

The Influence of the Combination of Acupressure on the Meridian Point P6 and Peppermint Aromatherapy Inhalation on the Reduction of Nausea and Vomiting Frequency in First-Trimester Pregnant Women

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Abstrak—Nausea and vomiting disorders during pregnancy, particularly in the first trimester, often impact the quality of life for pregnant women, with 50-90% of cases occurring during this period. Besides affecting maternal health, these disorders also influence fetal growth and development. Management can be achieved through pharmacological and non-pharmacological methods, including the combination of acupressure at Meridian Point P6 and inhalation of peppermint aromatherapy. This research aims to evaluate the impact of this combination on reducing the frequency of nausea and vomiting in first-trimester pregnant women at RSHM Yusuf Kalibalangan in North Lampung. Utilizing a quasi-experimental method, involving 12 first-trimester pregnant women experiencing nausea and vomiting at the mentioned hospital, the study results demonstrate that the combination of acupressure and peppermint aromatherapy significantly reduces the frequency of these symptoms. Statistical analysis using the paired t-test yields a p-value of 0.012. In conclusion, this combination proves effective in addressing nausea and vomiting issues in first-trimester pregnant women at RSHM Yusuf Kalibalangan in North Lampung, offering new insights into non-pharmacological options for improving the well-being of pregnant women.

Kata Kunci: Acupressure at Meridian Point P6; peppermint aromatherapy inhalation; frequency of nausea and vomiting

1. INTRODUCTION

Nausea and vomiting during pregnancy are common symptoms, predominantly experienced in the first trimester, with the potential to significantly impact the quality of life for pregnant women. This condition is recognized as one of the earliest and most prevalent complaints, often causing stress throughout the entire pregnancy. Nausea and vomiting in pregnancy are triggered by changes in the endocrine system, particularly the increase in HCG hormone levels during pregnancy (Tanjung & Nasution, 2020). Internationally, approximately 90% of women experience varying degrees of nausea and vomiting, ranging from mild to moderate symptoms that can resolve on their own, or even progress to more severe conditions such as hyperemesis gravidarum. Statistics indicate that about 51.4% of women experience nausea, while 9.2% experience vomiting. Although hyperemesis gravidarum as a pathological condition is relatively rare, occurring in only about 0.3-2% of pregnant women, it requires more intensive medical attention. It is estimated that highly pathological nausea and vomiting occur in 1 out of 500 pregnancies (Kundarti et al., 2017).

The symptoms of nausea and vomiting during pregnancy involve varying levels of severity and are prevalent worldwide, with incidence rates varying, ranging from 0.3% in Sweden, 0.5% in California, 0.8% in Canada, 10.8% in China, 0.9% in Norway, 2.2% in Pakistan, 1.9% in Turkey, to 0.5%-2% in the United States (Oktavia, 2017).

According to the 2018 Indonesia Health Demographic Survey, the prevalence of nausea and vomiting during pregnancy in Indonesia ranges from 50-90%, with pregnancy complications involving these symptoms occurring in about 3% of cases. Specific data in Indonesia indicates that the incidence ratio of pathological nausea and vomiting is 4:1000 pregnancies. It is estimated that approximately 50% to 80% of pregnant women experience nausea and vomiting, and around 5% of them require treatment to address fluid and electrolyte imbalances (Kartikasari, 2017).

The occurrence of nausea and vomiting in Lampung Province during the first trimester of pregnancy or within the K1-K2 coverage reached 40-60% of the total number of pregnant women in 2018, totaling 182,815 individuals (Dinkes Profile, 2018). In multigravida pregnant women, the prevalence is around 10-15%. In RSHM Yusuf Kalibalangan North Lampung in 2020, based on Medical Record Data in the Obstetrics Clinic, approximately 61.2% of 93 pregnant women reported experiencing nausea and vomiting, with about 25% of them requiring treatment to address fluid replacement and electrolyte imbalance issues. This data highlights the importance of better understanding and management of nausea and vomiting during pregnancy to enhance the well-being of pregnant women.

Nausea and vomiting during pregnancy are not merely physical discomforts but also have serious implications for the health of the mother and the development of the fetus. In the first trimester of primigravida pregnancies, approximately 70-80% of women experience nausea and vomiting, with 60% experiencing vomiting and 33% experiencing only nausea. If vomiting occurs to an extreme extent, it can lead to weight loss, loss of skin turgor, and the onset of acetone in the urine (acetonuria). Consequently, nausea and vomiting can have negative impacts such as anemia, which, in turn, can result in shock due to the lack of nutritional intake associated with excessive vomiting (Morgan, 2016).

Beyond its effects on physical health, nausea and vomiting during pregnancy also have significant implications for family life and the psychological well-being of pregnant women. This can affect the ability to carry out daily activities, social functioning, and create stressful situations. In a study by Balikova et al. (Dewi & Safitri, 2018), it was found that nausea and vomiting during pregnancy can lead to other symptoms such as fatigue, nutritional disturbances, dehydration,

weakness, weight loss, and electrolyte imbalances. Therefore, appropriate management and support are crucial to minimize these negative impacts on the well-being of pregnant women and their families.

