

PEPPERMINT AROMATHERAPY IS EFFECTIVE TO REDUCE NAUSEA AND VOMITING IN TRIMESTER I OF PREGNANT WOMEN AT SELAMAT CLINIC MEDAN CITY

Sukaisi¹, Zuraidah²

^{1,2} Politeknik Kesehatan Kementerian Kesehatan Medan
Email : zuraidah@gmail.com

ABSTRACT

Nausea and vomiting are common in early pregnancy. Nausea and vomiting in pregnant women have physical and psychological effects, including affecting the lives of pregnant women which have an impact on the quality of life of pregnant women. The purpose of this study was to assess the effectiveness of peppermint aromatherapy to reduce nausea and vomiting in first trimester pregnant women. Methods The type of research is analytical research with a quasi-experimental design. This study distinguishes the degree of nausea and vomiting in pregnant women in the first trimester before receiving peppermint aromatherapy treatment and after receiving treatment. Measurement of nausea and vomiting with the PUQE questionnaire. Respondents were divided into two groups, the intervention group and the control group, with 25 respondents each. Assess homogeneity with Mann Whitney, assess effectiveness with Wilcoxon.

The intervention group after being given aromatherapy had mild nausea and no nausea. The control group before and after the intervention had a moderate degree of dominance. The degree of vomiting in the intervention group before being given aromatherapy generally vomited with moderate degrees (15 people), mild degrees as many as 9 people and severe degrees of 1 person. After being given aromatherapy, the degree of vomiting became mild as many as 8 people and there was also no vomiting. the control group before being given the intervention obtained moderate degrees of vomiting (13 people) and 12 people mild. After the intervention, the degree of vomiting became moderate (17 people), the degree of mild was 7 people and the degree of severe was 1 person. There was a significant difference in PUQE scores for nausea and vomiting between before and after the intervention in the two groups with a p value of <0.05. Peppermint aromatherapy is effective in relieving nausea and vomiting in first trimester pregnant women

Keywords: *nausea, vomiting, peppermint, PUQE questionnaire*

INTRODUCTION

Pregnancy is a meaningful experience for women. During pregnancy women experience physical, hormonal and physiological changes. These changes include body shape, daily habits, cravings or pica, fatigue, nausea, vomiting, and these discomforts arise due to pregnancy. These changes begin since the first trimester of pregnancy. due to these changes can affect the activities of pregnant women (Reichner CA, 2015). According to the World Health Organization (WHO), the incidence of hyperemesis gravidarum reaches 12.5% of all pregnancies in the world. Pregnancy check-up visits of pregnant women in Indonesia obtained data on mothers with hyperemesis gravidarum reaching 14.8% of all pregnancies. Nausea and

vomiting are the most common main complaints felt by pregnant women almost every year throughout the world (Kemenkes RI 2019).

Nausea and vomiting are common between six and twelve weeks of gestation, but these can continue up to 20 weeks and persist after that in up to 20% of women (Mahmoud R. dkk, 2013). Symptoms of nausea and vomiting are common in pregnant women, with an estimated prevalence of 35% to 91% in pregnant women. Nausea and vomiting in pregnant women have physical and psychological effects, including affecting the life of pregnant women, which impacts the quality of life of pregnant women, unable to carry out daily activities, sometimes disrupting the social life and stress of pregnant women (Safajou, 2020). The cause of nausea and vomiting in pregnancy is still unknown. Therefore, a wide variety of treatments have been used empirically. Many therapeutic methods, including pharmaceutical and non-pharmaceutical interventions, have been proposed to treat nausea and vomiting. Concerns about the side effects of using chemical drugs on the fetus have forced women to try complementary medicine to treat nausea and vomiting. However, greater knowledge is needed about the safety of using complementary therapies during pregnancy (Safajou, 2020).

The use of aromatherapy is one of the complementary therapies to reduce nausea and vomiting. Study (Azam A, 2017) in Tehran on 66 pregnant women found the use of mint aromatherapy can reduce nausea & vomiting of pregnant women compared to the control group. Studies conducted (Mazzotta P dkk, 2000) on first trimester pregnant women found peppermint aromatherapy can reduce nausea and vomiting. Complaints of nausea and vomiting in first trimester pregnant women are normal symptoms in pregnancy. However, if not handled properly, nausea and vomiting will affect the activities of pregnant women. The results of a study (Mazzotta P dkk, 2000) found that nausea and vomiting reduced the quality of life of pregnant women, caused high blood pressure and resulted in preeclampsia compared to pregnant women who did not experience nausea and vomiting.

