

THE EFFECTIVENESS OF PERICARDIUM ACUPRESSURE AND PEPPERMINT AROMATHERAPY TO REDUCE NAUSEA AND VOMITING IN PREGNANT WOMEN TM I

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ABSTRAK: EFEKTIVITAS AKUPRESUR PERIKARDIUM DAN AROMA TERAPI PEPPERMINT DALAM MENGURANGI RASA MUAL DAN MUNTAH PADA IBU HAMIL TM I

Latar Belakang: Mual dan muntah merupakan masalah yang terjadi pada trimester I dengan frekuensi muntah kurang dari 5 kali sehari selama kehamilan. Mual dan muntah terjadi pada 60-80% ibu hamil pertama (primigravida) dan 40-60% pada ibu multigravida. Penyebab mual dan muntah ibu hamil tidak diketahui dengan pasti, berdasarkan beberapa ahli menyebutkan mual dan muntah terjadi karena perubahan hormon, imunologis, dan anatomi. Akupresure dan aroma terapi merupakan terapi alternatif yang aman dan non-invasif.

Tujuan Untuk mengetahui perbedaan efektifitas terapi akupresur dengan aromaterapi pappermint terhadap penurunan emesis gravidarum pada ibu hamil trimester I.

Metode: Penelitian ini merupakan penelitian Quasi Experimen dengan design Pretest- Posttest With Control Group. Populasi penelitian ini adalah seluruh ibu hamil trimester I yang datang di Klinik Taman Sari 6 sebanyak masing-masing 15 sample. Populasi dalam penelitian ini adalah seluruh ibu hamil yang melakukan pemeriksaan kehamilan di klinik Taman Sari bulan Februari – Agustus 2022. Teknik pengambilan sampel menggunakan Purposive Sampling dengan sample berjumlah 30 orang. Penelitian dilakukan dengan cara kunjungan rumah, selanjutnya dilakukan *pre-test*, di lakukan akupresure pada kelompok perlakuan dan aroma terapi peppermint pada kelompok control dalam waktu 3 hari pada pagi hari dan setelah hari ke 3 dilakukan *post-test*. Instrumen dalam penelitian ini Lembar kuesioner *Pregnancy- Unique Quantification of Emesis-24* (PUQE 24). Analisa data secara univariat dan bivariate menggunakan Uji Two Sample T Test.

Hasil : Hasil analisi univariat dari 15 responden pada masing-masing grup diperoleh rata-rata frekuensi mual dan muntah pada ibu hamil trimester I sebelum diberikan akupresur pada titik perikardium 6 adalah sebesar 2.26 (SD 0.46) dan sesudah diberikan terjadi penurunan frekuensi mual dan muntah dengan nilai rata-rata sebesar 1,53 (SD 0.51) ada perbedaan selisih rata-rata frekuensi mual dan muntah antara sebelum dan sesudah intervensi yaitu 0,75. Dan rata-rata frekuensi mual dan muntah pada ibu hamil trimester I sebelum diberikan aroma terapi peppermint adalah sebesar 2.33 (SD 0.49) dan sesudah diberikan terjadi penurunan frekuensi mual dan muntah dengan nilai rata-rata sebesar 1,8 (SD 0.41) ada perbedaan selisih rata-rata frekuensi mual dan muntah antara sebelum dan sesudah intervensi yaitu 0,53. Hasil analisis bivariate dengan uji *mann whitney* di dapatkan *p-value* $0,002 < \alpha (0,05)$ yang artinya ada pengaruh akupresur pericardium dan aroma terapi peppermin terhadap penurunan emesis gravidarum ibu hamil TM I.

Kesimpulan: Ada pengaruh akupresur P6 dan aroma terapi peppermint untuk megurangi mual dan muntah pada ibu hamil TM I.

Saran : Bagi tenaga kesehatan diharapkan untuk menerapkan akupresur pada titik perikardium 6 dan aroma terapi peppermint sebagai alternatif terapi non-farmakologi untuk ibu hamil trimester I dengan mual dan muntah.

