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Pericardium 6 (PC6) Acupressure in Reducing the Frequency of Emesis Gravidarum in First Trimester Pregnant Women in the Work Area of Community Health Center X

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ABSTRACT: This study aimed to determine the effectiveness of one of the non-pharmacological therapies for emesis gravidarum, namely PC6 acupressure massage, on the frequency of emesis gravidarum at Community Health Center X. The study design was quasi-experimental with two groups of pre-test and post-test designs. The sample consisted of 30 people, 15 for the experimental group and 15 for the control group. The sampling technique is purposive sampling with specific inclusion criteria. The results of the study based on the Wilcoxon test, it was known that there was a decrease in emesis gravidarum in first trimester pregnant women before and after acupressure massage at the PC6 point for the experimental and control groups. While the results of the Mann-Whitney test obtained a p-value of 0.324 > 0.05, meaning that between the experimental group and the control group, there was no difference in the decrease in the frequency of emesis gravidarum.

Keywords: pericardium acupresure, emesis gravidarum, first trimester, pregnant woman

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INTRODUCTION

Emesis Gravidarum is a condition of nausea and vomiting in pregnancy that generally occurs in the first trimester of pregnancy as a result of hormonal changes. Emesis Gravidarum is a physiological condition, but if left untreated, it can become pathological. Excessive nausea and vomiting will hurt pregnancy, childbirth, and newborns. Under normal conditions, emesis occurs in the morning, but some last until the evening depending on the situation of each pregnant woman (WHO, 2019) ; (Prawirohardjo et al., 2016).

The incidence of Emesis Gravidarum in the first trimester of pregnancy in Indonesia is estimated to be around 70% based on subjective complaints submitted to health service agencies. Furthermore, if it is not immediately addressed, it will further increase the incidence of Hyperemesis Gravidarum. According to WHO, hyperemesis gravidarum reaches 12.55 of the total number of pregnancies globally with various complaints (WHO, 2019) ; (Kementrian Kesehatan RI, 2018).

Commonly emesis occurs in the first three months of pregnancy with a frequency of 3-5 times a day and generally occurs in the morning. If not treated, it will last longer, even up to 9 months of pregnancy. This condition is caused by increased levels of the hormone estrogen and chorionic hormone gonadotropin (HCG) in the serum of physiological changes. Most pregnant women who experience nausea and vomiting do not know how to deal with complaints of nausea and vomiting, but if it interferes with their activities, they will go to the nearest hospital or health facility and be given anti-vomiting drugs (Departemen Kesehatan RI, 2013); (Ismail & Kenny, 2007).

The use of drugs for pregnant women needs to be considered because there are many changes in the pharmacokinetics and pharmacodynamics of medications during pregnancy. Therefore, it is necessary to handle nausea and vomiting that is safer for pregnancy, one of which is doing an Acupressure Massage. Acupressure massage is pressing the pericardium point 6 (PC 6) for 10 minutes or more, aiming to reduce emesis gravidarum. PC 6 point is one of the points used for emergency cases with nausea and vomiting. Physiologically, massage stimulates and regulates the body and improves blood and lymph flow. Oxygen, nutrients, and food waste are carried effectively to and from body tissues and the placenta. Giving massage will be able to balance the increased estrogen levels and prevent the accumulation of toxic substances (Noroozinia et al., 2013); (Mardiatun, 2013).

The results of research conducted by (Purnama, 2010) found that the results of the data analysis test with the paired sample t-test and the Wilcoxon test showed that there were differences in the frequency of nausea and vomiting, the duration and intensity of nausea and vomiting before and after acupressure measures (frequency of nausea and vomiting). =0.000, vomiting frequency: p=0.001, nausea duration p=0.026, vomiting duration: p=0.011, nausea intensity: p=0.011 and vomiting intensity p=0.007). This study concludes that acupressure is effective in reducing nausea and vomiting in first-trimester pregnant women.

The results of a preliminary study in the working area of Puskesmas X on five pregnant women who experienced emesis gravidarum did not know how to

deal with it and did not dare to take anti-nausea drugs because they were worried that it would affect the condition of their pregnancy so that so far nausea and vomiting felt had never been explicitly handled. Acupressure massage at point PC 6 has not been widely explained by other researchers on nausea and vomiting, so researchers are interested in researching "The Effectiveness of Acupressure Massage on the Incidence of Emesis Gravidarum in First Trimester Pregnant Women in the Work Area of Puskesmas X."