Efforts have been made to reduce nausea and vomiting in pregnant women in midwifery practice in Indonesia generally by regulating food patterns, giving anti-nausea drugs and vitamin B6. The use of drugs in reducing nausea and vomiting causes side effects and even does not reduce. The results of the survey at the Selamat Clinic obtained there were 16 pregnant women in the first trimester experiencing nausea & vomiting. It is important for health workers to overcome vomiting in pregnant women in the first trimester, because it is related to the quality and continuation of their pregnancy. Based on the description above, the researcher is interested in knowing the effectiveness of peppermint oil aromatherapy in reducing nausea and vomiting in first trimester pregnant women at the Selamat Clinic, Medan Tembung District, Medan City.

METHOD

The research is analytic research with a quasi experiment design. This study distinguishes the degree of nausea and vomiting in first trimester pregnant women before receiving peppermint aromatherapy treatment and after receiving treatment. This study was divided into two groups, the intervention group and the control group. The population in this study were all first trimester pregnant women with a gestational age of 4 - 16 weeks who experienced nausea & vomiting at the Selamat Clinic, Medan Tembung District, Medan City, who had agreed to be involved as research subjects by signing an informed consent statement. Determination of the sample was carried out randomly with inclusion criteria, the sample size

was determined based on the formula for calculating the sample size using two independent populations (Cohen J, 1992), with the total sample size in this study being 50 people (25 Peppermint group samples and 25 control group samples).

The instrument in this study for measuring nausea and vomiting is the PUQE / Pregnancy Unique Quantification of Emesis / Nausea questionnaire. Before and after the intervention respondents were asked how many times nausea and vomiting. The use of the PUQE questionnaire has been widely used (Saragis AW, 2016). The use of the PUQE questionnaire in the study by asking the number of nausea and vomiting in 24 hours. The frequency of nausea is a subjective complaint in the form of a feeling of discomfort in the digestive tract. Respondents were given a question, namely 1 item in the form of a question how many times the respondent experienced nausea within 24 hours. Mild level if the respondent experienced nausea 1-5 times, moderate nausea if they experienced nausea 6-10 times, severe level if the respondent experienced nausea 11-15 times. The frequency of vomiting in the form of ejection of gastric contents vomiting through the mouth which can be observed by using the PUQE questionnaire how many times the number of vomiting in a day. Respondents were asked how many times they experienced vomiting within 24 hours. Mild vomiting is if the respondent experiences vomiting 1-3 times, moderate vomiting if the respondent experiences vomiting 4-6 times, while severe vomiting if the respondent experiences vomiting more than 7 times.

The location of this research was carried out at Selamat Clinic, Medan Tembung District, Medan City. The research was carried out from September to October 2022. The independent variables were peppermint aromatherapy and PUQE as a result of measuring nausea & vomiting in pregnant women as the dependent variable. This study was divided into 2 groups of respondents, the intervention group and the control group. Each number was 26 pregnant women. The intervention group was pregnant women who were given peppermint essential oil aromatherapy placed in bottles to treat nausea and vomiting. Using aromatherapy, if the respondent is nauseous and vomits, the respondent will inhale the aromatherapy through a cotton bud.

The control group was given no aromatherapy or only a placebo, namely grated carrots mixed with aqua water and placed in a bottle. When respondents in the control group had nausea and vomiting, the respondents would inhale a placebo to treat the nausea and vomiting. Aromatherapy in the intervention group was aromatherapy sold in markets that complied with the Indonesian BPOM manufacturer Darjeeling, which contained *Mentha piperita* essential oil. Before the intervention, respondents were asked how many times they had nausea and vomiting in the last 24 hours (Pre). Then, when nausea or vomiting, the respondent will inhale peppermint aromatherapy at a distance of 3 cm from the nose and then breathe deeply through the nose 3 times. After 5 minutes, repeat inhaling the peppermint aromatherapy if necessary. The intervention was carried out for 4 days (Safajou F dkk, 2020). After day 4, respondents will be asked again how many times they experienced nausea and vomiting (Post).

All data obtained were recorded and tabulated, and processed statistically using SPSS. The normality of the data was measured for each group. In this study, groups with normal and abnormal distribution were obtained. For data with a normal distribution, it was tested using

the paired t test, while for groups that were not normally distributed, the Wilcoxon test was used. Statistically significant differences were determined with a p value < 0.05.

