

Acupressure Technique Point P6 (Nei Guan) to Reduce Nausea and Vomiting and Point L14 (Hegu) to Reduce Anxiety in Pregnant Women

Siti Mudlikah

Universitas Muhammadiyah Gresik, Gresik, East Java, Indonesia

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CORRESPONDING AUTHOR

Siti Mudlikah

Jl. Proklamasi No. 54, Trate, Kec. Gresi

mudlikah@umg.ac.id

0895-1440-5851

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ABSTRACT

Nausea, vomiting, and anxiety can affect the food intake of pregnant women, and nutritional deficiencies can disrupt the growth and development of the fetus in the womb. This study aims to determine the difference between pre-test and post-test after applying acupressure techniques at point P6 (Nei Guan) to reduce nausea and vomiting, and at point L14 (Hegu) to reduce anxiety. The research method used a pure experimental design. The population consisted of first-trimester pregnant women, with a sample of 30 pregnant women divided into three groups of 10 each. Groups 1 and 2 were given acupressure techniques at points P6 (Nei Guan) and L14 (Hegu) for 15 minutes every morning upon waking for 7 days, while group 3 received no treatment. Data on the acupressure technique was collected through observation, using a checklist instrument. Data on nausea and vomiting was obtained from a questionnaire. Anxiety data was obtained from the Hamilton Rating Scale for Anxiety (HRS-A). The Wilcoxon analysis was used. Group 1 had an average decrease of 1.20 in nausea and a decrease of 1.10 in anxiety. Group 2 had an average decrease of 1.20 in nausea and a decrease of 1.50 in anxiety. Group 1 showed no difference in nausea but showed a difference in anxiety. Group 2 showed a difference in both nausea and anxiety.

Mual muntah dan cemas mempengaruhi gizi ibu hamil, kekurangan gizi dapat mengganggu pertumbuhan dan perkembangan janin. Tujuan penelitian untuk mengetahui teknik akupresur titik P6 (Nei Guan) untuk menurunkan mual muntah dan titik L14 (Hegu) untuk menurunkan cemas. Metode penelitian menggunakan rancangan experiment murni, Populasi ibu hamil trimester pertama, Sampel 30 ibu hamil, terdiri 3 kelompok masing-masing 10 ibu hamil, Kelompok 1 dan 2 diberi teknik akupresur titik P6 (Nei Guan) dan titik L14 (Hegu) waktu 15 menit setiap bangun tidur pagi hari selama 7 hari, kelompok 3 tidak diberi perlakuan. Pengambilan observasi, dan ceklis. Data mual muntah diperoleh dari kuesioner. Data cemas diperoleh dari (HRS-A). Analisis Wilcoxon yang digunakan dalam penelitian ini. Kelompok 1 rata-rata penurunan mual 1,20 dan penurunan cemas 1,10. kelompok 2 rata-rata penurunan mual muntah 1,20 dan penurunan cemas 1,50. Kelompok 1 tidak ada perbedaan mual muntah dan ada perbedaan cemas. Kelompok 2 ada perbedaan mual muntah dan cemas.

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Introduction

Pericardial point 6 (Nei Guan) acupressure is a massage technique that can stimulate the release of beta-endorphin in the pituitary and adrenocorticotrophic (ACTH) inhibits the vomiting center and controls the intestines (Kusumaningsih, 2022). Early pregnancy symptoms such as nausea and vomiting can decrease appetite and cause malnutrition (Mudlikah & Yunita, 2022). Nausea and vomiting are still considered normal symptoms of pregnancy, called morning sickness in the first trimester of pregnancy

at 0-12 weeks (Fauziah et al., 2019). The peak of nausea and vomiting occurs at 9 weeks of age in the morning after waking up (Yuliani & Helena, 2020).

Nausea and vomiting during pregnancy begin at 6-8 weeks of gestation and decrease at 20 weeks of gestation (Fatwa, 2020). Predisposing factors for nausea and vomiting during pregnancy are influenced by internal factors such as maternal age, parity, history of nausea and vomiting, and multiple pregnancies, and external factors such as economy, culture, occupation and family support (Rudiyanti & Rosmadewi, 2019; Yusuf & Wahyuni, 2018).