THEORETICAL REVIEW

Emesis Gravidarum is a common complaint experienced in early pregnancy. The occurrence of pregnancy causes hormonal changes in women because there is an increase in the hormones estrogen and progesterone and the release of the placental chorionic gonadotrophin hormone. These hormones are thought to cause emesis of gravidarum (Ida Bagus Gde, 2012). Emesis Gravidarum is a usual symptom that occurs in pregnant women. Still, the symptoms become very dangerous if Emesis Gravidarum gets worse into Hyperemesis Gravidarum or continuous nausea and vomiting, which can lead to the death of the mother and fetus in the womb (Rachmaningtyas, 2013).

Nausea and vomiting in pregnancy are generally called morning sickness, experienced by about 70-80% of pregnant women, and is a phenomenon that often occurs at 4-12 weeks of gestation. Nausea and vomiting in pregnancy are usually mild and can be controlled according to individual conditions. From the results of (Lacasse et al., 2009) of 367 pregnant women, 78.47% of nausea and vomiting occurred in the first trimester, with the degree of nausea and vomiting, namely 52.2% experiencing mild nausea and vomiting, 45.3% experiencing moderate nausea and vomiting and 2.5% experience severe nausea and vomiting (Runiari, 2010); (Fitria et al., 2015).

The causes of emesis gravidarum, according to (Suririnah, 2008), are, (1) The cause is unknown but is thought to be caused by an increase in sex hormones produced during pregnancy. (2) Confirmed due to sensitivity to pregnancy hormones. However, it would be overkill if the mother-to-be was overly anxious or under emotional stress. Nausea in the morning is more common than at any other time because the stomach contains a buildup of gastric acid deposited overnight. (3) Hormonal changes will result in excessive gastric secretion, especially in the morning. (4) Feelings of nausea and vomiting in pregnant women are caused because the bowel movements become slow during early pregnancy due to the influence of pituitary hormones. (5) The exact cause is unknown, presumably due to the influence of psychological changes and hormonal changes during pregnancy. Nausea and vomiting in pregnant women are caused by the mother's emotional response to pregnancy and an increase in the HCG hormone. In addition, according to (Ida Bagus Gde, 2012), other causes of emesis predisposition are also influenced by psychological factors, environmental hygiene, socio-cultural and family support.

According to severity, mild, and symptoms, nausea and vomiting are divided into 3 (Prawirohardjo et al., 2016), namely:

a) First Stage: Nausea can be described as an awful feeling in the back of the throat and epigastrium, often causing vomiting. There are various gastrointestinal activities associated with nausea, such as increased salivation, decreased gastric tone, and peristalsis

b) Second stage: Retching is an involuntary attempt to vomit, often accompanying nausea and occurring before vomiting, consisting of spasmodic respiratory movements against the glottis and inspiratory movements of the chest wall and diaphragm.

c) Third stage: Vomiting is a reflex that causes expiratory urge of gastric and intestinal contents to the mouth. The vomiting center receives input from the cerebral cortex, vestibular organs, and chemoreceptor trigger areas.

Emesis of gravidarum in pregnant women can cause various impacts on pregnant women, one of which is a decrease in appetite, which results in changes in electrolyte balance, namely potassium, calcium, and sodium, causing changes in body metabolism (Wendy Rose-Neil, 2006). If it continues, it will cause Hyperemesis gravidarum, which has an impact on pregnant women, as described by Anggraini and Subekti (2013), namely as follows: (1) Fluid and electrolyte balance in the body, (2) Lack of energy, (3) Decreased blood flow. Blood to body tissues, (4) Lack of potassium, which can cause urinary tract and kidney disorders, (5) There can be tears in the esophagus and stomach mucous membranes.

One of the non-pharmacological treatments for emesis of gravidarum is using Acupressure Massage. Acupressure is the application of firm and continuous pressure to specific locations on certain body areas to reduce pain, produce relaxation and prevent or reduce nausea (Judith M. Wilkinson & Nancy R. Ahern, 2015). Acupressure or commonly known as finger prick acupressure therapy, is one of them. A form of physiotherapy provides massage and stimulation at specific points on the body (Fengge, 2012).

Acupressure is a treatment method that provides suppressive stimulation (massage) at specific points on the body (Fengge, 2012). immune cells to specific sites in the body that are injured or damaged by disease. 2. Activate the opioid system so that it can reduce pain. 3. Changes in brain chemistry, sensation, and involuntary responses with the release of various neurotransmitters and neuro hormones. The points that are often massaged to reduce nausea and vomiting are Pericardium 6 (PC 6) points. PC 6 point is a point located in the meridian's path of the heart membrane. The meridian of the membranes of the heart has two branches, a branch of which enters the membrane of the heart and the heart, then continues down through the diaphragm, into the middle and lower chambers of the abdomen. This meridian also traverses the stomach and large intestine. (Fengge, 2012). PC6 point is a point that has many features. Manipulation at the PC6 point can also aim to calm emotions and relieve stress (Sukanta, 2008); (Lepcha, K, 2020).

