-test were obtained after administration of lemon aromatherapy, most respondents, namely 13 people (81,2) did not experience nausea and vomiting, and 3 respondents (18,8) experienced nausea and vomiting, the p-value test was 0.003 (<0.005). The conclusion of this study is that there is an effect of aromatherapy (lemon) on nausea and vomiting in pregnant women in the first trimester. It is recommended that this aromatherapy method (lemon) be used as a reference in midwifery care for pregnant women, especially to reduce nausea and vomiting.

## I. Introduction

Pregnancy is a physiological process that causes changes in the mother and her environment. When pregnancy occurs, the systems in a woman's body undergo changes that affect the growth and development of the fetus during the pregnancy process. Although pregnancy and childbirth are physiological processes, complications can arise at any time and have a major impact on the mother and her fetus (Didhi & Sudjiwanati, 2018).

Nausea and vomiting in pregnancy or what is known as Nausea Vomiting in Pregnancy (NVP) is one of the most common complaints among women during pregnancy. Nausea and vomiting in pregnancy is also known as hyperemesis gravidarum (HG). Experienced by around 70-80% of pregnant women and is a phenomenon that often occurs at 5-12 weeks of pregnancy. This nausea and vomiting usually causes symptoms such as nutritional disorders, dehydration, weakness, weight loss, and electrolyte imbalance (Tri Susanti & Taqiyah, 2021).

The use of aromatherapy is a method of treating a problem that is cheap, safe, effective and does not cause negative side effects. Aromatherapy that is usually used and safe during pregnancy is ginger, grapes, lime, sweet orange, and lemon. For pregnant women, lemon aromatherapy can reduce nausea and vomiting. In fact, lemons have anti-inflammatory, antibacterial and anticancer properties (Rambod et al., 2023). The substances contained in lemons are essential oils that can help stabilize the nervous system and provide a calming effect for anyone who inhales them (H. Fitria et al., 2023). In addition, this treatment does not cause side effects and does not endanger the condition of the



mother or fetus. Aromatherapy using the sense of smell is one way to connect nerve receptors with the brain channels so that the effects can be directly felt by pregnant women who experience nausea and vomiting. The use of essential oils or pure oil extracts to improve or maintain health, and can improve mood (Malesalroh & Putri, 2019).

According to a study entitled the use of lemon aromatherapy in reducing nausea and vomiting in pregnant women, it was concluded that the most effective dose of lemon aromatherapy was given as much as 3-5 drops of 1 ml inhaled for 5-10 minutes, given when nausea and vomiting appear (Shofial & Khofiyah, 2020).

Another study also revealed that lemon aromatherapy is effective in reducing nausea and vomiting in pregnant women at PMB NS Jimbalran. The application of lemon aromatherapy can reduce the level of nausea and vomiting in PMB NS Jimbalran from an average of 8.69% to mild at 4.56% (Mujalyati et al., 2022). According to a preliminary study conducted in September 2024, there were around 42 pregnant women who experienced nausea and vomiting. Research on the lemon aromatherapy method (citrus lemon) for nausea and vomiting has never been conducted at the Palguyalman Gorontalo Health Center, most of the actions taken by mothers to overcome nausea and vomiting are by taking medication to reduce nausea. Therefore, researchers are interested in conducting a study entitled "The Effectiveness of Giving Lemon Aromatherapy to Nausea and Vomiting in Pregnant Women in the First Trimester at the Palguyalman Health Center".

## II. Methods

The location of this research was conducted at the Palguyalman Health Center, Gorontalo Regency. The research process was carried out from September to October 2024. The research design in this study was Pre Experimental with the design used being the One Group Pre Test Post Test Design. The population in this study were all pregnant women in the first trimester at the Palguyalman Health Center, Gorontalo Regency. Sampling in this study amounted to 16 samples, carried out by purposive sampling by determining the sample according to the inclusion criteria and exclusion criteria. The instrument used in this study was a questionnaire according to the Rhodes Index Nausea Vomiting and Retching (INVR). The research analysis consisted of univariate and bivariate analysis, to test the hypothesis using a nonparametric statistical test, namely the Paired T-test.

## III. Results and Discussion

### Result

**Table 1. Respondent characteristics at the Palguyalman Health Center, Gorontalo Regency**

Mother's Age		
<20 years	4	25.0
>21 years	12	75.0
Total	16	100.0
Mother Education		
SD-SMP	1	6.2
SMA-PT	15	93.8
Total	16	100.0
Mother's Job		
Doesn't work	12	75.0
Work	4	25.0

Total	16	100.0
<b>Aromatherapy</b>		
Influenial	16	100.0
<b>Condition of Pregnant Women</b>		
Nausea and vomiting	3	18.8
No nausea vomiting	13	81.2
Total	16	100.0

From table 1 above, most of the 12 respondents (75%) were >21 years old and a small number of 4 respondents (25%) were <20 years old. Most of the 15 respondents (93.8%) had a high school-college education and 1 respondent (6.2%) had an elementary school-junior high school education. Most of the 12 respondents (75%) were unemployed and 4 respondents (25%) were employed. All 16 pregnant women (100%) who were given aromatherapy had an effect. Most of the 13 respondents (81.2%) experienced normal conditions without nausea and vomiting and a small number of 3 respondents (18.8%) experienced nausea and vomiting.