The management of nausea and vomiting during pregnancy involves both pharmacological and non-pharmacological approaches. Non-pharmacological therapy includes strategies such as dietary adjustments, emotional support, and acupressure. Non-pharmacological therapy falls under the category of complementary therapy that can be used as an intervention to address nausea, with some involving acupressure, acupuncture, relaxation, and therapy (Renityas, 2019).

One effective non-pharmacological therapy approach to reduce nausea and vomiting is through the use of acupressure on the Pericardium 6 (P6) point, also known as the P6 point in traditional Chinese medicine. According to "Acupuncture in Clinical Practice," stimulation at the P6 point is considered a key point in providing acupressure to individuals experiencing nausea and vomiting. The stimulation effect at this point can increase the release of beta-endorphins in the pituitary gland and adrenocorticotrophic hormone (ACTH) along the chemoreceptor trigger zone (CTZ), which can inhibit the vomiting center (Farhat et al., 2016). As explained by Oktaviani, massage at the PC 6 point (Nei guan) is also known to reduce nausea and vomiting. Non-pharmacological therapy approaches like acupressure on the P6 point represent a promising and holistic alternative in managing nausea and vomiting symptoms during pregnancy (Renityas, 2019).

In the study titled "Reduction of Nausea, Vomiting, and Dry Retches with P6 Acupressure during Pregnancy," Robert (2017) concluded that the use of acupressure on Pericardium 6 (P6) is beneficial in reducing symptoms of nausea and vomiting during pregnancy. Similar findings were also revealed in a study conducted by Renityas (2019) titled "The Influence of Nei Guan (P6) Point on the Reduction of Morning Sickness Complaints in First-Trimester Pregnant Women at the Sananwetan Blitar Health Center." This research found that pregnant women in the first trimester experiencing nausea and vomiting showed a decrease in these symptoms after receiving acupressure on the Nei Guan (P6) point. Statistical analysis indicated a p-value of 0.000, confirming the significance of the test results. Thus, both studies suggest that the use of acupressure on the P6 point is effective in reducing symptoms of nausea and vomiting in pregnant women, providing further evidence regarding the benefits of this therapy in addressing well-being issues during pregnancy.

In addition to acupressure therapy, efforts to alleviate the symptoms of nausea and vomiting can be carried out through aromatherapy. Aromatherapy is an alternative treatment method derived from easily evaporating plant materials, primarily recognized in the form of essential oils. Aromatherapy yields various effects for those who inhale it, providing a sense of calmness, freshness, and even assisting pregnant women in managing nausea by using peppermint aromatherapy (Rahayu & Sugita, 2018). Peppermint essential oil in aromatherapy contains antibacterial properties against meningococcus and typhoid bacteria, and it also has antifungal effects. Additionally, peppermint oil is effective in neutralizing unpleasant odors and produces anti-anxiety, anti-depression, and anti-stress effects, helping to uplift and focus the mind. Another study evaluating the impact of peppermint aromatherapy on nausea in first-trimester pregnant women concluded that this therapy significantly reduces the frequency of nausea after its application (Dewi & Safitri, 2018).

The study conducted by Safajou, Shahnazi, and Nazemiyeh (2017) revealed that peppermint aromatherapy has a positive impact on alleviating nausea and vomiting during pregnancy, with a significance level of $p < 0.001$. Peppermint essential oil (citrus peppermint) is considered one of the most popular herbal oils used during pregnancy and is regarded as a safe remedy (Damarasri, 2017). This is attributed to the presence of limonene compounds in peppermint, classified as GRAS (Generally Recognized as Safe) components, indicating its safe use. Additionally, limonene is not known to cause allergic reactions (Sidauruk, 2018). Research by Kia et al. (2014) indicates that 40% of women use peppermint aroma to alleviate nausea and vomiting, with 26.5% reporting it as an effective way to control these symptoms. This demonstrates that the use of peppermint aromatherapy can be considered a safe and effective alternative in addressing nausea and vomiting issues during pregnancy.

Based on the preliminary study in the Inpatient Ward of RSHM Yusuf Kalibalangan, North Lampung, in 2021, there were 41 pregnant women who were hospitalized due to nausea and vomiting, and 3 of them returned for medical reevaluation (MRS) in the same month within 7-14 days after discharge. In the period from January to December 2022, the data showed an increase, with 46 pregnant women hospitalized due to nausea and vomiting, and 7 of them returned for MRS in the same month within 7-14 days after discharge. Based on the observable data, there has been a 15% increase in the number of pregnant women experiencing nausea and vomiting and requiring hospitalization. Therefore, efforts are needed to address nausea and vomiting in pregnant women at RSHM Yusuf Kalibalangan, North Lampung. (Source: Medical Record Data of RSHM Yusuf Kalibalangan, North Lampung, 2022).

