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## The Effectiveness of Acupressure Therapy on Decreasing Complaints of Nausea and Vomiting in Pregnant Women

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**ABSTRACT**

Nausea vomiting or emesis gravidarum is a physiological complaint, but if the nausea vomiting complaint is not resolved quickly, it will cause this pathological, namely hyperemesis gravidarum. So that every meal and drink, there are complaints of vomiting continuously, which will result in malnutrition and dehydration in pregnant women. What can be done to prevent these complications is to do a non-pharmacological treatment, namely acupressure. The purpose of this literature review is to determine the effectiveness of acupressure therapy in reducing complaints of nausea and vomiting in pregnant women. This research is a literature review using data sources based on literature studies from the Science Direct, PubMed, and Scholar databases in the last five years. The strategy used to search for articles using PICO. Keywords according to the topic of a literature review using Boolean (AND, OR, NOT). The results obtained nine papers that were reviewed. Results found that acupressure therapy at point P6, point KID21, Zu San Li, and point Gong Sun can effectively reduce complaints of nausea and vomiting in pregnant women who are carried out regularly. The conclusion from this literature review is that non-pharmacological acupressure therapy is effective in reducing complaints of nausea and vomiting in pregnant women.

**Keywords:** acupressure; nausea and vomiting; emesis gravidarum; pregnant women; gestational

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### INTRODUCTION

Pregnancy is a natural event that will occur by a woman. When a woman is pregnant, there will be many changes in her body. One of them is physiological changes such as nausea, vomiting, back pain and frequent urination (Suryaningrum, Titisari, & Mediawati, 2018). The most common complaint felt by pregnant women in the early trimester is nausea and vomiting. The term that describes this state of nausea and vomiting is called emesis gravidarum or morning sickness, even though these complaints arise at any time, not just in the morning (Fatwa Tasya T, 2020). Morning sickness or nausea and vomiting is a condition in pregnant women that occurs at the 6<sup>th</sup> week of pregnancy and ends in the 11<sup>th</sup> week to the 16<sup>th</sup> week (Wahyuningsih S, 2019). Meanwhile, according to Ramadhani and Ayudia, (2019) morning sickness or nausea and vomiting starts at the 4<sup>th</sup> week ending in the 14<sup>th</sup> to 16<sup>th</sup> week of pregnancy.

Nausea vomiting or emesis gravidarum is a physiological complaint, but if the nausea and vomiting complaint is not resolved quickly, it will cause pathological problems because it can result in reduced fluid in the body and will result in hemo-concentration and later blood circulation will slow down so that it can affect development and growth in the fetus (Wulandari, Kustriyanti, & Aisyah, 2019). In addition, pregnant women who are facing emesis gravidarum, if left untreated, can cause hyperemesis gravidarum so that every meal and drink complaints of vomiting continuously occur (Henuk & Patticeilohy, 2019).

Nausea and vomiting in pregnant women rarely cause death, but the incidence is still quite high. According to the World Health Organization, (2014) the incidence of emesis gravidarum in pregnancy reaches 12.5% in the world. Meanwhile, the incidence of emesis gravidarum in Indonesia is 50 - 90% experienced by pregnant women (Faridah, Ponda, & Pertiwi, 2020). Based on the 2015 Ministry of Health in East Java, the incidence of pregnant women with emesis gravidarum was 10% - 15% of the 182,815 number of pregnant women in 2015. The incidence of hyperemesis gravidarum around the world varies widely, in Indonesia, namely 1.5 - 3% of the total pregnant women in Indonesia (Faridah et al., 2020). Meanwhile, based on the Indonesian Ministry of Health in 2018, the incidence of mothers with hyperemesis gravidarum in Indonesia reached 14.8% of all pregnancies.

