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# Difference in the Intensity of Emesis Before and After Acupressure at Point P6 in Pregnant Women During the First Trimester

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## ABSTRACT

Emesis gravidarum, characterized by nausea and vomiting, significantly affects quality of life during early pregnancy. The effects extend beyond discomfort, potentially leading to serious complications such as dehydration, weight loss, and nutritional deficiencies. These complications pose risks not only to the mother's health but also to the development of the fetus.This study evaluated the effectiveness of acupressure at the P6 point in reducing the intensity of emesis in pregnant women in the first trimester. This study was conducted at the Independent Practice of Midwife Corriyati Yunus, Denpasar, with a pre-experimental design using a one group pretest-posttest approach. A total of 39 respondents were selected through purposive sampling. Data were collected using the PUQE-24 questionnaire and analyzed using the Wilcoxon test. The results showed a median emesis intensity of 8 before acupressure and 4 after, which showed a significant decrease (p-value = 0.000). These results confirm that acupressure at the P6 point is an effective and safe non-pharmacological therapy alternative to overcome nausea and vomiting during pregnancy. Further adoption of this technique is recommended to improve the welfare of pregnant women.

## INTRODUCTION

Pregnancy is a natural process experienced by women, but it is often accompanied by various significant physical and psychological changes. In the first trimester of pregnancy, nausea and vomiting or known as emesis gravidarum is one of the most common complaints. Around 50-80% of pregnant women experience this condition, which is caused by increased pregnancy hormones such as human chorionic gonadotropin (HCG) and estrogen[1]. Although considered a physiological condition, emesis gravidarum can have a negative impact on the mother's quality of life, causing dehydration, malnutrition, and even serious complications such as hyperemesis gravidarum[2]. In the context of maternal health, the management of emesis gravidarum is very important. Pharmacological approaches are often used, such as administering vitamin B6 or antihistamines. However, this approach can pose a risk of side effects on the fetus, especially in the first trimester[3]. Therefore, non-pharmacological therapies are increasingly gaining attention as a safe and effective alternative. One such therapy is acupressure,

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which comes from traditional Chinese medicine. Acupressure involves pressing on specific points on the body, such as the Pericardium 6 (P6) point, which is located three finger widths above the inner wrist[4].

Previous studies have shown that P6 point stimulation can help reduce symptoms of nausea and vomiting. The mechanism of action of acupressure involves stimulation of the central nervous system, which reduces activity in the vomiting center in the brain. In addition, this therapy also stimulates the release of endorphins which have a relaxing effect[5]. A study reported that acupressure at the P6 point can significantly reduce the frequency of vomiting in pregnant women in the first trimester[6]. However, although many studies support the effectiveness of acupressure, research conducted in Indonesia, especially in the pregnant population, is still limited. Most previous studies have focused more on non-pregnancy populations, such as post-operative patients or individuals with chemotherapy-induced nausea[7]. Therefore, this study aims to explore the effectiveness of P6 point acupressure in reducing the intensity of emesis in pregnant women in the first trimester in Indonesia, especially in Denpasar. This study is expected to contribute to the development of complementary therapies in obstetric services and improve the welfare of pregnant women holistically. Specifically, this study also aims to fill the literature gap related to the effectiveness of acupressure therapy in Indonesia. By measuring the difference in emesis intensity before and after acupressure, this study is expected to strengthen the scientific basis for the application of acupressure as part of non-pharmacological interventions in obstetrics. In addition, this study can also provide practical guidance for midwives in managing emesis gravidarum complaints in pregnant women.

## METHOD

This study used a pre-experimental design with a one-group pretest-posttest approach. This design involved measuring the intensity of emesis before and after the acupressure intervention at the Pericardium 6 (P6) point. It was conducted at the Independent Practice of Midwife Corriyati Yunus, West Denpasar, during the period from January to December 2023. The study obtained ethical approval from the Research Ethics Committee of Poltekkes Kemenkes Denpasar, with approval number DP.04.02/F.XXXII.25/0839/2024, stating that it met ethical standards on September 19, 2024. The respondents of the study were pregnant women in their first trimester experiencing symptoms of nausea and vomiting (emesis gravidarum). Inclusion criteria comprised women aged 6 to 12 weeks, those willing to participate, and individuals with no contraindications for acupressure therapy. Exclusion criteria eliminated pregnant women with chronic diseases that could potentially affect study results, ensuring participant safety and the integrity of findings. A total of 39 respondents were selected using purposive sampling techniques, which allowed for a focused analysis on a population most relevant to the study's objectives. Acupressure intervention was conducted at point P6 with standard operating procedure guidance. Respondents were given brief training on acupressure techniques involving gentle pressure on point P6 for two minutes, three times a day. Data were collected using the PUQE-24 (Pregnancy-Unique Quantification of Emesis) questionnaire. Wilcoxon test was selected for this study due to its specific advantages in analyzing the data on emesis intensity before and after acupressure therapy

## RESULT AND DISCUSSION

### Characteristics of Research Subjects

Table 1.
Characteristics of Research Subjects

| Characteristics | f | % |
|---|---|---|
| Age | 17 | **43.6** |
| 19-24 yo | | |
| 25-32 yo | 22 | **56.4** |