Based on the conducted research, it is evident that there are still pregnant patients experiencing nausea and vomiting who need to be readmitted after being discharged from the hospital due to a lack of non-pharmacological efforts in addressing these complaints. Therefore, this study aims to introduce innovation through a non-pharmacological intervention, namely a combination of acupressure and aromatherapy. This method is designed to be performed by mothers at home after receiving treatment in the hospital, providing a more convenient and accessible option for reducing nausea and vomiting symptoms during pregnancy. Thus, it is anticipated that there will be an improvement in the quality of life and well-being of pregnant women.

2. RESEARCH METHODS

The research method employed in this study is a quantitative approach utilizing a quasi-experimental or quasi-experiment design. The applied research design is pre-test post-test non-equivalent control group. At the commencement of the study, both groups, namely the experimental group (A1) receiving acupressure at the Pericardium 6 Meridian Point and peppermint aromatherapy, and the control group (A2) not receiving these treatments, underwent initial measurements (pre-test) to obtain baseline response values from the participants before any interventions were applied. Subsequently, after the interventions were administered, both groups were re-measured (post-test) to evaluate the outcomes following the application of the treatments. The experimental design can be elucidated as follows: Initial measurements of nausea and vomiting frequency were taken before treatment in groups A1 (B1) and A2 (B3). Following this, treatment was administered to group A1 through acupressure at the Pericardium 6 Meridian Point and peppermint aromatherapy (X1), while group A2 did not receive these treatments (X0). Finally, the concluding measurements of nausea and vomiting frequency were conducted for both groups after the interventions (B2 and B4). By employing this approach, the research aims to provide a clearer understanding of the effectiveness of acupressure at the Pericardium 6 Meridian Point and peppermint aromatherapy in reducing the frequency of nausea and vomiting in pregnant women.

The population of this study includes all first-trimester pregnant women experiencing nausea and vomiting who are hospitalized at RSHM Yusuf Kalibalangan, North Lampung. The population is a generalization area consisting of objects or subjects with specific qualities and characteristics that are the focus of the research (Sugiyono, 2017). As defined by Sugiyono (2017), the sample is a portion of the total population with its characteristics. In this study, the sample is selected using purposive sampling, specifically targeting first-trimester pregnant women experiencing nausea and vomiting. To determine the sample size, a formula involving the level of type 1 error ($Z\alpha$), the level of type 2 error ($Z\beta$), the minimum meaningful difference in means ($X1-X2$), and the standard deviation (S) is used. After calculations with a 5% type 1 error rate ($Z\alpha=1.96$) and a 10% type 2 error rate ($Z\beta=1.28$), the sample size for each group is obtained as 6 individuals, resulting in a total sample size of 12 individuals. The inclusion criteria for this study include first-trimester pregnant women experiencing nausea and vomiting, not allergic to peppermint aromatherapy, currently hospitalized, and have obtained permission from a doctor. Meanwhile, the exclusion criteria involve first-trimester pregnant women with a history of respiratory diseases and injuries or wounds on the wrists (Notoatmodjo, 2018).

This research was conducted in the Inpatient Room of Meranti RSHM Yusuf Kalibalangan, North Lampung, during the period from April to May 2023. The research focuses on two types of variables, namely independent variables and dependent variables, as explained by Sugiyono (2017). The independent variable in this study is the combination of acupressure on the P6 Meridian point and peppermint aromatherapy. This factor or condition is considered to have an influence or to be the cause of changes in the dependent variable. The dependent variable in this study is nausea and vomiting in first-trimester pregnant women, considered as a result of the application of the combination of acupressure and aromatherapy. By detailing the location, period, as well as independent and dependent variables, this study is expected to provide a clear overview of the impact of this combined therapy on nausea and vomiting in pregnant women.

The operational definition of a variable refers to the attributes, characteristics, or values possessed by a specific object or activity, as identified by the researcher to be the focus of the study and subsequently analyzed (Sugiyono, 2017). In the context of this research, the independent variable is the combination of acupressure on the Meridian P6 point and peppermint aromatherapy. The operationalization of this variable includes massaging and stimulating points along the meridian pathway of the pericardium with the aim of reducing complaints of nausea and vomiting. Additionally, peppermint aromatherapy is administered through inhalation for 10-15 minutes in accordance with the established Standard Operating Procedure (SOP). The dependent variable in this study is the level of nausea and vomiting in pregnant women in the first trimester. The operational definition for this variable is the condition of nausea, sometimes accompanied by vomiting, in primigravida pregnant women at gestational ages of 0-12 weeks. To measure the level of nausea and vomiting, the Pregnancy-Unique Quantification Of Emesis/Nausea (PUQE) instrument is employed, providing scores as measurement outcomes on a ratio scale. This operational definition serves as a guide on how to measure and assess the variables that are the focus of the study, namely the impact of the combination of acupressure on the Meridian P6 point and peppermint aromatherapy on nausea and vomiting in pregnant women in the first trimester.