Nausea and vomiting during pregnancy are caused by increased levels of the hormones estrogen and progesterone produced by Chorionic Gonadotropin (HCG) in the placenta (Soa, Amelia, & Octaviani, 2018). Pregnant women who experience complaints of nausea and vomiting are a natural symptom that will be felt in the first trimester, usually the mother will experience signs of symptoms such as dizziness, excessive salivation, and partially expelling food and even everything that has been consumed. In addition, there are many cases of pregnant women experiencing excessive nausea and vomiting that can worsen the general condition of the mother and can interfere with the daily activities of pregnant women. Nausea and vomiting in pregnancy can have serious repercussions on the mother and especially on the fetus. Low Birth Weight (LBW) and preterm birth are the most common consequences that can harm the fetus due to the severity of nausea and vomiting experienced by the mother (Sulistiarini, Widyawati, & Rahayu, 2018).

Pregnant women are required to be able to adapt to complaints of nausea and vomiting, if they cannot adapt it can cause harm to both the pregnant mother and the fetus in her womb. Pregnant women who experience nausea and vomiting really need adequate nutrition. If the nutritional intake is reduced, the weight of pregnant women will decrease, which can also have a negative impact on the fetus they are carrying (WS Dewi & Safitri, 2018). Pregnant women will experience complications if nausea and vomiting are not resolved. Malnutrition and dehydration are the most obvious complications. If pregnant women cannot handle it properly, it can result in loss of fluid in the stomach resulting in dehydration, hypokalemia, and metabolic alkalosis (Maheswara, Wahyuni, Istiqomah, & Kustiyati, 2020).

What can be done to prevent these complications is to do a management. Various preventive measures are taken by health workers for pregnant women who are experiencing nausea and vomiting so that the condition does not become more severe by changing the lifestyle of adequate rest and avoiding stress, and not consuming carbonated drinks and adjusting the diet a little but often (Dhilon & Azni, 2018). Treatment of pregnant women to treat nausea and vomiting is carried out by means of pharmacological treatment and non-pharmacological treatment. Antihistamines, antiemetics, and corticosteroids are pharmacological therapies that can be given to pregnant women when experiencing nausea and vomiting (Sulistiarini et al., 2018). Meanwhile, non-pharmacological therapy for complaints of nausea and vomiting of pregnant women is carried out by adjusting diet, emotional support, acupressure and ginger (Runiari, 2010) in (Sulistiarini et al., 2018).

This non-pharmacological treatment with the acupressure method is a method that is safe for pregnant women and their fetuses. This acupressure technique is a development of massage therapy, and is closely related to the development of acupuncture, because acupressure techniques originate from acupuncture. Acupressure therapy is carried out using fingers to replace needles, but it is still carried out at the same point in acupuncture therapy (Hartono, 2012) in (Renityas, 2019).

It has been proven in the research of Widyastuti et al. (2019) that after acupressure therapy intervention was carried out on pregnant women who were facing nausea and vomiting, the calculation of nausea and vomiting scores was  $0.005 < 0.05$ , there was a comparison between the results of the post-test and pre-test, which meant that the acupressure method was efficient. treat emesis gravidarum or nausea and vomiting in first trimester pregnant women. Likewise, in Mariza and Ayuningtias' research, (2019) the results obtained  $p\text{-value} = 0.000$ , which means that there is an effect of acupressure at point P6 to overcome emesis gravidarum. This stimulatory effect on P6 can increase the release of betaendorphins in the pituitary and adrenocorticotrophic (ACTH) along the CTZ which can block the vomiting center (Fengge, 2012) in deep (Tanjung, Wari, & Antoni, 2020).

Based on the explanation above, it can be concluded that there are many links regarding acupressure therapy in reducing complaints of nausea and vomiting in pregnant women. Therefore, the authors conducted a literature review on the effectiveness of acupressure therapy in reducing complaints of nausea and vomiting in pregnant women.

## METHOD

This study is a comprehensive summary in the form of a literature review on the effectiveness of acupressure therapy in reducing complaints of nausea and vomiting in pregnant women. The protocol and evaluation of the literature review will use the PRISMA checklist for the selection of studies found that are tailored to the purpose of the literature review. The method used is in the form of literature review, while the purpose of this study is to collect and analyze articles or journals related to acupressure therapy in pregnant women who experience complaints of nausea and vomiting. Literature search was carried out in January to February 2021. The data in this literature review used secondary data obtained from the results of previous research researchers from 2016 to 2021. Methods of data collection using electronic databases include Science Direct, PubMed, and Scholar.