The measurement of nausea and vomiting uses Pregnancy-Unique Quantification of Emesis/Nausea (PUQE). PUQE is an instrument used to measure the severity of nausea and vomiting in pregnancy. PUQE looks at quantitative values based on nausea, vomiting, and dry vomiting conditions. In

this study, the PUQE-12 hours were used using a Likert scale of 1-5. The theoretical framework of this research can be seen in Figure 1.

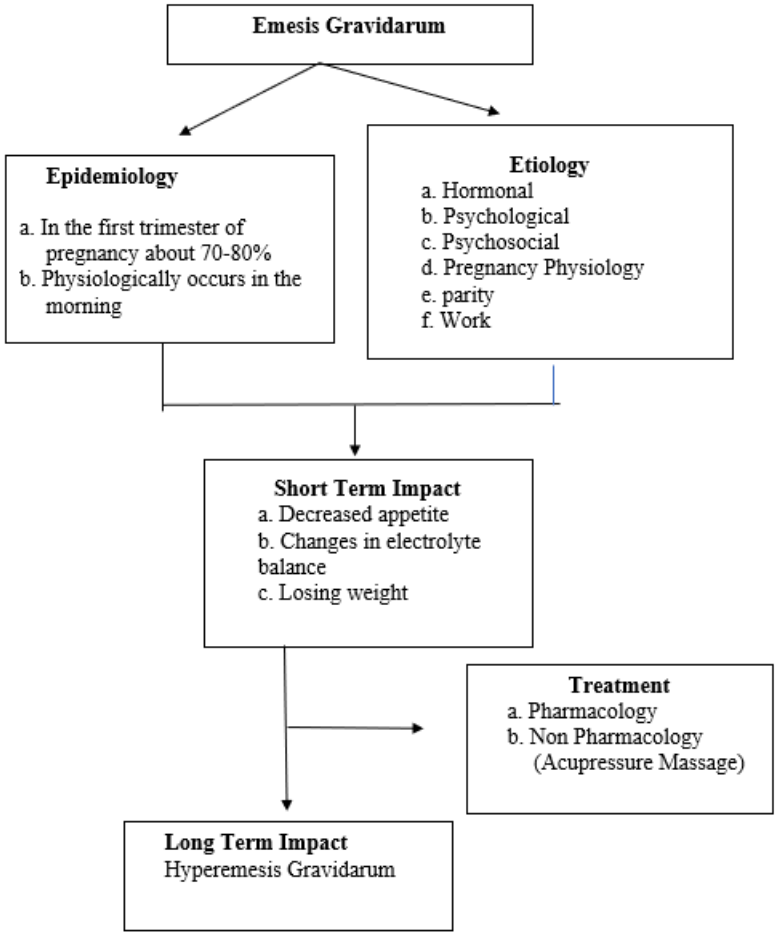


Figure 1. Theoretical Framework

METHODOLOGY

This study used a quasi-experimental design with two groups pre-test and post-test design. The population of this study was all pregnant women in the first trimester who were in the Work Area of the Community Health Center X. The research sample used a minimum model comparing the number of the experimental group, 15 people, and the control group, 15 people (comparison 1:1). The experimental group was given acupressure massage at the PC6 point for 30 minutes, and the control group was assigned acupressure massage at the PC6 end for 5 minutes.