Prolonged nausea and vomiting during pregnancy can lead to malnutrition (Asyura & Maulidiyah, 2019). The impact can cause complications for both mother and fetus including fetal complications: and growth disorders (Asyura & Maulidiyah, 2019). BBLR congenital abnormalities, stunting, and asphyxia (Mudlikah et al., 2022). Maternal complications include pre-eclampsia, bleeding, infection and others (Anggasari & Anggraini, 2018).

The cause of nausea and vomiting during pregnancy is not known for certain. Each pregnant woman has different characteristics of nausea and vomiting. Several factors are suspected to trigger nausea and vomiting including increased production of estrogen hormone which stimulates stomach acid, formation of HCG (human chorionic gonadotropin) placenta hormone, changes in liver glycogen metabolism and psychological factors in pregnant women (Yuliani & Helena, 2020). Psychologically, anxiety symptoms are experienced by more than 50% of pregnant women, especially first-time pregnancies due to the most common inability to adapt to physical and psychological changes in the pregnancy process. Excessive anxiety can cause stress, depression and pregnancy complications.

The impact of emesis gravidarum results in decreased appetite causing malnutrition in pregnant women which can cause complications from anemia, pre-eclampsia, bleeding and even maternal death in Indonesia (Utama, 2021). Results of the 2018 Basic Health Research show that pregnant women lack calorie energy by 17.3%, with an anemia prevalence of 48.9% despite exceeding the target with additional food intake. However, the causes of maternal death include pre-eclampsia, anemia, and unfulfilled nutritional needs during pregnancy (Kemenkes RI, 2019). Based on data from Dinkes Kab. In Sidoarjo, pregnant women with complications are pre-eclampsia 48%, bleeding 39%, infection 9%, and heart 4% (Dinas Kesehatan Kabupaten Sidoarjo, 2018).

Government strategies in reducing malnutrition rates include; improving nutrition for 1000 days for pregnant women with KEK, pregnant women's classes, early detection of complications and their handling. Nausea and vomiting have the potential to cause malnutrition so prevention and treatment are needed both pharmacologically and non-pharmacologically.

The acupressure technique is a complementary therapy technique that continues to be developed in the health world. Several research results using acupressure techniques point P6, to find out a decrease in nausea and vomiting (Sharifzadeh et al., 2018). The P6 (Nei Guan) acupressure technique is applied through a massage in the area of three fingers below the wrist for 7 minutes and can reduce symptoms of nausea and vomiting. This technique stimulates the regulatory system and endocrine, neurological, and hypothalamic activities to release endorphins, creating a sense of relaxation. Another opinion

suggests that acupressure intervention for 12 hours every day for 3 days helps reduce hospitalization for hyperemesis gravidarum (Lestari et al., 2022). The acupressure technique can also reduce nausea and vomiting in tuberculosis patients with a duration of 15 minutes over 5 days (Platini et al., 2021). Acupressure is also an alternative to preventing anemia in pregnant women (Ningrum, 2022). However, there is no clarity about the frequency, and duration of acupressure techniques and P14 to reduce anxiety. This study will combine the pressure on points P6 and L14, namely: 1) finding a new concept of the effect of P6 acupressure technique on nausea and vomiting and L14 on maternal anxiety, 2) finding a new theory concept of differences in acupressure techniques on points P6 and L14 before and after being carried out.

A preliminary study in 2022 obtained information from 10 first-trimester pregnant women all experiencing nausea and vomiting and pregnant women experiencing anxiety as many as 4 people (40%) and 6 people (60%) were not anxious. From the characteristics of pregnant women obtained middle school education for 3 people and high school education for 7 people. The results of anamnesis knowledge about how to overcome nausea and vomiting were 100% unaware.

Based on this background, efforts are needed to overcome nausea during pregnancy reducing nausea and preventing anxiety which will be carried out in this study about “Acupressure Technique Point P6 (Nei Guan) to Reduce Nausea and Vomiting and Point L14 (Hegu) to Reduce Anxiety in Pregnant Women.”