Searching for journals or articles in review literature this uses keywords (AND, OR, NOT) which are used to specify and expand the search, so that it will be easier to determine which articles or journals to use. Keywords tailored to the Medical Subject Headings consisting of the following:

Table 1 Keywords literature review

<b>Acupressure</b>	<b>Nausea and Vomiting</b>	<b>Pregnancy</b>
<i>acupressure</i>	<i>Nausea and vomiting</i>	<i>Pregnant Women</i>
OR	OR	OR
<i>Pressure</i>	<i>Emesis Gravidarum</i>	<i>Gestational</i>
	OR	OR
	<i>NVP</i>	<i>Pregnancy</i>
	OR	
	<i>Morning Sickness</i>	

Strategy used to search articles using PICO, which consists of *Population / problem, Intervention, Comparison, and Study design*.

Table 2 Format PICO in the literature review

<b>Criteria for</b>	<b>Inclusion</b>	<b>exclusion</b>
Population	Studies comprised affected Pregnant Women with Nausea and vomiting, gestational age of <20 weeks, maternal age between 18-40 years	Pregnant women without nausea and vomiting, gestational age of > 20 weeks, maternal age not between 18 - 40 years
Intervention	Acupressure Therapy	No exclusion
Comparators	Treatment with vitamin B6 and metoclopramide	No comparator
Outcomes	Effect Acupressure Therapy on the nausea and vomiting	Not described Effect Acupressure Therapy on the nausea and vomiting
Study Design and publication Type	Quasi-experimental studies, randomized control and trial, qualitative research and cross-sectional studies	No exclusion
Publication years	Post-2016	Pre-2016
Language	English, Indonesian	Language other than English and Indonesian

The search strategy in this literature study uses a data base including Science Direct, PubMed, and Scholar through link to the National Library of the Republic of Indonesia and access from the University of Jember. In the initial search phase, there were 85 articles (ScienceDirect = 62, PubMed = 11, Scholar = 12), after being filtered from 2016 to 2021. There were 43 articles that did not match the study area. Then the researchers selected 17 articles with titles and abstracts. Obtained 3 articles not full text. And 2 articles apart from using English and Indonesian. After that the articles obtained were examined based on duplication, there were 2 articles that were the same so they were excluded. The total number of articles that can be reviewed is 9 articles. The results of the selection of this article can be illustrated in the Diagram Flow below.

