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QUASY EXPERIMENT: EFFECT OF ESSENTIAL AROMATHERAPY FOR REDUCING GRAVIDARUM EMESIS

¹Ary Oktora Sri Rahayu, ²Nila Erlina Restyawati

¹Midwifery Department, Al Insyirah Institute of Health and Technology

*email: aryoktora.10@gmail.com

²Midwifery Department, Al Insyirah Institute of Health and Technology

email: Nilaerlina@gmail.com

ABSTRACT

Pregnancy in the first trimester generally experiences some physiological changes that cause complaints such as nausea to vomiting known as *Emesis gravidarum*. Lemon aromatherapy administration is one of the non-pharmacological ways that can reduce nausea and vomiting. The purpose of this study is to determine the effectiveness of lemon essential aromatherapy in reducing the frequency of nausea and vomiting in pregnant women around the sub-district of Puskesmas Ukui Public Health Center. The design of the study was pre experimental design, using one group pre-test and post-test with 18 respondents. Data were analyzed univariately and bivariately using the T Dependent test. The data normality test used is kormogorov-smirnov and the results obtained are 0.5 ($P > 0.05$), so the data used are normally distributed. The results showed the majority distribution of nausea and vomiting frequency before administering aromatherapy at level 2 was 83.33%, while the majority distribution of nausea and vomiting after administering aromatherapy at level 1 was 77.78%, with a P-value of 0.000. Based on these results it can be concluded that the administration of lemon essential aromatherapy is effective in reducing nausea and vomiting with a P-value of 0.000 ($p < 0.005$). It is recommended for pregnant women who suffer from nausea, vomiting to use lemon aromatherapy as an alternative to reduce nausea and vomiting.

Keywords: nausea (*emesis gravidarum*), aromatherapy, lemon,

INTRODUCTION

Women in the first trimester of pregnancy generally experience several physiological changes, causing complaints such as nausea and vomiting or what is better known as *Emesis gravidarum*. These symptoms occur approximately 6 weeks from the start of pregnancy and last for approximately 12 weeks (Prawiharjo, 2012). *Emesis gravidarum* arises due to changes in the hormones *Estrogen* and *human chorionicgonadotropin* (hCG) in the body (Jennifer and Niebyl, 2010). Continuous *emesis gravidarum* can cause disruption to daily activities, thereby endangering the mother and fetus (Lacasse *et al*, 2009).

According to a non-pharmacological way that can reduce nausea and vomiting in pregnant women is by giving aromatherapy to patients. According to Kia *et al* (2014). During pregnancy, 49.2% of pregnant women used herbal medicines and 39.3% of them used these herbs for digestive problems and to overcome nausea and vomiting. One aromatherapy that is often encountered and used by pregnant women and the general public is Lemon Essential Oil (*Citrus lemon*).

Lemon essential oil (*Citrus lemon*) is the herbal oil most widely used in pregnancy and is considered safe aromatherapy for the fetus. Lemons contain abundant vitamin C, and are rich in vitamins B, E and several micro minerals that the

body needs for the immune system and preventing viruses that cause influenza. Lemons also contain lots of fiber in the form of pectin which is good for lowering cholesterol and triglyceride levels (Sarwono, 2014).

According to research by Sari and Safitri (2018). There is an effect of giving Lemon aromatherapy on the frequency of nausea (*Emesis gravidarum*). Providing Lemon aromatherapy is effective in reducing the frequency of nausea (*Emesis gravidarum*) in pregnant women during pregnancy. The results of this study are in accordance with other research which explains that there is an effect of giving lemon aromatherapy inhalation on nausea in pregnancy with a p-value of 0.000. The same thing was also expressed by research by Fatolah and Mutoharoh (2016); Nuryati et al (2016); Susanti and Susiana (2017) explained that there was an effect of giving Lemon aromatherapy inhalation on *morning sickness* in pregnant women with a p-value of 0.007. Based on the description above, researchers are interested in conducting research with the title "Essential Lemon Aromatherapy Effectively Reduces *Emesis Gravidarum* in the Ukui Health Center Work Area"

RESEARCH METHODS

This research uses a quantitative approach with a *quasi-experiment* in the form of a one group *pretest posttest* design, this method is intended to determine whether there is an effect of "something" imposed on the subject under investigation.