Method

The research method used is the Pure Experiment Design. The population studied consists of first-trimester pregnant women who meet the inclusion criteria, namely those experiencing physiological pregnancy and suffering from nausea and vomiting during the first trimester of pregnancy, Sample size of 30 pregnant women using a purposive sampling technique, consisting of 3 groups each with 10 pregnant women. Groups 1 and 2 were given the same intervention of applying the acupressure technique at points P6 and L14, ten times each, with a duration of 15 minutes over 7 days, every morning upon waking, group 3 was not given treatment. Acupressure technique data was obtained through observation of, a checklist instrument for each group. Nausea and vomiting data was obtained from direct interviews with a questionnaire, namely 0 = no nausea and vomiting, 1 = mild, 2 = moderate, and 3 = severe. Anxiety data was obtained from the measurement of the Hamilton Rating Scale For Anxiety (HRS-A) consisting of 14 symptom statements each detailed specifically with values as follows: 0 = no symptoms, 1 = mild symptoms, 2 = moderate symptoms, 3 = severe symptoms, 4 = very severe symptoms. Wilcoxon statistical test analysis was used in this research.

Results

Table 1. It is known that group 1 had an average value of 2.20 for nausea and vomiting before intervention and an average value of 1.00 after intervention, resulting in a decrease in nausea and vomiting from before to after intervention by 1.20. Meanwhile, pregnant women's anxiety before

intervention had an average value of 2.60 and an average value of 1.50 after intervention, resulting in a decrease in anxiety by 1.10.

Table 1. Frequency Distribution of 3 Groups of Pregnant Women Based on Nausea, Vomiting and Pregnancy Anxiety

Variable	Group 1		Group 2				Group 3			
	Nauseous vomit		Anxious		Nauseous vomit		Anxious		Nauseous vomit	Anxious
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	10	10
N	10	10	10	10	10	10	10	10	2.40	1.20
Mean	2.20	1.00	2.60	1.50	2.40	1.20	2.50	1.00	.843	.789
Std. Deviation	.789	.667	.516	.527	.843	.789	.527	.667	2	2
Range	2	2	1	1	2	2	1	2	1	0
Minimum	1	0	2	1	1	0	2	0	3	2
Maximum	3	2	3	2	3	2	3	2	10	10

The results of group 2 showed that the average value for nausea and vomiting before intervention was 2.40 and after intervention was 1.20, indicating a decrease in nausea and vomiting from before to after by 1.20. Meanwhile, pregnant women's anxiety before intervention had an average value of 250 and an average value of 1.00 after intervention, indicating a decrease in anxiety by 1.40.

For Group 3, which did not receive any intervention, the average nausea and vomiting score remained the same at 170 for both the pre-test and post-test. However, for anxiety, the average pre-test score was 190 and the post-test score was 170, indicating a reduction in anxiety by 20 points.

Table 2. Rank Values for Acupressure Technique Against Nausea and Vomiting

		N	Mean Rank	Sum of Ranks
Group_1_Post_Nausea	- Negative Ranks	8 ^a	4.50	36.00
Group_1_Pre_Nausea	Positive Ranks	0 ^b	.00	.00
	Ties	2 ^c		
	Total	10		
Group_1_Post_Anxiety	Negative Ranks	9 ^d	5.00	45.00
Group_1_Pre_Anxiety	Positive Ranks	0 ^e	.00	.00
	Ties	1 ^f		
	Total	10		
Group_2_Post_Nausea	Negative Ranks	10 ^g	5.50	55.00
Group_2_Pre_Nausea	Positive Ranks	0 ^h	.00	.00
	Ties	0 ⁱ		
	Total	10		
Group_2_Post_Anxiety	Negative Ranks	10 ^j	5.50	55.00
Group_2_Pre_Anxiety	Positive Ranks	0 ^k	.00	.00
	Ties	0 ^l		
	Total	10		
Group_3_Control_Pre_Anxiety	Negative Ranks	1 ^m	3.00	3.00
Group_3_Control_Pre_Nausea	Positive Ranks	4 ⁿ	3.00	12.00
	Ties	5 ^o		
	Total	10		

Based on the Ranks analysis in group 1, the negative value of nausea and vomiting pre-test and post-test was 4.50, indicating a decrease in nausea and vomiting from the pre-test to the post-test, and the positive rank value of 0 indicated no increase in pregnant women's nausea and vomiting. The negative rank value of anxiety was 5, indicating a decrease in anxiety from the pre-test to the post-test, and the positive rank value of 0 indicated no increase in anxiety.