Kata Kunci : mual, muntah, akupresur P6, aroma terapi peppermint, ibu hamil

ABSTRACT

Background: Nausea and vomiting are problems that occur in the first trimester with a frequency of vomiting less than 5 times a day during pregnancy. Nausea and vomiting occur in 60-80% of first-time pregnant women (primigravida) and 40-60% of multigravida mothers. The cause of nausea and vomiting in pregnant women is not known for sure, based on several experts, nausea and vomiting occur due to hormonal, immunological, and anatomical changes. Acupressure and aromatherapy are safe and non-invasive alternative therapies.

Purpose: To determine the difference in effectiveness between acupressure therapy and peppermint aromatherapy in reducing emesis gravidarum in pregnant women in the first trimester.

Method: This study is a Quasi Experimental study with a Pretest-Posttest With Control Group design. The population of this study were all pregnant women in the first trimester who came to the Taman Sari 6 Clinic, 15

samples each. The population in this study were all pregnant women who underwent pregnancy check-ups at the Taman Sari clinic in February - August 2022. The sampling technique used Purposive Sampling with a sample of 30 people. The study was conducted by means of home visits, then a pre-test was carried out, acupressure was carried out on the treatment group and peppermint aromatherapy on the control group within 3 days in the morning and after the 3rd day a post-test was carried out. The instrument in this study was the Pregnancy-Unique Quantification of Emesis-24 (PUQE 24) questionnaire sheet. Univariate and bivariate data analysis used Two Sample T Test.

Results: The results of univariate analysis of 15 respondents in each group obtained the average frequency of nausea and vomiting in pregnant women in the first trimester before being given acupressure at the pericardium point 6 was 2.26 (SD 0.46) and after being given there was a decrease in the frequency of nausea and vomiting with an average value of 1.53 (SD 0.51) there was a difference in the average frequency of nausea and vomiting between before and after the intervention, which was 0.75. And the average frequency of nausea and vomiting in pregnant women in the first trimester before being given peppermint aromatherapy was 2.33 (SD 0.49) and after being given there was a decrease in the frequency of nausea and vomiting with an average value of 1.8 (SD 0.41) there was a difference in the average frequency of nausea and vomiting between before and after the intervention, which was 0.53. The results of the bivariate analysis using the Mann Whitney test obtained a p-value of $0.002 < \alpha(0.05)$, which means that there is an effect of pericardial acupressure and peppermint aromatherapy on reducing emesis gravidarum in pregnant women in the first trimester.

Conclusion: There is an effect of P6 acupressure and peppermint aromatherapy to reduce nausea and vomiting in pregnant women in the first trimester.

Suggestion: Health workers are expected to apply acupressure at the pericardium point 6 and peppermint aromatherapy as an alternative non-pharmacological therapy for pregnant women in the first trimester with nausea and vomiting.

Keywords: *Nausea, Vomiting, P6 Acupressure, Peppermint Aroma Therapy, Pregnant Women*

INTRODUCTION

Nausea and vomiting are problems that occur in the first trimester and occur in 60-80% of first-time pregnant women (primigravida) and 40-60% of multigravida mothers. WHO (World Health Organization) states that nausea and vomiting occur in at least 14% of all pregnancies in the world (HWO, 2010). The incidence of nausea and vomiting in Indonesia from 2,203 pregnancies, 24.6% of them experienced nausea and vomiting (Ministry of Health of the Republic of Indonesia, 2010). The degree of nausea and vomiting was 52.2% experiencing mild vomiting, 45.3% experiencing moderate nausea and vomiting and 2.5% experiencing severe nausea and vomiting. Nausea and vomiting can be caused by various factors. Physiopathological factors include the hormones hCG (human chorionic gonadotrophin), estrogen and progesterone, serotonin, impact on the ability to smell or see, and changes in thyroid hormones, adaptation of the gastrointestinal tract, while predisposing factors for nausea and vomiting include fatigue, psychosocial factors, history of previous pregnancies, use of contraceptive pills during preconception, socio-economic factors and smoking (Indah Sari & Wahyuningsih, 2021a)

Untreated nausea and vomiting will cause hyperemesis gravidarum. According to Munch in

Tiran 2008, nausea and vomiting can have a severe impact if ignored because it is considered normal in the first trimester which results in emotional tension, psychological stress, malnutrition and dehydration. In addition, mothers who experience nausea and vomiting are at risk of giving birth to babies with low birth weight (Festin, 2014). Handling nausea and vomiting does not only use pharmacological therapy but can use complementary therapy that has developed in society, with about one third of the population using some type of therapy or complementary treatment. This is due to changes in people's expectations and choices to minimize the use of drugs that can cause adverse side effects (Dhilon & Azni, 2018).