The research instrument is a measuring tool that aids in establishing relevant parameters or indicators for the purposes of the study (Putri, 2016). Within the framework of this research, the instruments to be utilized include an observation sheet for measuring the level of nausea and vomiting using the PUQE method, as well as Standard Operating Procedures (SOP) for acupressure on the Meridian P6 point and peppermint aromatherapy. The observation sheet is designed to systematically record the symptoms of nausea and vomiting in first-trimester pregnant women, while the SOP provides clear and standardized guidelines for the implementation of acupressure and peppermint aromatherapy. The use of these instruments is expected to provide accurate and relevant data to evaluate the effectiveness of the combined therapy of acupressure and peppermint aromatherapy in managing nausea and vomiting in pregnant women.

Data collection techniques in this study involve two main methods. Primary data, which is information directly gathered by the researcher, is obtained through assessing the level of nausea and vomiting using an observation sheet. The steps in data collection include implementing health protocols, introducing oneself, explaining the purpose and objectives of the research, and obtaining informed consent before interventions. The researcher also teaches the procedure for acupressure on the Meridian Point P6 in accordance with the Standard Operating Procedure (SOP), involving massaging this point with the aim of reducing complaints of nausea and vomiting. Additionally, the researcher instructs

the administration of peppermint aromatherapy through inhalation following SOP, which involves using peppermint essential oil on tissue or cotton, subsequently inhaled by the respondent. Secondary data, which is information not directly collected by the researcher but is deemed valid, is obtained from the number of pregnant women experiencing nausea and vomiting and being hospitalized at RSHM Yusuf Kalibalangan, North Lampung. The research instruments used include SOP for acupressure on Meridian Point P6, peppermint aromatherapy, and the PUQE observation sheet to measure the level of nausea and vomiting in pregnant women. The use of these instruments is expected to provide accurate and relevant data to evaluate the effectiveness of the combination therapy of acupressure and peppermint aromatherapy in managing nausea and vomiting in pregnant women.

Data analysis is conducted using computer software. The data analysis process in this research involves both univariate and bivariate analyses. Before applying univariate and bivariate analyses, a normality test is conducted to examine whether the data follows a normal distribution. This normality test is part of the basic requirements for statistical analysis, and in this study, the Shapiro-Wilk test is used since the sample size is less than 50 people. The univariate analysis aims to describe the intensity of nausea and vomiting before and after the treatment, which involves a combination of acupressure on the Meridian P6 point and peppermint aromatherapy. The results of the univariate analysis are presented in the form of a histogram, accompanied by the mean, standard deviation, standard error, minimum, and maximum values. Bivariate analysis is performed to assess the differences in the intensity of nausea and vomiting before and after the application of acupressure on the Meridian P6 point and peppermint aromatherapy. The statistical test used for data analysis is the paired t-test to observe the differences in nausea and vomiting before and after the treatment. If the data is not normally distributed, the Wilcoxon test is used as an alternative. The paired t-test, often referred to as the paired t-test, is used when data is normally distributed. The formula involves the t-value, the mean difference between pre and post-treatment values, the standard deviation of the difference, and the sample size. The test decision is considered significant if the p-value < α . If the data is not normally distributed, the Wilcoxon test is utilized, employing a specific formula that includes the Z-test result and the total smallest difference between pre and post-treatment values. The Wilcoxon test decision indicates a significant difference if the Z-value < Z-table, whereas if the Z-value > Z-table, the difference is considered not significant.

3. RESULT AND DISCUSSION

Table 1. Characteristics of Respondents

| Characteristics | Experimental Group | | Control Group | | |
|-----------------|--------------------|-----|---------------|-----|------|
| | Frequency | % | Frequency | % | |
| Age | <20 years | 2 | 33,3 | 2 | 33,3 |
| | 20-35 years | 4 | 66,7 | 4 | 66,7 |
| Education | Elementary School | 0 | 0 | 1 | 16,7 |
| | Junior High School | 1 | 16,7 | 1 | 16,7 |
| | Senior High School | 3 | 50,0 | 3 | 33,3 |
| | Bachelor's Degree | 2 | 33,3 | 1 | 16,7 |
| Occupation | Homemaker | 3 | 50,0 | 3 | 50,0 |
| | Civil Servant | 2 | 33,3 | 3 | 50,0 |
| | Entrepreneur | 1 | 16,7 | 0 | 0 |
| Parity | Primigravida | 4 | 66,7 | 3 | 50,0 |
| | Multigravida | 2 | 33,3 | 3 | 50,0 |
| Total | 6 | 100 | 6 | 100 | |

Source: Primary Data 2023

Based on the data presented in Table 1, it can be observed that the majority of participants, both in the experimental and control groups, fall within the age range of 20-35 years. In the experimental group, the number of participants aged between 20-35 years reaches 4 people (66.7%), while the control group has the same number, namely 4 people (66.7%). Furthermore, the majority of participants in the experimental group, totaling 3 people (50%), have completed high school education (SMA). Meanwhile, in the control group, the number of participants with a background in high school education also reaches 3 people (50%). Additionally, in both groups, namely the experimental and control groups, the majority of participants, each comprising 3 people (50%), work as homemakers (IRT - Ibu Rumah Tangga). Moreover, the majority of participants in both groups are also primigravida, with a total of 4 people (66.7%) in the experimental group and 3 people (50%) in the control group.