RESULT AND DISCUSSION

The research entitled "Effectiveness of administering peppermint aromatherapy to reduce nausea and vomiting in first trimester pregnant women at Selamat Clinic Medan City" was completed in October 2022. The aim of this research was to measure the effectiveness of peppermint aromatherapy to reduce nausea & vomiting in first trimester pregnant women. In this study, nausea and vomiting were measured using the PUQE/Pregnancy Unique Quantification of Emesis/Nausea Questionnaire questionnaire. Respondents in this study were pregnant women in the first trimester with a gestational age of 6 - 12 weeks. Before recruitment, respondents confirmed pregnancy by urine check. The respondents of this study were pregnant women in the first trimester, 25 people in each group. Research data was analyzed as written below:

Table 1. Characteristics of respondents in the study entitled "Effectiveness of giving peppermint aromatherapy to reduce nausea & vomiting in first trimester pregnant women at Selamat Kota Medan Clinic"

No	Characteristics		Intervention		Control	
			f	%	f	%
1	Age	< 20 Years old	5	20	6	24
		20 - 30 Years old	20	80	19	76
		30 Years old	-	--	-	-
2	Suku	Java	22	88	19	76
		Batak	3	8	4	16
		Minang	-	-	2	8
		Karo	1	4	-	-
3	Education	SMP	1	4	-	-
		SMA	22	88	24	96
		PT	2	8	1	2
4	Employment	Working	3	12	2	8
		Not Working	22	88	23	92
5	Pregnancy	Primigravida	12	48	10	40
		multigravida	13	52	15	60

Data Analysis: Based on table 1 in this study, it was found that the ages of respondents in both groups, both the intervention group and the control group, were generally 20-30 years old, but there were still respondents aged <20 years, namely 5 people in the intervention group and 6 people in the intervention group. control. Among the respondents, the respondents were generally Javanese (88% in the intervention group and 76% of people in the control group). The majority of respondents had a high school education, generally respondents did not work. The number of pregnancies in the intervention group was generally multigravida, as was the case in the control group.

The data results for measuring the degree of nausea and vomiting with the PUQE score of respondents in this study are as follows:

Table 2 PUQE scores for respondents in the study entitled "Effectiveness of giving peppermint aromatherapy to reduce nausea & vomiting in first trimester pregnant women at Selamat Clinic Medan City"

No	Variable	Score PUQE	Intervention		Control	
			Pre	Post	Pre	Post
1	Nausea	Mild	1	21	-	-
		Moderate	21	-	21	20
		Severe	3	-	4	5
2	Vomitting	Mild	9	8	12	7
		Moderate	15	-	13	17
		Severe	1	-	-	1

Data Analysis: Based on table 2 in this study, measurements of nausea and vomiting were obtained using the PUQE questionnaire. In the intervention group, before being given aromatherapy, nausea was generally moderate (21 people) and 3 people had severe nausea. After being given aromatherapy, the degree of nausea became mild and there was no nausea. In the control group, before the intervention was given, the degree of moderate nausea (21 people) and severity was 4 people and after the intervention the degree of nausea was moderate (20 people) and severity 5 people. For the degree of vomiting in the intervention group before being given aromatherapy, nausea was generally moderate (15 people), 9 people mild and 1 person severe. After being given aromatherapy, the degree of vomiting became mild in 8 people and some vomiting became non-existent. In the control group, before the intervention was given, the degree of vomiting was moderate (13 people) and 12 people had mild levels of vomiting. After the intervention, the degree of vomiting became moderate (17 people), 7 people had a mild degree and 1 person had a severe degree.

The difference in PUQE scores before and after intervention in the two intervention and control groups can be seen from table 3 below:

Table 3. Differences in PUQE scores before and after intervention in the two groups in the study entitled "Effectiveness of giving peppermint aromatherapy to reduce nausea & vomiting in first trimester pregnant women at Selamat Clinic Medan City"

Variable	intervention (SD)	control (SD)	<i>P</i> *
Score PUQE			
Nausea			
- Pre intervention	8,80 (1,92)	8,56 (1,83)	0,375
- Post intervention	1,44 (1,00)	9,20 (1,83)	0,000
<i>P</i> **	0,000	0,003	
Vomitting			
- Pre intervention	3,92 (1,41)	3,60 (1,08)	0,363
	0,32 (0,48)	4,32 (1,18)	0,000

- Post intervention			
<i>P</i> **	0.000	0,001	

*Mann Whitney-U test

**Wilcoxon test

Data Analysis: Based on table 3 above in this study, it was found that there was a significant difference in PUQE scores for nausea and vomiting between before and after intervention in the two groups with a p value of <0.05.

DISCUSSION

The aim of the research entitled The effectiveness of giving peppermint aromatherapy to reduce nausea & vomiting in first trimester pregnant women at Selamat Clinic Medan City is to obtain the effect of aromatherapy on nausea and vomiting in pregnant women with a gestational age of <16 weeks. Respondents in this study were divided into 2 groups, the intervention group given peppermint aromatherapy and the control group. On average, respondents in the 2 groups were young and reproductive, pregnant with their second child and generally respondents did not work. The majority of respondents' education was high school and were of Javanese ethnicity. The intervention given in this study was by inhaling peppermint aromatherapy in the intervention group and the control group was not given. Providing lemon aromatherapy by dripping a cotton bud with 2 peppermint aromatherapy oils then the respondent will inhale at a distance of 3 cm from the nose and then breathe deeply through the nose 3 times. After 5 minutes, repeat inhaling the lemon aromatherapy if necessary. The intervention was carried out for 4 days (Safajou dkk, 2020). The aromatherapy used is essential oils. The results of this study after the intervention carried out intragroup comparisons between the two groups.

