

## The effect of mint oil on nausea and vomiting during pregnancy

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### Abstract

**Background:** Base on data in Lampung-Indonesia in 2017 of 182,815 pregnant women in the first trimester pregnancy, recorded a high number of emesis gravidarum by 50-90%, while hyperemesis gravidarum reached 10-15%.

**Purpose:** To know the effect of mint oil on nausea and vomiting during pregnancy

**Methods:** A quantitative research by pre-experimental research design (one group pretest posttest). The population was pregnant women in the first trimester complain of nausea and vomiting of 36 pregnant women taken by total sampling and by criteria inclusion found of 30 pregnant women. Univariate data analysis which presents the percentage of pappermint administration to reduce nausea and vomiting in pregnant women. Bivariate analysis proves the hypothesis whether there is an effect of pappermint oil aromatherapy to reduce nausea and vomiting of pregnant women by statistical test used is the T-test.

**Results:** The average a complain of nausea and vomiting in pregnant women before being given aromatherapy pappermint oil it was 17.50 and after being given aromatherapy pappermint oil it was 10.60. Effect of aromatherapy pappermint oil to reduce of nausea and vomiting in pregnant women (p-value 0,000 <α 0.05).

**Conclusion:** There was effect of Aromatherapy Pappermint Oil to reduce of nausea and vomiting in pregnant women. It is recommended to pregnant women who experience of nausea and vomiting can be treated with alternative therapy by aromatherapy peppermint which has been proven to reduce nausea and vomiting.

**Keywords:** Mint oil; Nausea; Vomiting; Pregnancy

### INTRODUCTION

Nausea usually occurs in the morning, but can also occur at any time and night. These symptoms occur more or less after 6 weeks after the first day of the last menstruation and last for approximately 10 weeks. Nausea and vomiting occur in 60-80% of *primigravida* and 40-60% occur in *multigravida*. One in a thousand other pregnancy symptoms become severe. Aromatherapy *peppermint* contains menthol essential oil has a carminative and antispasmodic effect that works in the small intestine in the digestive tract so that it can overcome or eliminate nausea and vomiting. The mechanism of action of aromatherapy in the human body takes place through two physiological systems namely through the circulation system and the olfactory system (Andriani & Purwati, 2017).

Based on the Health Profile of the Province of Lampung in 2017, from 182,815 pregnant women

in the first trimester of pregnancy, the data obtained was a high incidence of *emesis gravidarum* in pregnant women, 50-90%, while *hyperemesis gravidarum* reached 10-15% in Province. Lampung. Based on data from the South Lampung District Health Office, the incidence rate of *emesis gravidarum* was 40-60%, while the incidence of hyperemesis gravidarum was 7-10% of the total number of pregnant women, which were 12,544 people (Restian, 2015). Based on the results of the pre-survey conducted in January 2019 at BPS Eliana Putriani, Amd, Keb Kec. Jati Agung Kab. South Lampung, namely in December data obtained that there were 53 first trimester pregnant women were 36 (55.2%) of these pregnant women experienced nausea and vomiting and most of the pregnant women did not know that peppermint is one of the actions that can be done to reduce nausea and vomit.

## The effect of mint oil on nausea and vomiting during pregnancy

**RESEARCH METHODS**

A quantitative research type by design of pre-experimental with approach one group pretest posttest. The population were all first trimester pregnant women who experienced of nausea and vomiting in clinic BPS Eliana Putriani, A.Md, Jati Agung. South Lampung, conducted on July 2019. By total sampling taken of 36 pregnant women who experience of nausea and did not take anti-nausea / vomiting drugs. By criteria inclusion found of 30 pregnant women. Data analysis using T-test. How to apply, when experiencing of a nausea and vomiting in the morning, pappermint oil by drops as much as 2-3 drops into tissue paper after it is inhaled within 5-10 minutes with a distance of 3-5 cm from the nose. An evaluation of the benefits and effects of the therapy was done on days 4 and days 7

**RESEARCH RESULTS****Table 1. Nausea and Vomiting During Pregnancy (N=30)**

Variabel	N	Mean	Median	SD	SE	Min	Max
Nausea and vomiting before applying aromaterapi pappermint	30	17.50	18.00	1,889	0.345	14	20
Nausea and vomiting after applying aromaterapi pappermint	30	10.60	10.50	1,889	0.344	8	14

Based on the above table it can be seen before applying aromaterapi pappermint that from 30 respondents, the average complain of nausea/vomiting in value of 17.50, a median value of 18.00, the minimum value of 14 and the maximum value of 20. After applying aromaterapi pappermint the mean value of 10.60, the median value of 10.50, the minimum value of 8 and the maximum value of 14.

**Table 2. The Effect of Mint Oil on Nausea and Vomiting During Pregnancy (N=30)**

Nausea and Vomiting During Pregnancy	N	Mean	SD	SE	p-value
Before applying aromaterapi pappermint	30	17.50	1.889	0.345	0.000
After applying aromaterapi pappermint	30	10.60	1.886	0.344	

Based on the table above the t test results obtained p value  $0,000 \leq 0.05$  based on the test results, there is the effect of mint oil on nausea and vomiting during pregnancy

**DISCUSSION**

Based on the table above, the t test results obtained p value  $0,000 \leq 0.05$  based on test results. There is an effect of peppermint

aromatherapy oil on vomiting nausea in first trimester pregnant women. A previous study found similar results about the effect of Aromatherapy with Peppermint Oil for treating Nausea and Vomiting in Pregnancy: Single-blind, Randomized, Randomized-Controlled Trials "with the results of the study found that there is an effect of aromatherapy peppermint oil on nausea and vomiting in pregnant women with a value of p =

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The effect of mint oil on nausea and vomiting during pregnancy

0.001 <0.005 (Joulaeerad, Ozgoli, Hajimehdipoor, Ghasemi, & Salehimoghaddam, 2018).