This research was conducted on 18 respondents from first trimester pregnant women who experienced emission *gravidarum* in the Ukui Health Center working area. Researchers measured the frequency of emission *gravidarum* experienced by pregnant women (*pre- test data*). Next, respondents were explained about the research management, which included therapy using lemon aromatherapy inhalation techniques for 10-15 seconds, carried out twice in the morning and

evening over a period of 4 consecutive days. Then on day 4 an evaluation was carried out by the researcher (*post-test data*). The data obtained was subjected to the *Kormogorov-Smirnov normality test* to determine whether the data used was normally distributed or not. Furthermore, the data that had been tested for normality was analyzed univariately and bivariately with the *T-dependent test*. The results of univariate and bivariate analyzes are presented in tabular form. And bivariate analysis in this study uses the *T-Dependent test*. Comparing the *P value* with α (0.05), if $P < \alpha$ (0.05), then H_0 is rejected (significant) and if $P > \alpha$ (0.05) then H_0 failed to be rejected (not significant).

RESULTS AND DISCUSSIONS

Results

3.1 Univariate Analysis

Table 1. Frequency Distribution of *Emesis gravidarum* Before Giving Aromatherapy

No	Lemon Inhalation		
	Degree	Frequency	%
1	1 (>2-4 x a day)	3	27.78
2	2 (\geq 5-10 x daily)	15	83.33
3	3 (\geq 11 x daily)	0	0
Total (N)		18	100

Based on table 1, it can be seen that before administering lemon inhalation aromatherapy, the frequency of *gravidarum* emissions in grade 1 was 27.78% and in grade 2 was 83.33%.

Table 2. Frequency Distribution of *Emesis gravidarum* After Giving Lemon Inhalation Aromatherapy

No	Degrees	Frequency	%
1	1 (>2-4 x a day)	14	77.78
2	2 (\geq 5-10 x daily)	4	22.22
3	3 (\geq 11 x daily)	0	0
Total (N)		18	100

Based on table 2, it is known that the frequency of *emesis gravidarum* after administering lemon inhalation aromatherapy in grade 1 was 77.78%, while in grade 2 it was 22.22%.

3.2 Bivariate Analysis

Before carrying out the *T-Dependent Test*, a normality test is first carried out. To determine the normality of data, the *Kolmogorov Smirnov test can be used*. Based on the results of *Kolmogorov Smirnov's* analysis of data using SPSS, a significance value of 0.500 (> 0.05) was obtained, so it can be concluded that the data used in this research is normally distributed.

Table 3. Effectiveness of Lemon Inhalation Aromatherapy in Reducing *Emesis Gravidarum*

Treatment	N	Average	Elementary school	P value
<i>Pretest</i>	18	6.33	1.61	0,000
<i>Posttest</i>	18	3.44	1.14	

From the results of statistical tests using *T-dependent*, a *P-value of 0.000* was obtained, thus the p value $< \alpha 0.05$, which means that lemon aroma therapy is effective in reducing *emesis gravidarum*. Based on the test results, the average frequency of *emesis gravidarum* before giving Lemon inhalation aromatherapy was 6.33 (on average experiencing *emesis gravidarum* 6 times a day) with a standard deviation of 1.61 then after being given Lemon inhalation aromatherapy the average frequency of *emesis gravidarum* of 3.44 (on average experiencing *emesis gravidarum* 3 times a day) with a standard deviation of 1.14.

Discussion

Based on the results of research conducted in the Ukui Health Center working area, it was found that the average age of pregnant women with *emesis gravidarum* was mostly 20-35 years old with a presentation of 88.89%, with a high

school education level of 66.67%, and 72, 22% were primigravida/first pregnancy and work status as housewives was 83.33%.