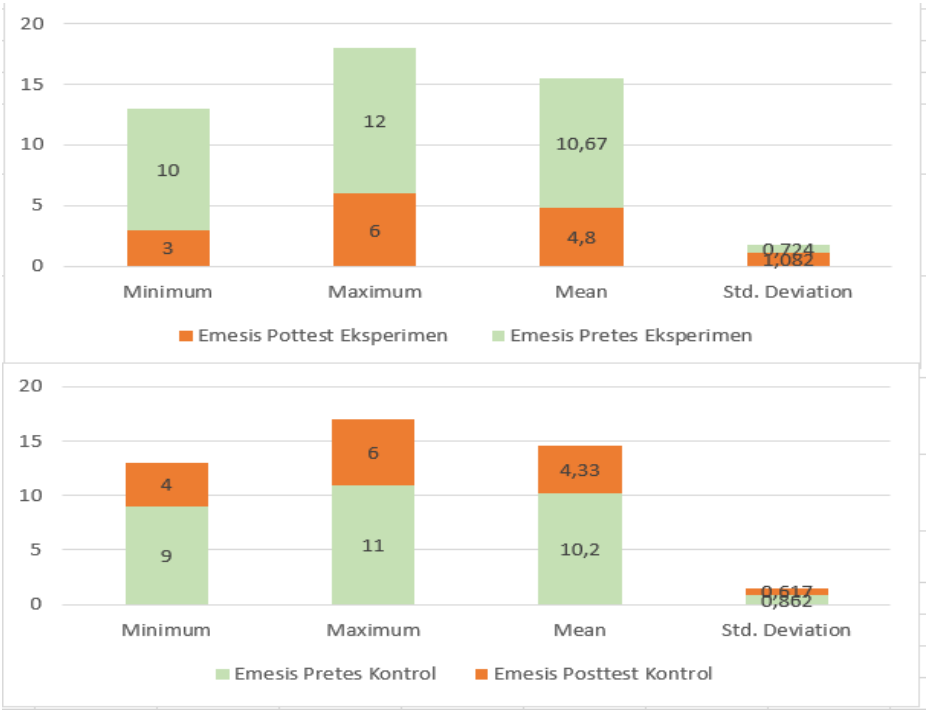
The sampling technique used purposive sampling with inclusion criteria, namely pregnant women in the 1st trimester (weeks 1-12) who live in the working area of Community Health Center X, willing to be respondents, permitted by their husbands to be respondents, pregnant women with their first child and never having an abortion (primigravida), maternal age in the healthy reproductive age range of 25-30 years, experiencing emesis gravidarum in the morning only with a frequency of fewer than five times, has had the first

Antenatal Care (KI) visit as evidenced by the recapitulation of the book Maternal and Child Health, General Conditions of the Mother in good health based on the average size of the Vital Signs, namely Blood Pressure, Temperature, Pulse and Breathing.

The sample data used were controlled by the characteristics of the respondents, namely, age, education, and occupation. The frequency of nausea and vomiting in pregnant women uses the 12-hour Pregnancy-Unique Quantification of Emesis/Nausea (PUQE) instrument consisting of 3 questions with an answer scoring using a Likert scale (1-5). Data analysis consisted of univariate and bivariate analysis using Wilcoxon and Mann Whitney tests (Koren et al., 2005).

RESULTS

After the research process was carried out by measuring the frequency of emesis gravidarum in pregnant women in the trimester before and after being given acupressure massage at the PC6 point for 30 minutes in the experimental group and the same massage but within 5 minutes each for seven alternate days, then data analysis was carried out. The results of the univariate analysis can be seen in Graph 1.



Graph 1. Average Changes in the Frequency of Emesis Gravidarum Before and After PC6 Acupressure Massage in the experimental and control groups.

Based on Figure 1, it can be seen that the experimental group averaged the frequency of emesis gravidarum before being given acupressure massage (days 1,3,5,7,9,11,13) at point PC6 for 12 hours from 05.00 am to 05.00 pm. was 10.67 and after being given acupressure massage (days 2,4,6,8,10,12,14) the frequency

of emesis gravidarum decreased by an average of 4.8. In the experimental group, the average frequency of emesis gravidarum before (pretest) was given acupressure massage a maximum of 12 times in 12 hours/day. The intermediate frequency of emesis gravidarum was ten times in 12 hours/day with a standard deviation of 0.724. Meanwhile, the average frequency of emesis gravidarum after (posttest) was given acupressure massage a maximum of 6 times in 12 hours/day and a minimum of 3 times in 12 hours/day with a standard deviation of 1.082.

Based on Figure 1, it can also be seen that the control group averaged the frequency of emesis gravidarum before being given acupressure massage (days 1,3,5,7,9,11,13) at point PC6 for 12 hours from 05.00 am to 05.00 pm. was 10.2 and after being given acupressure massage (days 2,4,6,8,10,12,14) the frequency of emesis gravidarum decreased by an average of 4.33. In the experimental control group, the average frequency of emesis gravidarum before (pretest) was given acupressure massage a maximum of 11 times in 12 hours/day, and the intermediate frequency of emesis gravidarum was a minimum of nine times in 12 hours/day with a standard deviation of 0.617. Meanwhile, the average frequency of emesis gravidarum after (posttest) was given acupressure massage a maximum of 6 times in 12 hours/day and a minimum of 4 times in 12 hours/day with a standard deviation 0.862.

The normality test of the data using the Shapiro Wilk test shows that the sig value is 0.002 <0.05, which means that the data distribution is not normal. Therefore, bivariate analysis was carried out using the Wilcoxon and Mann Whitney tests. To see the frequency of emesis gravidarum before and after the effectiveness of acupressure massage in the experimental and control groups carried out using the Wilcoxon test in each group can be seen in Table 1.