Complementary therapies that can be used are acupressure or acupuncture, peppermint and ginger herbs. Herbal medicine and essential oils have been widely practiced routinely in Indonesia such as peppermint aromatherapy obtained from all parts of the plant. The main content of peppermint is menthol which provides carminative and antispasmodic effects has a very high level of fragrance, has a cool and refreshing aroma (Agusta, 2000). The results of previous research conducted by Kartikasari., et al. 2017 the effect of peppermint aromatherapy to reduce nausea and vomiting in pregnant women obtained results before being given

peppermint aromatherapy 70% after being given peppermint aromatherapy by using tissue dripped with 1-5 drops of peppermint essential oil and inhaled directly for 5-10 minutes with a frequency of 2 times a day, the results were 95% concluded that there was an effect of giving peppermint aromatherapy to reduce nausea and 5% or 1 respondent experienced vomiting with a frequency of 4-6 times / day .(O'Donnell et al., 2016a; Somoyani, 2018)

Complementary therapy that can be done in addition to peppermint aromatherapy is acupressure therapy. Acupressure is a well-accepted treatment, with a relatively low incidence of adverse effects. The use of acupressure in pregnancy has many positive results, is easy to do, is free of danger, and can be done by yourself in women who experience nausea and vomiting. Based on previous research, further research is needed to determine the effectiveness of peppermint aromatherapy with acupressure therapy to reduce nausea and vomiting in pregnant women. In addition, researchers modified the use of peppermint aromatherapy with acupressure therapy which was carried out for 3 days in the morning and evening for 15 minutes each. This study aims to see the effectiveness of peppermint aromatherapy with acupressure therapy. The incidence of nausea and vomiting which is still quite high in Indonesia is the basis for this study because the public considers nausea and vomiting to be a common thing experienced by every pregnant woman (Dan et al., 2015; Festin, 2014; Fugh-Berman & Kronenberg, 2003).

RESEARCH METHODS

This study is a Quasi Experimental study with a Pretest-Posttest With Control Group design, which is an experimental design carried out with a pretest

before being given treatment, then given treatment, and then a posttest. The research variables consist of independent variables and dependent variables. The independent variables are acupressure and peppermint aromatherapy, the dependent variable is nausea and vomiting in pregnant women in the first trimester. The approach used is cross-sectional. This study was conducted at the Taman Sari 6 Clinic, Pekanbaru City. The population in this study were all pregnant women who underwent pregnancy check-ups at the Taman Sari clinic from February to August 2022. The sampling technique used purposive sampling with a sample size of 30 people with each division of 15 pregnant women in the control group and 15 pregnant women in the intervention group. The study was conducted by means of home visits, then informed consent and pre-test were carried out after which acupressure was carried out on the treatment group and peppermint aromatherapy on the control group within 3 days in the morning and after the 3rd day a post-test was carried out. The instrument in this study was the Pregnancy Questionnaire Sheet- Unique Quantification of Emesis-24 (PUQE 24). Univariate and bivariate data analysis used dependent t-test.