In group 2, the negative value of nausea and vomiting was 5.50, indicating a decrease in nausea and vomiting from pre-test to post-test, and the positive rank value of 0 indicated no increase in nausea

and vomiting from pre-test to post-test. The negative rank value of anxiety was 5.50, indicating a decrease in anxiety from the pre-test to the post-test, and the positive rank value of 0 indicated no increase in anxiety. Group 3 had a negative value of 3.00 and a positive value of 3.00 as a control group for comparison.

Table 3. Analysis of Differences Before and After P6 and L14 Acupressure Technique.

	Test Statistics				
	Group_1_Post_ Nausea - Group_1_Pre_ Nausea	Group_1_Post_ Anxiety Group_1_Pre_ Anxiety	Group_2_Post_ Nausea - Group_2_Pre_ Nausea	Group2_Post_ Anxiety Group_2_Pre_ Anxiety	Group_3_K control_Pre_ Anxiety cGroup_3_Kontrol_P re_ Nausea
Z	-2.585 ^b	-2.810 ^b	-2.972 ^b	-2.913 ^b	-1.342 ^c
Asymp. Sig. (2-tailed)	.010	.005	.003	.004	.180

The results of the Wilcoxon test analysis in group 1 showed that the Asymp Sig (2-tailed) value of nausea and vomiting was $0.010 \geq \alpha = 0.05$, indicating no difference in nausea and vomiting before and after P6 acupressure technique was applied, while the Asymp Sig (2-tailed) value of anxiety was $0.005 \leq 0.05$, indicating a difference in anxiety before and after L14 acupressure technique was applied. In group 2, the Asymp Sig (2-tailed) value of nausea and vomiting was $0.003 \leq 0.05$, indicating a difference in nausea and vomiting before and after P6 acupressure technique was applied, while the Asymp Sig (2-tailed) value of anxiety was $0.004 \leq 0.05$, indicating a difference in anxiety before and after L14 acupressure technique was applied. Group 3 served as a control group.

Discussion

The results of the nausea and vomiting study in group 1 showed that the average value before intervention was 2.20 and after intervention was 1.00, indicating a decrease in nausea and vomiting from before to after by 1.20. Meanwhile, the average value of anxiety in pregnant women before intervention was 2.60 and after intervention was 1.50, indicating a decrease in anxiety by 1.10. In group 2, the average value of nausea and vomiting before intervention was 2.40 and after intervention was 1.20, indicating a decrease in nausea and vomiting from before to after by 1.20. Meanwhile, the average value of anxiety in pregnant women before intervention was 250 and after intervention was 1.00, indicating a decrease in anxiety by 1.40. Group 3 was not intervened with an average value of nausea and vomiting at 0.843 and anxiety at 0.789.

Nausea and vomiting usually occur during the first trimester, usually in the morning and peak at 9 weeks of pregnancy (Yuliani & Helena, 2020). Factors that influence it include an increase in estrogen hormone production, the formation of HCG (human chorionic gonadotropin) placenta hormones, changes in liver glycogen metabolism, and psychological factors of pregnant women (Yuliani & Helena, 2020; Divall et al., 2017). Predisposing factors for nausea and vomiting include knowledge, economic status, culture, occupation, and family support (Yusuf & Wahyuni, 2018). According to previous studies, knowledge is related to nausea and vomiting during pregnancy (Amarlini, 2020). However, other opinions suggest that knowledge is not related to nausea and vomiting in pregnant women (Mudlikah & Ningrum, 2019). Due to nausea and vomiting, there is a decrease in appetite which

increases the risk of energy calorie deficiency (KEK) indicated by weight loss and mid-upper arm circumference (MUAC) of less than 23.5 cm.