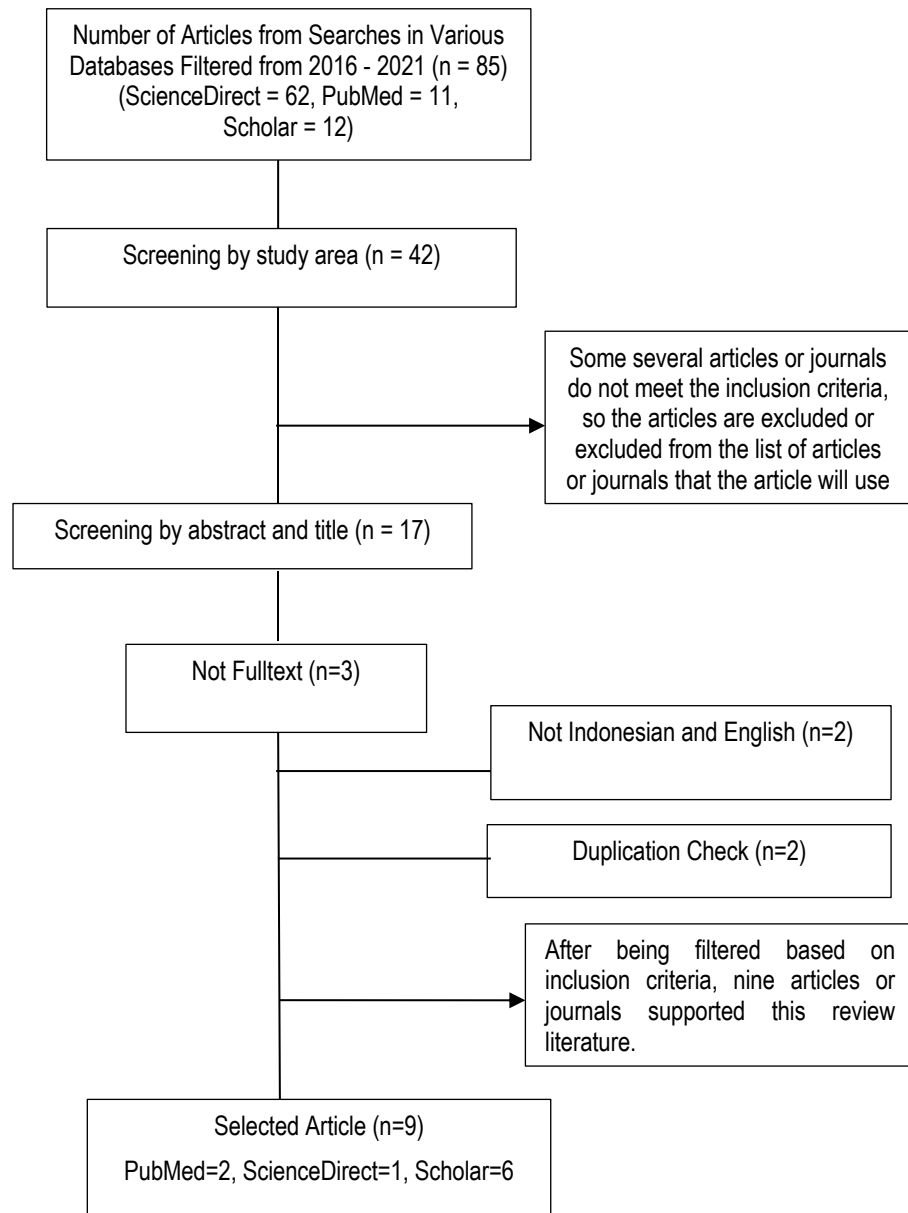


Figure 1. Diagram flow literature review

## RESULT

Table 3 Characteristics of Study

1.	Iran	(Mobarakabadi, Shahbazzadegan, & Ozgoli, 2020); (Galeshi, Ghanbarpour, Naeimi Rad, & Asghari, 2020); (Tara et al., 2020)
2.	India	(Devi, Lepcha, & Das, 2020)
3.	Indonesia	(Tanjung et al., 2020); (RK Dewi & Saidah, 2020); (Mariza & Ayuningtias, 2019); (Meiri & Kibas, 2018); (Handayani & Khairiyatul, 2019)

Respondents or participants in some of these studies, pregnant women aged 18-40 years experienced complaints of nausea and vomiting caused by physiological changes during pregnancy, with gestational age from 1 to 19

weeks (first trimester to early second trimester) due to complaints of nausea. and vomiting in pregnant women is very prone to occur in the first trimester.