RESULT AND DISCUSSIONS

This research was conducted at the Taman Sari 6 Clinic, Pekanbaru City, located on Jalan Garuda Sakti Gang Budi Luhur No. 40 Simpang Baru District, Pekanbaru City. This research began in Februari to Desember 2021 with a total of 30 respondents whose data was taken before and after being given acupressure at pericardium point 6 and Peppermint Aroma Therapy. The results obtained are presented in the tables below:

Table 1
Average Frequency of Nausea and Vomiting Before and After Giving Acupressure at Pericardium Point 6 to First Trimester Pregnant Women at Taman Sari 6 Clinic, Pekanbaru City

Kelompok	N	Mean	SD	Min	Max
Before Intervention (Pre)	15	2.26	0.46	2	3
After Intervention (Post)	15	1.53	0.51	1	2

In table 1.1 it can be seen that the average frequency of nausea and vomiting in first trimester pregnant women before being given acupressure at pericardium point 6 was 2.26 (SD 0.46) and after

being given acupressure at pericardium point 6 there was a decrease in the frequency of nausea and vomiting with the mean value was 1.53 (SD 0.41).

Table 2
Average Frequency of Nausea and Vomiting Before and After Giving Peppermint Aroma Therapy to First Trimester Pregnant Women at Taman Sari 6 Clinic, Pekanbaru City

Kelompok	N	Mean	SD	Min	Max
Before Intervention (Pre)	15	2.33	0.49	2	3
After Intervention (Post)	15	1.8	0.41	1	2

In table 2 it can be seen that the average frequency of nausea and vomiting in first trimester pregnant women before being given *peppermint aroma therapy* was 2.33 (SD 0.49) and after being

given *peppermint aroma therapy* there was a decrease in the frequency of nausea and vomiting with the mean value was 1,8 (SD 0.41).

Table 3

The Effect of Acupressure on Pericardium Point 6 and Peppermint Aromatherapy to First Trimester Pregnant Women Against Nausea and Vomiting During Pregnancy at Taman Sari Clinic 6, Pekanbaru City

Group	N	Mean	Elementary School	p-value
Acupressure	15	1,53	0.52	0.002
Peppermint Aromatherapy	15	1.8	0.41	

In table 3 it can be seen that the results of the Two Group with a confidence level of 95% show that there is an effect of Acupressure on Pericardium Point 6 and Peppermint Aromatherapy to First Trimester Pregnant Women Against Nausea and Vomiting During Pregnancy (0.002).

DISCUSSIONS

The results of a study conducted at the Pratama Tman Sari 6 Clinic, Pekanbaru on the effect of acupressure on the pericardium point 6 on nausea and vomiting in pregnant women in the first trimester from February to December 2021 showed that the average frequency of nausea and vomiting before acupressure was given at the pericardium point 6 was 2.28 (SD 0.46) and after it was given, there was a decrease in the frequency of nausea and vomiting with an average value of 1.53 (SD 0.52). This means that there was a decrease in the frequency of nausea and vomiting before and after acupressure was given at the pericardium point 6. In the 24 hours before the acupressure intervention was given at the pericardium point 6, pregnant women experienced nausea and vomiting with a minimum score of 5 and a maximum of 11. This is categorized as a moderate level of nausea and vomiting. In the 24 hours after the acupressure intervention was given at the pericardium point 6, pregnant women experienced nausea and vomiting with a minimum score of 3 and a maximum of 8. This is categorized as a mild level of nausea and vomiting. While in the control group, the average frequency of nausea and vomiting in pregnant women in the first trimester before being given *peppermint aromatherapy* was 2.33 (SD 0.49) and after being given there was a decrease in the frequency of nausea and vomiting with an average value of 1.8 (SD 0.41). The results of the Two Sample T Test showed that there was an effect of

acupressure and peppermint aromatherapy on the pericardium point 6 (p-0.002).

In this study, the results showed that there was a decrease in the frequency of nausea and vomiting in pregnant women after acupressure therapy, the average frequency of nausea and vomiting in pregnant women before acupressure therapy intervention was 2.28 and after intervention with acupressure therapy at point P6 was 1.53 so it can be concluded that there is a difference in the average frequency of nausea and vomiting between before and after the intervention, which is 0.75. While in the control group, the average frequency of nausea and vomiting in pregnant women before being given *peppermint aromatherapy* was 2.33 and after being given *peppermint aromatherapy* was 1.80 so it can be concluded that there is a difference in the average frequency of nausea and vomiting between before and after the intervention, which is 0.53. The difference in the decrease in the intensity of nausea and vomiting in the Acupressure group was higher than in the aromatherapy group, so it can be concluded that pericardial acupressure at point P6 is more effective in reducing nausea and vomiting compared to aromatherapy.