Anxiety occurs due to changes in hormone levels that stimulate nerve tension to become unstable triggers for nausea and vomiting (Yuliani & Helena, 2020). Anxiety easily arises due to the failure of the adaptation process of pregnancy which is exacerbated by depression that impacts the health problems of mothers, babies, and complications (Kartikasari, 2018). According to previous studies, severe anxiety is more likely to lead to depression (Hart et al., 2018). Anxiety factors are influenced by pregnant women under the age of 20, family support, knowledge, stress, depression, education, economic status, personality type, gender and environment (Emami-Sahebi et al., 2018).

The acupressure technique is a complementary therapy using traditional science and technology (Rahmayati et al., 2017). The goal is to provide stimulation through pressure points on the body to reduce nausea and vomiting, improve blood circulation, increase stamina, and reduce pain (KEMENKES, 2015; Anita, 2018), and can also reduce anxiety or stress in pregnant women (Senudin, 2019). How to apply pressure points using fingers or blunt objects. Pressure on point P6 is located on the inside of the arm near the wrist by placing three fingers on the wrist and then placing the thumb from a distance of three fingers then pressing between muscle tissue and bone (Rahmanindar et al., 2021). Meanwhile, pressure on point L14 is located between the first metacarpal bone in the middle between the thumb and index finger bone pressed with a rotating motion that functions to manage emotions. According to previous opinions, L14 can reduce emotions during childbirth (Santiasari, 2020).

The results of this study combined P6 and L14 were performed 3 times a week for 15 minutes after waking up. Group 1 analysis showed no difference in nausea and vomiting before and after being given the P6 acupressure technique and there was a difference in anxiety before and after being given the L14 acupressure technique. Group 2 showed a difference in nausea and vomiting before and after being given the P6 acupressure technique and anxiety showed a difference in anxiety before and after being given the L14 acupressure technique. Group 3 is the control group. Another opinion is that intervening with pressure on point P6 alone for 7 minutes for 4 days a week results in a decrease in nausea and vomiting in the first trimester of pregnant women, reduces hyperemesis gravidarum, cancer, and chemotherapy (Juwita, 2015; Rahmanindar et al., 2021; Ismuhu et al., 2020).

This study resulted in the concept theory that group 1 showed no difference in nausea and vomiting before and after intervention because nausea and vomiting are influenced by several factors so applied research with a larger sample size and longer and regular intervention time is needed. Group 2 showed a difference in influence before and after intervention, and pressure on point 6 in group 2 according to the source of nausea and vomiting to provide good effectiveness in reducing nausea and vomiting. Pressure on L14 in group 1 and group 2 before and after intervention provides an effective influence in reducing anxiety. The results of this study indicate that there is no difference in pregnancy-related nausea and vomiting between Group 1 and Group 2 in the pre-and post-acupressure intervention at point P6 (Nei Guan). The same intervention was given for 15 minutes every morning upon waking for 7 days, but the results showed no difference. This condition is influenced by several factors,

including the varying wake-up times, differing sleep durations, and different activities that can affect the physical condition of pregnant women, which in turn can affect the condition of the stomach and stimulate nausea and vomiting.

Several non-pharmacological alternative therapies for reducing nausea and vomiting in previous studies can use hypnotherapy methods, and yoga exercises in prenatal classes. This study can help government programs in improving the nutrition of pregnant women and efforts to prevent malnutrition and pregnancy complications and prevent child stunting (Alfarisi et al., 2019).

Conclusions

The combination of acupressure techniques on points P6 and L14 was performed 3 times a week for 15 minutes each after waking up in the first trimester of pregnancy, group 1 showed no difference in the effect of reducing nausea and vomiting before and after intervention, group 2 showed a difference in the effect of reducing nausea and vomiting before and after intervention. Meanwhile, anxiety during pregnancy in groups 1 and 2 showed a difference in the effect of reducing anxiety before and after intervention.

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