Table 4 Theoretical Mapping

No.	Author	Title	Design and sample	Intervention	Results
1.	(Mobarakabadi et al., 2020)  Index: Q3	<i>The effect of P6 acupressure on nausea and vomiting of pregnancy</i>	A randomized, single-blind, placebo-controlled trial  75 pregnant women, mild to moderate nausea and vomiting, gestational age <20 weeks.	Pressed at P6 in the acupressure group for three days using thebutton <i>Sea-Band</i> . In the placebo group, <i>Sea-Band</i> was applied unstressed at P6. The control group did not receive any intervention, except for dietary recommendations which were similar to those of the other two groups. The frequency and severity of nausea and vomiting were recorded for six days, twice daily, with intervention starting on the fourth day.	There was a significant reduction in the frequency, duration and severity of nausea as well as the frequency of vomiting in the acupressure and placebo groups but not in the control group after three days of intervention. Acupressure on P6 that is applied using a <i>wristband</i> can reduce the frequency and severity of nausea and vomiting. And this is a safe method.  DOI: <a href="https://doi.org/10.1016/j.aimed.2019.07.002">https://doi.org/10.1016/j.aimed.2019.07.002</a>
2.	(Tara et al., 2020) Pubmed  Index: Q2	<i>The Effect of Acupressure on the Severity of Nausea, Vomiting, and Retching in Pregnant Women</i>	Randomized Controlled Trial  90 women with singleton pregnancies, gestational age below 12 weeks.	Patients were randomly divided into three groups: 1. PC6 pressure (4 times a day in the morning after waking, noon, evening and night before going to bed, for 10 minutes with constant pressure instead of with massage). 2. Fake acupressure (pressure in waiguan), and 3. treatment with vitamin B6 and metoclopramid.  Assessment of the severity of nausea, vomiting and vomiting was carried out based on the Rhodes Index on the	The three groups differed significantly on day five in terms of frequency of vomiting, distress due to vomiting, duration of nausea, distress due to nausea, amount of vomiting, frequency of nausea, and frequency of vomiting (p <0.001 for each outcome).  DOI: <a href="https://doi.org/10.1159/000505637">https://doi.org/10.1159/000505637</a>

				first and fifth days (before and after the intervention).	
3.	(Handayani & Khairiyatul, 2019)  Index: S3	Effect of Acupressure on Decreasing Nausea and Vomiting in Pregnant Women in Sidoarjo Midwife Independent Practice	Quasy-Experiment  22 pregnant women, trimester 1 - 2  The	intervention group was given acupressure treatment at the pericardium point 6, this was done once a day for 2 minutes, was carried out for 7 days, the control group was not treated.	There was a decrease in the intervention group with a value of 3.00 and in the control group the result was 0.36. The results of the Independent T-test statistical test $p = 0.010 < \alpha = 0.05$ . $H_0$ is rejected, which means that acupressure has an effect on reducing nausea and vomiting. Acupressure that is done regularly can reduce complaints of nausea and vomiting and prevent complications in pregnant women.  DOI: <a href="https://doi.org/10.36456/embrio.v11i2.2046">https://doi.org/10.36456/embrio.v11i2.2046</a>
4.	(Mariza & Ayuningtias, 2019)  Index: S4	Application of acupressure at point P6 to emesis gravidarum in 1st trimester pregnant women	Quantitative research type, Quasi experimental  30 mothers pregnant, TM 1, gestational age 10-16 weeks, age 20-40 years	Do massage on the location of 3 fingers above the wrist and circular, done for 7 minutes in the morning. This technique is carried out 4 days. The evaluation used questionnaire the Rhodes index on day 5 in the morning.	The results obtained p value = 0.000, which means that there is an effect of giving acupressure techniques at point P6 on gravidarum emesis  DOI: <a href="https://doi.org/10.33024/hjk.v13i3.1363">https://doi.org/10.33024/hjk.v13i3.1363</a>
5.	(Dewi Saidah & RK, 2020)  Index: S3	Effect Of Complementary Acupressure Therapy On Emesis Gravidarum In Pregnant Women First Trimester	Quasy Experiment Design  16 trimester 1 pregnant women	This research was conducted by giving a pre-test before being given treatment, after being processed, then given a posttest. The intervention given was acupressure therapy at point P6.	In the Wilcoxon test, there was a significant result, namely p value 0.002 ( $p < 0.05$ ), which means that there was a significant effect related to acupressure point P6 therapy in pregnant women who experienced emesis gravidarum.  DOI: <a href="https://doi.org/10.30994/sjik.v9i2.413">https://doi.org/10.30994/sjik.v9i2.413</a>
6.	(Tanjung et al., 2020)  Index: S4	Effect of Acupressure at Pericardium Point 6 on Intensity of Nausea and Vomiting in First Trimester Pregnant Women	Quasi experiment One Group Pretest - Posttest Only Design  20 pregnant women with 1st trimester	Assessing the intensity of nausea and vomiting using Pregnancy-Unique Quantification of Emesis and Nausea (PUQE) -24. Researchers performed acupressure pericardium 6 on	There is an effect of acupressure action at the pericardium point 6 (P6) on the intensity of nausea and vomiting of pregnant women in the first trimester with a p value of 0.000 ( $p < 0.05$ ).  E.ISSN.2614-6061 P.ISSN.2527-4295