Nausea and vomiting during pregnancy are caused by increased levels of the hormones estrogen and progesterone produced by Chronionic Gonadotropin (HCG) in the placenta. Pregnant women who experience nausea and vomiting are natural symptoms that will be felt in the first trimester, usually the mother will experience signs of symptoms such as dizziness, excessive salivation, and throwing up some food or even everything that has been consumed. In addition, many cases of pregnant women experience excessive nausea and vomiting which can worsen the mother's general condition and can interfere with the daily activities of pregnant

women (Dunbar et al., 2022; Liu et al., 2022). Nausea and vomiting in pregnancy can have serious consequences for the mother and especially the fetus. Low Birth Weight (LBW) and premature birth are the most common consequences that can endanger the fetus due to the severity of nausea and vomiting experienced by the mother (Fadhilah et al., 2021)

Pregnant women are required to be able to adapt to complaints of nausea and vomiting, if they cannot adapt it can endanger both the pregnant woman and the fetus in her womb. Pregnant women who experience nausea and vomiting really need adequate nutrition (Boelig et al., 2017; Fejzo et al., 2019). Pregnant women will experience complications if nausea and vomiting are not treated. Malnutrition and dehydration are the most obvious complications. If pregnant women cannot handle it properly, it can result in loss of fluid in the stomach which results in dehydration, hypokalemia, and metabolic alkalosis (Can Gürkan & Arslan, 2008; Indah Sari & Wahyuningsih, 2021b; Lacasse et al., 2008; Mariza & Ayuningtias, 2019). What can be done to prevent these complications is to carry out management. Treatment of pregnant women to overcome nausea and vomiting is done through pharmacological and non-pharmacological treatment. Antihistamines, antimycotics, and corticosteroids are pharmacological therapies that can be given to pregnant women when experiencing nausea and vomiting. While non-pharmacological therapy for complaints of nausea and vomiting in pregnant women is done by regulating diet, aromatherapy, emotional support, acupressure and ginger (Hu et al., 2022; McParlin et al., 2016).

Reducing nausea and vomiting during pregnancy with *peppermint* aromatherapy is done through inhalation of volatile molecules of essential oils that pass through the *olfactory receptors* in the nose, recognize the molecular characteristics and send signals to the brain through the *olfactory nerves*, some of these elements enter the bloodstream through the lungs and directly affect the brain nerves blocking *gastrointestinal receptors* and the area *postrema* related to serotonin in the *chemoreceptor trigger zone* (ATZ) to the *medulla oblongata*, thus preventing nausea and vomiting so that nausea and vomiting can decrease due to a sense of relaxation and stable emotions, the *chemoreceptor trigger zone* (ATZ) works directly on the muscles, namely the smooth muscles of the respiratory tract, namely the diaphragm and abdominal muscles, so that nausea and vomiting decrease (Putri, 2010). The main principle of *peppermint* aromatherapy is the use of the smell of plants or flowers to change the condition

of feelings, psychology, spiritual status and affect a person's physical condition through the relationship between the patient's mind and body (Cartens, 2010)

The results of this study are the same as the study conducted in 2017 by Andriani, et al. on the effect of *peppermint aromatherapy* on the incidence of nausea and vomiting in pregnant women in the first trimester at the Melati II Health Center, Sleman, Yogyakarta, there was a difference in the average frequency of nausea and vomiting in pregnant women in the first trimester before being given *peppermint aromatherapy* of 7.64 and the average nausea and vomiting of respondents who were given was 6.11. The decrease in the frequency of nausea and vomiting after being given was 1.53. This study proves that there is a significant difference before and after being given *peppermint aromatherapy*.