The characteristics of the respondents in this study were generally of productive age, namely 20 - 30 years, but there were still young respondents. Generally, the respondents were Javanese, and the majority had a high school education, both in the intervention group and the control group. The respondent's job is generally not working and as a housewife. Respondents in this study generally had more than 1 child. Complaints of nausea and vomiting in pregnant women are common complaints. Complaints of nausea and vomiting during pregnancy occur in the first trimester during the hormonal adaptation process. The cause of nausea and vomiting in pregnancy is due to an increase in human chorionic gonadotropin (hCG) and estrogen (Pantikawati JS, 2010).

In this study, providing peppermint aromatherapy intervention to reduce nausea and vomiting in pregnant women was quite effective. The results showed that there was a change in the degree of nausea and vomiting which became lower or even non-existent after being given aromatherapy in the intervention group. In the control group there was no change (table 2). The results of a study conducted (Safajou dkk, 2020) in Iran on the use of peppermint aromatherapy combined with lemon aromatherapy effectively reduced nausea and vomiting in pregnant women in the first trimester. Research (Azam A, dkk, 2017) also in Iran, found that giving peppermint aromatherapy reduced nausea and vomiting in pregnant women and even reduced maternal anxiety. The peppermint used in this research is the essential oil of Peppermint (*Mentha piperita*) shoot flowers, the same as in this research. Treatment for nausea and vomiting is very necessary and must be addressed. Because nausea and vomiting have an impact on pregnant women where the mother becomes weak, pale, and the frequency of

urination decreases so that body fluids decrease and the blood becomes thick (hemoconcentration) (Vitrianingsih V, Khadijah, 2019). This condition can slow blood circulation so that oxygen and food supply to the tissues is reduced, endangering the mother and fetus (Astuti HP, 2018).

Treatment for nausea and vomiting in pregnancy is generally by administering antiemetic drugs and general care, namely reducing fatty, cold foods, avoiding odors, consuming light foods. Handling nausea and vomiting is considered less effective because of additional shopping costs, forgetting to take medicine and even medicines having side effects in the form of headaches, nausea, diarrhea (Sulistyowati R, 2021). Providing peppermint aromatherapy is an effective and efficient option for treating nausea and vomiting in pregnancy. Giving peppermint aromatherapy to treat nausea and vomiting is a non-pharmacological therapy and is a complementary therapy, with a small cost, easy to carry and quite enjoyable.

Based on table 3 in this study, the difference in scores before and after intervention in the intervention group and control group in this study found significant differences in the two groups. Peppermint aromatherapy is effective in reducing nausea and vomiting in the first trimester of pregnancy. This is also supported by the results of research (Azam A dkk, 2017), (Hanifah N, 2014) and (Safajou dkk, 2020) which show that after seven consecutive days of aromatherapy the average score for nausea and vomiting in group aromatherapy was significantly less than the control group, although in both groups, the mean nausea and vomiting scores decreased significantly on the last day of intervention, which could be due to the placebo effect seen in the study. In contrast to the results of research (Joilaeerad N dkk, 2018), the effect of peppermint aromatherapy was no different from placebo in reducing nausea and vomiting in third trimester pregnant women. In this study, the intervention was also carried out for 4 days, with a mild to moderate PUQE scale (Pre). Respondents in this study took the first and second trimesters of pregnancy, age range 6 – 20 weeks. Meanwhile in this study only the first trimester of pregnancy (<16 weeks), the scale of nausea and vomiting before the intervention also varied from mild, moderate and severe, both in the intervention group and the control group.

Peppermint aromatherapy contains menthol (35-45%), menthone, menthyl acetate, neomenthol, isomenthone, limonene, rosmarinic acid, and flavonoids. It exhibits spasmolytic effects on the smooth muscles of the gastrointestinal tract but also antiviral, antimicrobial or diuretic activity. Both peppermint oil and menthol can positively influence nausea and vomiting by acting on the 5-HT_{2A} (Mahmoud dkk, 2013)(Sarecka H B, 2022) receptor ion channel complex.

CONCLUSION

Respondents were generally of productive age, but there were still young people, the majority were of Javanese ethnicity, general education was high school, housewife status, on average multigravida. There was a decrease in the degree of nausea and vomiting in the intervention group after being given peppermint aromatherapy compared to the control group. Peppermint aromatherapy is effective in reducing nausea and vomiting in pregnant women. Further research is recommended by comparing other aromatherapy with multigravida respondents with daily recall of nausea and vomiting complaints to assess the effectiveness of earlier intervention.

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