**Table 2. Analysis of Research Results on the Effectiveness of Giving Lemon Aromaltherapy on Naluseal alnd Vomiting in Pregnalnt Women in the First Trimester alt the Palguyalmaln Health Center**

Information	Pregnant mother		Total
	of		
Effects			
aromatherapy	3	13	16
Total	3	13	16
Paired T Test			0,003

Based on table 2 above, it was found that most of the 13 respondents with pregnant women who were given aromatherapy did not experience nausea and vomiting and a small portion of 3 respondents who were given aromatherapy experienced nausea and vomiting and the results of the Paired T-test obtained 0.003 (p-value <0.05) which means Ho is rejected and Ha is accepted. There is a Relationship between the Effectiveness of Lemon Aromatherapy on Nausea and Vomiting in Pregnant Women in the First Trimester at the Paguyaman Health Center.

**Dissscusion**

**Analysis of the Results of the Study on the Effectiveness of Lemon Aromaltherapy for Nausea and Vomiting in Pregnant Women in the First Trimester at the Paguyaman Health Center**

Based on the results of the study in table 1. at the Paguyaman Heallth Center, Gorontalo Regency, alt the beginning before being given lemon aromaltherapy (citrus lemon) it wals found that the majority of respondents experienced nausea and vomiting during pregnancy (81.2) 3 people, and (18.8) 13 people did not experience vomiting during pregnancy. Factors that influence nausea and vomiting such as hormonal, psychosocial, work problems and gravidal status usually often affect nausea and vomiting which triggers the condition of pregnalnt women to get worse if not resolved. Most pregnalnt women who experience nausea and vomiting are triggered by the mother feeling tired, not getting enough rest and not being able to adapt to the hormonal changes that occur during pregnancy (Damayanti et al., 2022).

Based on the results of the study in table 2. at the Paguyaman Health Center, Gorontalo Regency, at the beginning before being given lemon aromatherapy (citrus lemon)

it was found that the majority of respondents experienced nausea and vomiting during pregnancy (81.2) 3 people, and (18.8) 13 people did not experience vomiting during pregnancy. This is due to the presence of lemon aromatherapy (citrus lemon) and the feeling of comfort and relaxation that the mother gets. At least after they get lemon aromatherapy, it can reduce the nausea and vomiting they experience (Mardikaningtyas & Kartasura, 2023). Giving lemon aromatherapy helps mothers feel fresher, more relaxed, and more comfortable during pregnancy (A. Fitria et al., 2021). Aromatherapy is a non-pharmacological therapy. Currently it is starting to be widely used in the UK and Europe, with availability reported at 76% in German obstetric departments, aromatherapy has recently been introduced to US hospitals and clinics. Lemon essential oil contains 66-80% limonene, geranyl acetate, nerol, linalyl acetate,  $\beta$  pinene 0.4–15%,  $\alpha$  pinene 1-4%, terpinene 6-14% and myrcen. Chemical compounds such as geranyl acetate, nerol, linalyl acetate, have antidepressant, antiseptic, antispasmodic, sexual arousal enhancing and mild sedative effects (Sudirman & Agustin, 2021).

This study is in accordance with the study conducted by (Cholifah & Eka Nuriyana, 2018) entitled "Lemon Aromatherapy Reduces Nausea and Vomiting in Pregnant Women TM 1" that the results of this study showed an effect indicating that the frequency of nausea of respondents on average before and after giving aromatherapy had a significant difference with a p-value of  $0.003 < 0.05$ .

Other previous researchers also showed the effect of electric lemon aromatherapy on nausea and vomiting in pregnant women in the first trimester with a significant value of p-value  $0.005 < 0.05$  (Alfrialanti & Hudal Rahendzal, 2020).

According to the researchers themselves, nausea and vomiting in pregnancy are influenced by hormonal changes in the endocrine system that occur during pregnancy, mainly caused by high fluctuations in HCG (human chorionic gonadotrophin) levels, when given lemon aromatherapy (citrus lemon) for 5-10 minutes for 6 days can reduce nausea and vomiting in mothers, because by giving lemon aromatherapy can help mothers become more relaxed and comfortable and can reduce nausea and vomiting during pregnancy. Giving lemon aromatherapy can also give individuals self-control when they feel nauseous and vomit. This happens because lemon aromatherapy is a type of aromatherapy that is safe for pregnancy and childbirth which reduces nausea and vomiting naturally.

#### IV. Conclusion

Before being given lemon therapy intervention, a small number of respondents, only (18.8) experienced nausea and vomiting, and most respondents (81.2) did not experience nausea and vomiting. After being given lemon therapy intervention, a small number of respondents, only (18.8) 3 people experienced nausea and vomiting, and most respondents (81.2) 13 people did not experience nausea and vomiting. With the results of the Paired T-test, a p value of  $0.003 < 0.05$  was obtained, which means that there is an effect of giving lemon radiation therapy (lime) on nausea and vomiting in pregnant women in the first trimester at the Paguyaman Gorontalo Health Center.

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