Although considered within the category of healthy pregnancies, young mothers face challenges during the transition to adulthood. In the phase of youth, a woman undergoes physical and mental changes that guide her toward becoming a responsible adult, trusting in herself, and aspiring for independence. This transformation takes years to reach adequate maturity, making a woman potentially not fully prepared, both physically and mentally, to assume the role of a homemaker (Suwarni, 2022). The first trimester of pregnancy is the most challenging period for expectant mothers, especially when hormonal changes reach their peak. These changes can easily affect the emotional balance of the mother,

leading to commonly experienced symptoms of morning sickness, particularly during the first three months. As the mother's age increases, her attitude tends to become more open, and her complaints of morning sickness become lighter, reducing the psychological burden she may face. Research conducted indicates a significant influence between the age of pregnant mothers and the occurrence of morning sickness, where mothers experiencing severe morning sickness under the age of 20 tend to struggle more to cope with their condition. On the contrary, mothers aged over 30 are generally more psychologically prepared, allowing them to better handle occurrences of morning sickness (Suwarni, 2022).

This research reveals that the majority of respondents, aged between 20 and 35 years, fall within an age range where physical and mental maturity has been achieved, providing a solid foundation to face pregnancy. This age-related maturity fosters psychological resilience in mothers against social influences and stress, thereby reducing the risk of complaints related to nausea and vomiting (Junandar et al., 2021). Interestingly, research data indicates that the majority of respondents have a high school education background, falling into the category of secondary education, with approximately 50% attaining this level of education. However, when evaluating the relationship between education levels and the occurrence of nausea and vomiting, the results reveal a paradox. Despite the general theory stating that nausea and vomiting are more common in pregnant women with lower education levels, the findings of this research suggest that pregnant women with a high school education tend to experience nausea and vomiting with a less severe intensity. This intersection raises intriguing questions about other factors that may influence the occurrence of nausea and vomiting in pregnant women, highlighting the complexity of the relationship between education, age, and pregnancy symptoms. Therefore, further research is needed to gain a deeper understanding of the interaction between these factors and their impact on the well-being of pregnant women.

The results of this study are similar to findings from another study, where it was observed that the majority of pregnant women in the first trimester visiting the Obstetrics Clinic at BPK RSUZA Hospital in Banda Aceh have a high level of education. Through statistical analysis, it can be concluded that the null hypothesis (H_0) is accepted, indicating a significant relationship between education level and the occurrence of morning sickness in pregnant women during the first trimester at the Obstetrics Clinic of BPK RSUZA Hospital in Banda Aceh (Suwarni, 2022). These findings offer additional insights that the level of education can play a crucial role in understanding the symptoms of morning sickness in pregnant women, particularly in this healthcare setting.

From the research findings, it was observed that the majority of respondents are homemakers, constituting 50% of the total. This discovery indicates that mothers experiencing severe nausea and vomiting are mostly those who are employed. This phenomenon aligns with the theory suggesting that the level of stress experienced by workers is higher compared to those who are not employed. Moreover, this can be exacerbated if the job is not in line with one's interests, talents, and hobbies, leading the occupation to be perceived as a burden. These findings support the concept that there is a significant relationship between the type of occupation and the occurrence of morning sickness in pregnant women during the first trimester at the Obstetrics Clinic of BPK RSUZA Hospital in Banda Aceh, as explained in Suwarni's study (2022). This outcome illustrates that occupational factors can have a substantial impact on the symptoms of morning sickness in pregnant women, providing further understanding of the importance of alignment between one's job and personal interests and hobbies in the context of maternal well-being.

The results of this study indicate that the majority of respondents experiencing nausea and vomiting are primigravida, meaning pregnant women undergoing their first pregnancy. The aspect of parity, reflecting the number of times a woman has been pregnant, evidently influences the readiness of a pregnant woman to undergo her pregnancy. Multiparas, or women who have experienced multiple pregnancies before, tend to be more experienced in navigating the pregnancy process compared to women undergoing their first pregnancy. Generally, first-time pregnant women often find themselves unprepared, both physically and psychologically, to face the changes occurring in their bodies and minds (Junandar et al., 2021).

The lack of preparedness in pregnant women, when not accompanied by the ability to adapt, can trigger an increase in hormones that can lead to hyperemesis gravidarum, as described by Ompu Prama et al. (2022). Alimah et al. (2021) also noted a connection between parity and the occurrence of hyperemesis gravidarum, especially in primigravida and grandemulti pregnant women. These findings underscore the importance of understanding the level of readiness and experience of a pregnant woman, particularly in the context of a first pregnancy, to prevent health risks such as hyperemesis gravidarum.