As the theory of aromatherapy peppermint containing menthol essential oil has a carminative and antispasmodic effect that works in the small intestine in the digestive tract so that it can overcome or eliminate nausea and vomiting. The mechanism of action of aromatherapy in the human body occurs through two physiological systems namely through the circulation system and the olfactory system (Istiqomah, Yani, & Suyati, 2018).

The absorption of essential oils into the circulatory system takes about 30 minutes to be fully absorbed by the body's system before being released back through the lungs, skin and urine within a few hours later (Hidayat, 2007). Aromatherapy used through the inhalation method will send chemical messages to be sent through the bulb and the olfactory bulb. Chemical messages will be sent to the limbic system in the brain (Siswanto, 2017). The limbic system as the center of pain, pleasure, anger, fear, depression, and various other emotions. In the limbic system there is an amygdala component that is responsible for our emotional response to scents, while the hippocampus is responsible for memory and odor recognition. and where aromatherapy chemicals stimulate our brain's memory storage for odor recognition (Runiari, 2010).

This will stimulate memory and emotional response. The hypothalamus acts as a relay and regulator, giving rise to messages that must be conveyed to other parts of the brain and other parts of the body. The message received is then converted into an action in the form of the release of electrochemical compounds that cause euphoria, relaxation and sedatives (Hanafiah, 2007). A pleasant odor will stimulate the pituitary to release endorphins which function as natural painkillers and produce feelings of relaxation, calm and pleasure. A sense of calm will stimulate an area in the brain called the raphe nucleus to secrete serotonin which has a sedative effect (Kartikasari, Ummah, & Taqiyah, 2017). The olfactory organ is the only sense of taste with various receptors nerves that are in contact direct

with the outside world and are a direct channel to the brain. Only 8 molecules can trigger electrical impulses at the nerve endings. It takes approximately 40 nerve endings that must be stimulated before a person is aware of what smell is being smelled (Prawirohardjo, 2010).

Smell is a molecule that is volatile directly into the air. When you enter the nasal cavity through breathing, it will be translated by the brain as the olfactory process (Saefafuna, Pratiwi, Salmadea, Refi & Rejeki, 2011). The olfactory process is divided into three stages: Reception of the odor molecule by the olfactory epithelium nerve, which is a receptor containing 20 million nerve endings. The smell is transmitted as a message to the olfactory center located at the back of the nose. The olfactory center is only as big as pomegranate seeds at the base of the brain (Jamilah, Suwondo, Wahyuni, & Suhartono, 2014). At this place various neuron cells interpret the odor and deliver it to the limbic system which will then be sent to the hypothalamus for processing. When essential oils are inhaled, volatile molecules will carry the aromatic elements contained in the oil content to the top of the nose (Manzila, 2017).

Vibrating hair contained therein, will function as a receptor, will deliver electrochemical messages to the emotional center and memory of someone who will then deliver messages back to the entire body through the circulatory system. Messages delivered throughout the body will be converted into an action by releasing neurochemical substances in the form of feelings of pleasure, relax, calm or aroused. Through inhalation some of the molecules will enter the lungs. Aromatic molecules will be absorbed by the mucosal lining of the respiratory tract, both in the bronchi or in the delicate branches (*bronchiole*). In the exchange of gas in the alveoli, the molecule will be transported by the blood circulation system in the lungs. Deep breathing will increase the amount of aromatic material present in the body. The resulting odor response will stimulate the work of brain neurochemical cells (Rhodes, & McDaniel, 2001).

Based on the results of the study, researchers argue that nausea and vomiting experienced by pregnant women is physiological because in the

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The effect of mint oil on nausea and vomiting during pregnancy

first trimester an increase in the hormone HCG causes nausea and vomiting in pregnant women (Hestiana, Yasin, Hariri, & Subeki, 2014). The frequency of nausea and vomiting experienced by pregnant women before being given aromatherapy peppermint varies, it is caused by different gravida mothers, mothers with their first pregnancy are more sensitive to any changes that occur in him, including the pungent odor, so he is more sensitive to experienced nausea and vomiting compared to mothers who have been pregnant before (Pertwi, 2012). While the decrease in the frequency of nausea and vomiting in pregnant women who have been given aromatherapy peppermint is different, it is due to the work or activity of the mother and psychological condition of the mother, working mothers decrease the frequency of nausea and vomiting is lower than that of women who do not work. ( Puspitasari, 2017).

### CONCLUSION

There is an effect of applying Aromatherapy Peppermint Oil on Vomiting Nausea in First Trimester Pregnant Women at clinic BPS Eliana Putriani, A.Md, Jati Agung, South Lampung - Indonesiain ( p-value  $0,000 < \alpha 0.05$ ).

### SUGGESTION

The clinic Management to be provide information about aromatherapy pappermint can be used as a non-pharmacological alternative to reduce nausea and vomiting in pregnancy, so that the administration of aromatherapy peppermint can be applied to patients with complaints of nausea and vomiting. Specifically for respondents, it is expected that after communication of information and education (IEC) related to aromatherapy peppermint is one alternative to reduce nausea and vomiting.

The results of this study can be used as a reference for conducting similar studies but can develop research with true experimental designs with approaches to the pre-test control group design so that they can compare success rates with control groups or modify therapy with various non-pharmacological therapies others, thereby reducing the side effects of treatment with

pharmacological drugs used by pregnant women with nausea and vomiting problems.

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The effect of mint oil on nausea and vomiting during pregnancy

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