Non-pharmacological treatment with acupressure method is a safe method for pregnant women and their fetuses. This acupressure technique is a development of massage therapy, and is closely related to the development of acupuncture, because acupressure technique comes from acupuncture. Acupressure therapy is done using fingers to replace needles, but is still done at the same points in acupuncture therapy (O'Donnell et al., 2016b; Sulistiarini et al., 2018). Acupressure at the pericardium point 6 is located three fingers above the wrist between the flexor carpi radialis tendon and the palmaris longus muscle. Acupressure at the pericardium point 6 can reduce nausea and vomiting because the stimulation can increase the release of beta-endorphin through the pericardium, penetrating the diaphragm. across the stomach and large intestine is transmitted through afferent nerves to the brain and beta-endorphin blocks receptors that stimulate vomiting in the *mor2ceptor Trigger Zone* (CTZ) and the vomiting center so that nausea and vomiting decrease (Fadhilah et al., 2021; Indah Sari & Wahyuningsih, 2021b).

The results of this study are supported by research conducted by Sari and Wahyuningsih (2021) (Indah Sari & Wahyuningsih, 2021b) entitled "The Effectiveness of Acupressure Therapy on Decreasing Complaints of Nausea and Vomiting in Pregnant Women" states that there is an effect of acupressure on reducing nausea and vomiting in pregnant women in the first trimester. A similar study conducted by Nanik and Afiah (2019) entitled The Effect of Acupressure on Reducing Nausea and Vomiting in Pregnant Women at the Independent Midwife Practice in Sidoarjo found that from 11 samples of pregnant women in the intervention group, there was a decrease in nausea and vomiting

from an average initial score of nausea and vomiting of 8 to 5 after being given intervention and $p = 0.010$ meaning that acupressure has an effect on reducing nausea and vomiting (Handayani & Afyah, 2019).

Another supporting study was also conducted by Gurkan and Arslan (Can Gürkan & Arslan, 2008) on the Effect of Acupressure on Nausea and Vomiting During Pregnancy showing that Acupressure is effective in controlling and reducing symptoms of nausea and vomiting during pregnancy ($p = 0.001$). The same study by Fadhilah et al (2020) (Fadhilah et al., 2021) entitled Effect of Pericardium Point Acupressure 6 on Gravidarum Emesis Trimester I Pregnant Women at the Working Area Public Health Center Koto Berapak In 2020 showed that the average score of emesis gravidarum before acupressure in the experimental group was 8.69 ± 0.48 and the control group was 7.62 ± 1.19 . The mean emesis gravidarum score after acupressure in the experimental group was 3.31 ± 0.48 and the control group was 5.69 ± 1.75 . The mean decrease in emesis gravidarum score in the experimental group was 5.38 ± 0.50 and the control group was 1.92 ± 1.80 . There was a significant difference in emesis gravidarum score between the experimental and control groups ($p < 0.05$). The conclusion of this study is that there is an effect of acupressure on pericardium point 6 in the form of a significant decrease in the frequency of nausea and vomiting in pregnant women in the first trimester who experience emesis gravidarum.

According to the researcher's analysis, acupressure at the pericardium point can produce good evaluations in pregnant women who experience nausea and vomiting with mild to moderate nausea and vomiting categories. Acupressure at the Pericardium 6 point is a more practical, cost-effective, side-effect-free method and focuses more on the body's nerve points so that it can be used as the right solution to reduce nausea and vomiting in pregnant women. In addition, acupressure at the pericardium 6 point has been widely studied with many positive results for relieving nausea and vomiting in pregnant women. The initial pressure intensity is done gently, then the pressure strength is gradually increased but does not cause pain to the patient. Pressure is given by rotating clockwise. The duration of P6 acupressure therapy using the thumb is 5-10 minutes once a day, namely in the morning. This intervention can be done in a sitting or lying position in a comfortable position for the patient.

CONCLUSION

Acupressure and peppermint aromatherapy are the safest therapies to reduce nausea and vomiting for pregnant women in the first trimester. This therapy is a safe and non-invasive alternative treatment. So it is hoped that the use of this therapy can reduce the use of drugs that have an impact on the body and are low cost. There is an effect of P6 acupressure and peppermint aromatherapy to reduce nausea and vomiting in pregnant women in the first trimester.

SUGGESTIONS

Health workers are expected to apply acupressure at the pericardium point 6 and peppermint aromatherapy as an alternative non-pharmacological therapy for pregnant women in the first trimester with nausea and vomiting.

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