Table 2. Descriptive Data of Nausea and Vomiting Pretest and Posttest Combination of Meridian P6 Acupressure Point and Peppermint Aromatherapy in First Trimester Pregnant Women

| | Nausea and Vomiting | Mean | Standard Deviation | Minimum-Maximum |
|--|---------------------|-------|--------------------|-----------------|
| Combination of Meridian P6 Acupressure Point and Peppermint Aromatherapy | Pretest | 11,33 | 1,966 | 9-14 |
| | Posttest | 2,00 | 0,894 | 1-3 |

Source: Primary Data 2023

Nausea and vomiting are sensations of dizziness, abdominal bloating, and bodily weakness accompanied by the expulsion of stomach contents through the mouth, with a frequency of less than 5 times a day in the first trimester of pregnancy (Lestari, 2019). These symptoms serve as early signs of pregnancy and often become a significant source of

stress for pregnant women. Although nausea and vomiting are physiological in nature, it is crucial to note that these are not mild disturbances and can occur in approximately 85% of pregnant women. These symptoms can persist throughout the day and may endure throughout the entire pregnancy period (Lestari, 2019).

In the context of research findings, data indicates that, among the six respondents undergoing a combination of Meridian P6 acupressure point and peppermint aromatherapy, the average nausea and vomiting score after three days of treatment is approximately 2.00. This suggests that the combination of these methods has a positive effect in reducing the intensity of nausea and vomiting in the respondents. Nausea and vomiting during pregnancy have significant impacts on family life, the ability to carry out daily activities, social functioning, and stress levels. Additionally, these symptoms can lead to other issues such as fatigue, nutritional disturbances, dehydration, weakness, weight loss, and electrolyte imbalances (Dewi & Safitri, 2018).

The results of this study reveal that the majority of pregnant women in the first trimester experience moderate to severe nausea and vomiting. The symptoms reported by pregnant women in the first trimester include an average of 2-3 hours of nausea and vomiting each day, with the duration extending to 5-6 hours. In the 12 hours leading up to the study, pregnant women reported experiencing nausea and vomiting for 2-3 hours, with a frequency of 3 to 4 times. The scores for nausea and vomiting measured in this study varied between 9 and 14, indicating a range of severity among pregnant women. For instance, some pregnant women had lower nausea and vomiting scores, such as 9, but still required treatment. This was due to the refusal of the mother to eat, leading to bodily weakness and necessitating further care. Therefore, the findings of this study reflect the considerable variability in the severity of nausea and vomiting among pregnant women, emphasizing the need for special attention, particularly in cases where these symptoms can impact the health and strength of the pregnant woman.

After the intervention in the form of a combination of Meridian P6 acupressure point and peppermint aromatherapy, significant changes were observed in the condition of first-trimester pregnant women. The complaints initially felt by pregnant women experienced a noticeable reduction, accompanied by a decrease in the average score to 2. This indicates a significant decrease in nausea and vomiting symptoms, leading to an improvement in the health of the pregnant women. According to this study, nausea and vomiting in the first trimester of pregnancy are more likely to be caused by psychological factors, especially since it is the first pregnancy experience for the mothers.

The findings of this research are also consistent with previous studies, such as the one conducted by Putri (2018) at the Sananwetan Health Center in Blitar City, which showed a positive impact of Nei Guan (P6) acupressure on reducing nausea and vomiting in the first trimester of pregnancy. Another study conducted by Mariza & Ayuningtias (2019) also indicated similar results, where vomiting before receiving the intervention had a mean of 10.53, and after receiving acupressure, the mean decreased to 7.30. This provides additional support for the effectiveness of acupressure intervention in addressing nausea and vomiting in pregnant women, consistently aligning with previous research findings.

According to the researcher's perspective, numerous studies have discussed that the use of acupressure on the Meridian P6 point, coupled with peppermint aromatherapy, yields more positive impacts. This is because the synergistic properties of peppermint enhance the effects of stimulating the Meridian P6 point. This combination proves to be more effective in reducing nausea symptoms, thus facilitating a quicker improvement in the health condition of pregnant women. Other studies also suggest that interventions combining acupressure with aromatherapy may offer greater benefits than using single methods. Peppermint, with its relaxing and refreshing properties, contributes positively to addressing nausea and vomiting symptoms in pregnant women, creating a more comfortable and overall improved pregnancy experience. Therefore, the implementation of the combination of acupressure on the Meridian P6 point and peppermint aromatherapy is considered a beneficial strategy in enhancing the effectiveness of treatment and the well-being of pregnant women.