Table 1. Wilcoxon Test Results

Group	Rank	N	Mean Rank	Asymp.sig (2-tailed)
Eksperimen	Negatif Ranks	15[a]	8,00	0,001
	Positif Ranks	0[b]		
	Ties	0[c]		
	Total	15		
Kontrol	Negatif Ranks	15[d]	8,00	
	Positif Ranks	0[e]		
	Ties	0[f]		
	Total	15		

Based on Table 1, it is known that in the experimental group, the Negative Ranks value was 15, meaning that the 15 pregnant women showed a decrease or reduction in the frequency of emesis gravidarum from the pretest and post-test values. With a mean rank value of 8, the average decline in the frequency of emesis gravidarum is eight, whereas the number of negative rankings is 120. Meanwhile, the same thing also happened in the control group. While the positive value of the rank of the experimental and control groups is 0, meaning that no respondents experienced an increase in the frequency of emesis gravidarum in the pretest and post-test. Similarly, the value of the tie is 0, which means that there is no equal value between the pretest and post-test in each

group. Statistical analysis showed a p-value of 0.001 < 005, suggesting that the experimental group before and after showed a decrease in emesis of gravidarum with an acupressure massage. The same thing happened to the dick group.

To assess whether there is a difference in the frequency of emesis gravidarum in the experimental and control groups, using the Mann-Whitney test with a p-value of 0.324 > 0.05, it means that the experimental group that was given acupressure massage for 30 minutes and the control group who was given acupressure massage for 5 minutes there was no difference. In decreasing the frequency of emesis gravidarum. This means that the experimental and control groups can reduce the frequency of emesis gravidarum before and after being given acupressure massage with different lengths.

DISCUSSION

Statistically, the Mann-Whitney test results showed no difference in the frequency of decreasing emesis gravidarum in the experimental and control groups after acupressure massage was given. However, the Wilcoxon test results showed a decrease in the frequency of emesis gravidarum before and after being given acupressure massage in the experimental group and the control group.

The results of this study are in line with research conducted by (Lepcha, K, 2020) on 80 pregnant women where the experimental group was given acupressure massage at P6 point and control without treatment. A p-value of 0.000 was obtained, which means that there was an effect of acupressure massage in the experimental group on decreasing nausea and vomiting during the 1st trimester of pregnancy. The measurement of nausea and vomiting uses the Rhodes scale.

It is also in line with the literature review conducted by (Indah Sari & Wahyuningsih, 2021), who concluded that giving P6 acupressure therapy when waking up, during the day, in the evening, and at night or four times a day for 10 minutes at a sitting position for seven days can reduce nausea and vomiting in pregnancy. They also concluded that acupressure was adequate for mild and moderate nausea and vomiting from 6-19 weeks of gestation, in which the mother's gestational age ranged from 18-40 years.

Furthermore, the same study was also carried out by (Dewi & Saidah, 2020), which concluded that acupressure therapy on points P6 and KID 21 was more effective in reducing nausea and vomiting of pregnancy in the experimental group than giving a placebo effect in the control group. They also proved that pressure at P6 and KID 21 points was safe and had no side effects. It was also reported that acupressure at point P6 was more effective in reducing nausea and vomiting in pregnancy.

Acupressure at point P6, which was given to the experimental group with 25 first trimester pregnant women, concluded that acupressure was more effective in reducing symptoms of nausea and vomiting during pregnancy than the control group who received a placebo. However, pregnant women's factors also considerably influence fluid and electrolyte adequacy (Can Gürkan & Arslan, 2008); (Aprianti et al., 2020); (Shin, 2013).

Acupressure at the PC6 or Neiguan point is gentle stimulation by applying pressure on the volar side of the wrist about 3cm above the wrist crease, between

the two tendons that are easily palpable. Giving this acupressure can reduce nausea and vomiting in mild cases, but in hyperemesis gravidarum, it is less effective in reducing nausea and vomiting (Rad et al., 2012); (Van den Heuvel et al., 2016); (WHO, 2019).

CONCLUSIONS AND RECOMMENDATIONS

This study showed the effectiveness of acupressure massage at the PC6 point on reducing emesis of gravidarum in first-trimester pregnant women with 5-30 minutes of administration. However, statistically, there was no difference between the experimental and control groups, meaning that they could both reduce emesis of gravidarum even though they differed in the duration of administration. This needs further studies that can control the characteristics of the sample, such as electrolyte balance or acupressure massage performed by the same therapist, so that the results can reduce bias in the study.

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