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| Characteristics | f | % |
|---|---|---|
| Education | 7 | **17.9** |
| Higher | | |
| Secondary | 29 | **74.4** |
| Elementary | 3 | **7.7** |
| Occupation | 18 | **46.2** |
| Non Employee | | |
| Employee | 17 | **43.6** |
| Self-Employed | 4 | **10.3** |
| Gestasional Age | 30 | **76.9** |
| 9-10 weeks | | |
| 11-12 weeks | 9 | **23.1** |

Table 1 shows the characteristics of the research subjects, including their age, education level, occupation, and gestational age. A total of 39 respondents participated in the study. The majority of these respondents were aged between 25 and 32 years, accounting for 56.4% of the sample. In terms of education, a significant proportion had secondary education, making up 74.4% of the participants. Regarding their occupations, 46.2% identified as Non-employee, while 43.6% were employees, and 10.3% were self-employed.
Additionally, most of the respondents were in the early stages of pregnancy, with 76.9% having a gestational age between 9 to 10 weeks. This demographic profile highlights the characteristics of the participants involved in the study.

**Emesis Intensity Before and After Intervention**

Table 2.
Emesis Intensity Before and After Intervention

| Variables | Mean ± SD | Median | Min - Max |
|---|---|---|---|
| Before Acupressure | 7.80 ± 1.568 | 8 | **4 - 11** |
| After Acupressure | 3.57 ± 0.955 | 3 | **3 - 7** |

Table 2 shows the mean and median intensities of emesis before and after the acupressure intervention. The mean intensity of emesis before acupressure was 7.80 (SD ±1.568), with a median of 8, which is categorized as moderate emesis. After acupressure, the mean decreased to 3.57 (SD ±0.955), with a median of 3, which is categorized as mild emesis.

Gestational age significantly impacts nausea and vomiting, typically peaking between 6 to 12 weeks of pregnancy, coinciding with rising human chorionic gonadotropin (hCG) levels, which peak around the 8th to 10th week. In addition to gestational age and hCG levels, several other factors contribute to nausea and vomiting in pregnant women. Hormonal changes, particularly increased levels of estrogen and progesterone, can affect gastrointestinal motility and sensitivity. Psychological factors such as stress and anxiety may exacerbate symptoms, and dietary habits, including food aversions or cravings, can trigger nausea. Furthermore, women with previous experiences of nausea in earlier pregnancies are more likely to encounter similar symptoms again. Lastly, socioeconomic status and access to healthcare, along with social support and education about symptom management, play significant roles in the severity of nausea and vomiting experienced during pregnancy[4].

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**Differences in Emesis Intensity**

Table 3.
Differences in Emesis Intensity

| Wilcoxon test | n | Positive | Negative | Ties | p-value |
|---|---|---|---|---|---|
| Pretest-Posttest | 39 | 39 | 0 | 0 | **0,000** |

Table 3 presents the results of the Wilcoxon test, which analyzes the differences in emesis intensity before and after the acupressure intervention. A total of 39 respondents were included in the analysis. The results of the analysis showed that all respondents experienced a decrease in emesis intensity after the intervention. There was no increase or the value remained the same between before and after the intervention. With a p-value of 0.000, these results confirm that acupressure at point P6 is effective in reducing emesis intensity.

These findings confirm that acupressure at the P6 point is an effective method for alleviating nausea and vomiting in pregnant women The results of emesis intensity measurements using PUQE-24 showed that the median value before the intervention was 8, which was included in the moderate emesis category. After the acupressure intervention, the median value decreased to 4, which showed significant improvement with the mild emesis category. Statistical analysis using the Wilcoxon Signed Rank Test revealed a p-value of 0.000 and a Z-value of -5.502, indicating a highly significant reduction in emesis intensity following the intervention. Acupressure at the P6 point is effective in reducing the intensity of emesis gravidarum in pregnant women in the first trimester. Acupressure, particularly at the P6 point (Neiguan), is effective in reducing the intensity of emesis gravidarum in pregnant women in the first trimester. This effectiveness can be explained by the physiological mechanism of acupressure, which involves stimulation of the nervous system to suppress the activity of the vomiting center in the medulla oblongata. Additionally, pressure on the P6 point increases the release of endorphins, which play a role in providing a relaxing effect and reducing nausea.

This study aligns with previous research findings, which reported a significant decrease in symptoms of nausea and vomiting after applying acupressure to the P6 point[4]. Additionally, it is supported by similar research, indicating that acupressure can be a safe and effective non-pharmacological therapy alternative for pregnant women[6]. However, there are some differences with other studies that show that the results of acupressure effectiveness can be influenced by individual factors, such as the severity of emesis and the regularity of the application of acupressure techniques. Therefore, more intensive training and guidance on this technique are needed to ensure optimal results. This study has limitations in terms of a relatively small sample and focus on one research location. Further studies with larger designs and population variations are needed to strengthen the validity of the results.

## CONCLUSION

This study shows that there is a significant decrease in the degree of nausea and vomiting felt by pregnant women in the first trimester after receiving acupressure at the P6 point. The results of this study found that acupressure at the P6 point can be considered as an additional method to reduce nausea and vomiting in the first trimester of pregnancy. However, further research is still needed.

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