Table 3. The Influence of the Combination of Acupressure on the Meridian P6 Point and Peppermint Aromatherapy Inhalation on Nausea and Vomiting in First-Trimester Pregnant Women

| Nausea and Vomiting | Mean | Mean Difference | Standar Error Difference | t_{hitung} | P value |
|---------------------|------|-----------------|--------------------------|--------------|---------|
| Experimental | 2,00 | | | | |
| Control | 3,83 | 1,833 | 0,601 | 3,051 | 0,012 |

Source: Primary Data 2023

Based on the results of the analysis using an independent t-test to evaluate the difference in the level of nausea and vomiting between the treatment group receiving a combination of acupressure on the Meridian P6 point and peppermint aromatherapy and the group receiving medication only, it was found that the p-value was 0.012, which is smaller than the significance level (α) of 0.05. Additionally, the t-value of 3.051 exceeds the critical t-value (t_{tabel}) of $(n-2)(1/2\alpha) = 2.228$. These results indicate that the null hypothesis (H_0) can be rejected. In other words, there is a significant difference in the level of nausea and vomiting between the group receiving the combination treatment of acupressure on the Meridian P6 point and peppermint aromatherapy and the group receiving medication only. This finding provides evidence that the use of the combination of acupressure on the Meridian P6 point and peppermint aromatherapy effectively reduces the level of nausea and vomiting compared to the use of medication alone in first-trimester pregnant women at RSHM Yusuf

Kalibalangan, North Lampung. This can serve as a basis for further consideration in the development of more holistic and risk-free treatment strategies for pregnant women experiencing nausea and vomiting during pregnancy.

In this study, the main focus was on implementing acupressure therapy to alleviate nausea and vomiting in pregnant women in the first trimester. The research results indicate that acupressure at the Meridian P6 point is effective in reducing the symptoms of nausea and vomiting in pregnant women during the first trimester. This effectiveness is attributed to the ability of acupressure at the Meridian P6 point to stimulate the release of cortisol hormone. This hormone plays a crucial role in boosting the body's metabolism, thereby reducing the levels of nausea and vomiting experienced by pregnant women. From the data analysis, a significant difference is observed between the post-test and pre-test scores, indicating that acupressure intervention can significantly reduce the total scores on the Revised Index of Nausea, Vomiting, and Retching (RINVR) in pregnant women. This finding confirms that acupressure therapy can be an effective solution for addressing the issues of nausea and vomiting in pregnant women, especially for those who are unwilling or unable to take medication due to concerns about exacerbating their nausea and vomiting conditions. Therefore, the results of this study lend support to the concept of complementary or non-pharmacological therapy as a viable alternative for managing nausea and vomiting in pregnant women. This approach remains relevant, particularly for pregnant women who harbor concerns about the use of medications and seek more natural and safe treatment options.

The impact of acupressure on the Meridian P6 point on nausea and vomiting in pregnant women can be explained by understanding the role of the Chi Xue (energy and blood) flow in the meridian that nurtures the uterus, namely Ren and Chong, after pregnancy occurs. In this context, the Chi Xue flow becomes highly active to nourish the developing fetus in the uterus. The strong upward movement of Chi can hinder the downward flow of stomach Chi. As a result, a sense of fullness in the epigastrium arises, and it can escalate to the point of nausea. If the upward pressure is more dominant than the downward flow, vomiting may occur. By applying acupressure to the Meridian P6 point, this impact can be alleviated or redirected. Stimulation at this point is believed to control the Chi Xue flow, reduce upward pressure, and facilitate the stomach Chi movement in the correct direction. Thus, acupressure on the Meridian P6 point can help address the imbalance of Chi flow that may lead to nausea and vomiting in pregnant women. This approach creates a sense of balance in the body's energy, supports the comfort of pregnant women, and reduces the common symptoms of nausea and vomiting during pregnancy.

Acupressure operates by regulating the flow of Chi, balancing the energy flowing upwards and downwards. This approach helps optimize the stomach's function, harmonize the flow of energy within the body, and ultimately reduce or eliminate complaints of nausea and vomiting in pregnant women, as explained by Alfira (2017). One key aspect of this acupressure therapy is its ability to soothe the emotions of pregnant women. By creating balance in the energy flow, acupressure aids in alleviating stress and emotional tension, which may act as triggers for nausea and vomiting. Furthermore, this acupressure therapy can stimulate the body's regulatory system, triggering neurologic and endocrine responses. The neurologic mechanisms are involved in regulating bodily functions, including responses to stress and hormonal balance. Similarly, the endocrine mechanisms play a crucial role in maintaining hormonal balance and the physiological state of pregnant women. By activating these mechanisms, acupressure therapy not only focuses on the symptoms of nausea and vomiting but also contributes to the overall health maintenance of pregnant women (Alfira, 2017).