The results of data analysis carried out on 18 respondents showed that before administering lemon inhalation, the average rate of pregnant women in the Ukui Health Center working area experienced *emesis gravidarum* emissions $\geq 5-10$ times a day (grade 2) was 83.33% and only 17.78% percent Pregnant women who experience *emesis gravidarum* $> 2-4$ times a day (grade 1). However, after being given lemon inhalation aromatherapy intervention for 4 (four) consecutive days, the research results showed that the frequency of *emesis gravidarum* in pregnant women decreased by 77.78 %, experiencing *emesis gravidarum* $> 2-4$ times a day (grade 1) and by 22 22% experienced *emesis gravidarum* $\geq 5-10$ times a day (grade 2).

T-dependent test showed that the average frequency of emission *emesis gravidarum* before giving lemon inhalation aromatherapy was 6.33 (experiencing *emesis gravidarum* 6 times a day) with a standard deviation of 1.61 (grade 1 *emesis gravidarum*) after giving lemon inhalation aromatherapy. the average decrease in the frequency of *emesis gravidarum* was 3.44 (experiencing *emesis gravidarum* 3 times a day) with a standard deviation of 1.14. These data show that providing lemon inhalation aromatherapy can reduce the average frequency of *emesis gravidarum* with a *P-value of 0.000*, which means that providing essential lemon aromatherapy is effective in reducing *emesis gravidarum*.

The results of this research are in line with research by Materniti et al (2016) on the effect of lemon aromatherapy inhalation on *morning sickness* in pregnant women in the Tulang Bawang Community Health Center working area in Banjar Agung District, Tulang Bawang Regency in 2016 with a *P-value of 0.000* ($p < 0.05$) . The results of this study also showed a significant reduction in the frequency of nausea from 15.68 to 7.96 per day after

being given the lemon aromatherapy intervention.

This research is also in line with research conducted by Nuryati et al (2015). Where the intensity of emission gravidarum before being given essential lemon aromatherapy was an average of 6.56, whereas after being given essential lemon aromatherapy the average nausea was 2.81. There was a difference before and after the lemon essential aroma therapy intervention was given to reduce *emesis gravidarum* in the first trimester with a p value of 0.000. Research by Cholifah and Nuriyanah (2018); Rofiah et al (2019) also revealed that giving lemon aromatherapy is very effective in reducing *emesis gravidarum*.

According to Benson and Pernol (2015), giving lemon inhalation aromatherapy to pregnant women who experience nausea and vomiting provides various effects for the inhaler, such as calmness, freshness, and can even be used to help pregnant women overcome nausea. Apart from its abundant vitamin C content, lemons are also rich in vitamins B, E and several micro minerals that the body needs for the immune system and preventing viruses that cause influenza. Lemon Aromatherapy contains ingredients that can kill meningococcus bacteria, typhoid bacteria, anti-fungal effects and are effective in neutralizing unpleasant odors, as well as producing anti-anxiety, anti-depression, anti-stress effects and for focusing the mind.

Researchers also assume that lemon inhalation aromatherapy is very effective in reducing *emesis gravidarum* in pregnant women because it is made from a mixture of lemon extracts containing essential oils which are able to neutralize pungent odors and provide anti-anxiety or anti-depression effects, thus creating a relaxing or calming effect for the user.

CONCLUSION

Based on the research results described by researchers in the previous chapter regarding the Effectiveness of

Lemon Essential Aromatherapy for Reducing *Emesis Gravidarum* in the Ukui Health Center Work Area, it can be concluded that:

1. The frequency distribution of emesis gravidarum before the lemon essential aromatherapy treatment was given was mostly grade 2 (≥ 5 -10 times a day) at 83.33 %.
2. The frequency distribution of emesis gravidarum after being given essential lemon aromatherapy was mostly grade 1 (> 2 -4 times a day) at 77.78 %.
3. Providing lemon essential aromatherapy is effective in reducing emesis gravidarum with a *P-value* of 0.000 ($P < 0.005$).

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