			pregnant women who experienced nausea and vomiting. This intervention was carried out within 30 seconds to 2 minutes in the morning and evening for 5 days.	
7.	(Devi et al., 2020)  Index: Q4	<i>Effectiveness of P6 Acupressure on Reduction of Nausea, Vomiting &amp; Retching among Antenatal Women attending Antenatal Clinic at District Hospitals of Sikkim</i>	<i>Randomized Clinical Trial</i>  80 pregnant women, gestational age 8- 12 weeks.	The experimental group applied acupressure using a <i>wristband</i> placed on the wrist for 24 hours for 4 days. If there are side effects such as redness, swelling, and tenderness, the patient is instructed to remove the acupressure bracelet for 15 minutes.  Nausea and vomiting as well as retching scores in the experimental group showed a significant reduction compared to the control group (p <0.001). Acupressure at point P6 has been shown to be effective at reducing the duration, discomfort, and frequency of nausea, vomiting and retching.  DOI: <a href="https://doi.org/10.24321/2455.9318.202005">https://doi.org/10.24321/2455.9318.202005</a>
8.	(Galeshi et al., 2020)  Index: Q2	<i>A comparison of the effect of pressure on the KID21 (Youmen) and P6 (Neiguan) points on the severity of nausea and vomiting of pregnancy</i>	<i>Randomized single-blind clinical trial</i>  82 pregnant women, ages 18-35 years. 1st trimester with moderate to severe NVP	82 participants were randomly assigned to the pressure groups KID21 and P6. Researchers applied pressure to these two points for 2 minutes (1 minute clockwise, 1 minute counterclockwise) every day for four consecutive days.  The severity of NVP in the 82 participating pregnant women decreased in all groups (p <0.001), and there was no significant difference between the two groups in the severity of NVP (p = 0.68). The reduction in nausea was greater in the P6 group than in the group. KID21, and the decrease in vomiting was greater in the KID21 group than in the P6 group.  DOI: <a href="https://doi.org/10.1515/jcim-2019-0035">https://doi.org/10.1515/jcim-2019-0035</a>
9.	(Meiri & Kibas, 2018)  Index: S4	<i>Effect of Acupressure at Nei Guan, Zu Sanli and Gongsun Points on Reducing Nausea and Vomiting in First Trimester Pregnant Women in Pmb Afah Fahmi A.Md. Keb Surabaya</i>	<i>Quasi experiment, One group pretest - Posttest design</i>  15 trimester 1 pregnant women	Conducted a pre test so that researchers know that there is a decrease in nausea and vomiting after being given acupressure techniques for 9 days at points Nei Guan, Zu San Li and Gong Sun.  The results showed that there was a decrease in nausea and vomiting in pregnant women in the 1st trimester. The Wilcoxon test p-value was 0.000 <α (0.05).  DOI: <a href="https://doi.org/10.35842/mr.v13i3.175">https://doi.org/10.35842/mr.v13i3.175</a>

## DISCUSSION

Based on a study entitled The Effect of Acupressure on the Severity of Nausea, Vomiting, and Retching in Pregnant Women conducted by Tara et al, (2020) using a sample, women with first and single pregnancies as many as 90 participants. Researchers divided into 3 groups, namely the PC6 acupressure group, the sham acupressure performed in Waiguan and the vitamin B6 treatment group. All respondents have a gestational age of less than 12 weeks. The exclusion criteria in this study were respondents who had gastrointestinal problems, urinary tract infections,