In this study, the researcher combined two therapeutic methods, namely acupressure on the Meridian P6 point and inhalation of peppermint aromatherapy. This combination process involves administering acupressure on the Meridian P6 point simultaneously with inhaling peppermint aromatherapy. The presence of peppermint aromatherapy provides comfort to the patients, creates a more tranquil atmosphere, and helps achieve a higher level of relaxation. The benefits can be experienced by pregnant women after receiving a session of peppermint aromatherapy, which can reduce the symptoms of nausea and vomiting they are experiencing. The administration of peppermint aromatherapy to pregnant women not only provides physical benefits but also helps improve emotional well-being. Peppermint aromatherapy can evoke feelings of freshness, relief, and comfort during pregnancy. This holistic approach involves the simultaneous use of acupressure and aromatherapy, creating a comprehensive experience for pregnant women experiencing nausea and vomiting. Thus, the combination of Meridian P6 acupressure and peppermint aromatherapy can be considered a comprehensive therapeutic strategy to enhance the well-being of pregnant women.

A comprehensive study has been conducted to evaluate the impact of peppermint essential oil aromatherapy on nausea and vomiting symptoms. The research findings indicate a significant reduction in nausea and vomiting symptoms after two days of using peppermint essential oil aromatherapy. By the fourth day, the peppermint-treated group experienced an average decrease of 33% in the levels of nausea and vomiting. The use of peppermint essential oil has proven to be beneficial in regulating energy storage and plays a crucial role in preventing diseases, heart dysfunction, and premature aging (Fatimah, 2018). These findings provide valuable insights into the potential of peppermint essential oil as an effective method for managing nausea and vomiting symptoms, highlighting its benefits in supporting overall health and preventing various health conditions (Fatimah, 2018).

"Effect of acupressure on the pericardium 6 point on the intensity of nausea and vomiting in pregnant women in the first trimester." The results of this study indicate a change in the intensity of nausea and vomiting experienced by pregnant women in the first trimester after applying acupressure to the Meridian P6 point. Meanwhile, Susanti's research (2017) focuses on the "Effect of inhalation of peppermint aromatherapy to reduce nausea and vomiting in the first trimester of pregnancy at BPM Istianatul Kebumen." The results of this study reveal that peppermint aromatherapy can reduce the frequency of nausea and vomiting in pregnant women in the first trimester by providing 2-3 drops of

peppermint aromatherapy on a tissue, inhaling it three times, and repeating every 5 minutes if the mother still feels nauseous. Another study conducted by Sherly (2017) focuses on the "Effect of peppermint aromatherapy on the intensity of nausea and vomiting in chronic kidney failure patients undergoing hemodialysis at RSUD Ungaran and RSUD Ambarawa." The results of the study in the intervention group at RSUD Ungaran show a decrease in the intensity of nausea and vomiting, indicating that peppermint aromatherapy has an effect on reducing the intensity of nausea and vomiting.

This study demonstrates its advantages and distinctions compared to previous research, as the combination of acupressure and peppermint aromatherapy intervention has not been explored before. Furthermore, the research involves a sample of pregnant women with moderate to severe nausea and vomiting complaints who are being treated in a hospital, with the control group receiving medication in the hospital. Based on the researcher's assumptions, the use of the combination of acupressure at the Meridian P6 point and peppermint aromatherapy inhalation makes the respondents feel calmer and more comfortable, reducing the sensation of nausea experienced by pregnant women after the intervention. Following the intervention, respondents reported a decrease in the frequency of nausea and vomiting, particularly during the morning, which was previously a peak time for these symptoms. Subsequently, during the day and night, the frequency of nausea and vomiting experienced by pregnant women further diminished. This indicates that the administration of the combination of acupressure at the Meridian P6 point and peppermint aromatherapy inhalation can effectively reduce the frequency of nausea and vomiting in pregnant women experiencing such complaints.

4. CONCLUSION

Based on the results of the conducted research, several important conclusions can be drawn. Firstly, the characteristics of the respondents in both the experimental and control groups indicate that the majority of them are primiparous women aged between 20-35 years, with a high school education, and employed as homemakers. Secondly, the analysis results show that the average frequency of nausea and vomiting in the experimental group before the intervention with a combination of acupressure on Meridian Point P6 and inhalation of peppermint aromatherapy at RSHM Yusuf Kalibalangan, North Lampung, was 11.33. After the intervention, this value experienced a significant decrease to 2.00. Thirdly, these findings support the positive impact of the combination of acupressure on Meridian Point P6 and inhalation of peppermint aromatherapy on reducing the frequency of nausea and vomiting in pregnant women in the first trimester at RSHM Yusuf Kalibalangan, North Lampung. Therefore, it can be concluded that this intervention has the potential to provide benefits in managing the symptoms of nausea and vomiting in pregnant women, contributing to our understanding of a holistic and sustainable treatment approach.

The limitations of this study need to be acknowledged to ensure careful interpretation of the results. Firstly, the research did not impose restrictions on primiparous pregnant women, potentially influencing the outcomes due to differences between primiparous and multiparous individuals. Secondly, the research focused on inpatient participants undergoing treatment, creating challenges in precisely distinguishing whether observed changes were a result of medical treatment or the interventions conducted. Lastly, the sample size in this study is relatively smaller compared to previous research, which may impact the generalization of findings. Therefore, these three limitations should be considered when evaluating and interpreting the results of this study.

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