and hyperemesis gravidarum. The intervention carried out in the PC6 acupressure group, namely the researchers applied pressure to the point Neiguan or PC6 4 times a day with the time in the morning after waking up, afternoon, evening, and night before going to sleep for 10 minutes. This pressure is applied with the greatest possible endurance with constant pressure. There were significant changes on the fifth day in terms of frequency of vomiting, difficulty vomiting, amount of vomiting, duration of nausea, difficulty of nausea, frequency of nausea, and frequency of retching ( $p < 0.001$  for each outcome). The overall results of the study indicated that the PC6 pressure intervention was significantly more effective than the drug therapy intervention. This is consistent with a study that the frequency of vomiting, nausea, and vomiting, as well as discomfort caused by nausea and vomiting was significantly lower in the PC6 acupoint pressure treatment group than in the control group undergoing drug therapy. Another study conducted in Turkey showed that in subjects undergoing PC6 stress, there was a decrease in the severity of nausea, the frequency of vomiting, and feelings of discomfort after nausea.

Whereas in Handayani and Khairiyatul's research, (2019) with respondents 22 pregnant women who have a pregnancy in the first to second trimesters. Respondents were given acupressure treatment at the point of the pericardium 6 which is located on 3 fingers above the wrist. The pressure is applied using the tip of the thumb. Initial pressing is done gently, then continued gradually using the force of the added pressure until you feel a light sensation, but do not cause pain. The acupressure is done once a day for 2 minutes. Intervention on these respondents was carried out for 7 days. Based on the results of the paired T-test, there was a significant difference before acupressure therapy was carried out and after acupressure therapy was carried out with  $p < \alpha$  so that  $H_0$  was rejected, which means that acupressure therapy had an effective effect on reducing complaints of nausea and vomiting in pregnant women.

Similar to Mariza and Ayuningtias' research, (2019) showed a result, namely that there was an effect of giving acupressure therapy at point P6 on emesis gravidarum with a statistical test value of  $p$  value = 0.000. The acupressure was given to respondents with the criteria that pregnant women were between 20-40 years old, had age of gestational 10 to 16 weeks and experienced moderate complaints of nausea and vomiting based on the INVR value of 9-16. Respondents were given acupressure treatment at point P6 for 7 minutes in the morning. This technique is done by the respondents themselves for 4 consecutive days.

These results are also in accordance with the research of Tanjung et al. (2020) obtained a value of  $p$  0,000 and it can be concluded that acupressure carried out in pericardium 6 has a major effect on the intensity of nausea and vomiting of pregnant women in the 1st trimester. acupressure at P6 with a time of 1 minute or 30 seconds to 2 minutes, done in the morning and evening. The intervention was carried out for 5 days. Respondents performed acupressure therapy by sitting or lying down in a comfortable position. If pregnant women feel relaxed or comfortable, then pregnant women can repeat the procedure. The characteristics of this study, most of the respondents were in the age group 26-35 years with the first trimester and experienced nausea and vomiting.

In Dewi and Saidah's research, (2020) which had pregnant women respondents before the acupressure intervention there were 3 people who experienced mild nausea and vomiting, 10 people experienced moderate nausea and vomiting, and 3 other pregnant women experienced severe nausea and vomiting. The pregnant woman was then given acupressure therapy at point P6. After being given the therapy, it was found that 10 pregnant women (62.5%) experienced mild changes in nausea and vomiting, while 6 other pregnant women experienced moderate nausea and vomiting with a result of 37.5%. So, the researchers concluded that acupressure therapy at point P6 is a complementary therapy that can reduce complaints of nausea, vomiting or emesis gravidarum in first trimester pregnant women.

However, based on a study entitled the effect of P6 acupressure on nausea and vomiting of pregnancy conducted by Mobarakabadi et al, (2020) using a sample of pregnant women with gestational age criteria under 20 weeks, and consisting of 75 respondents. Respondents had complaints of mild to moderate nausea and / or vomiting which had been measured using a Likert scale before starting the intervention. This study had exclusion criteria, including hyperemesis gravidarum, pregnant women who needed hydration therapy or antiemetic drugs, and those who had a history of accidents or trauma. In the acupressure group the intervention carried out was applying permanent pressure to point P6 using bracelets Sea-Band on both wrists. The intervention was carried out for 3 days, except when the participant went to the bathroom, then the bracelet was removed first. For the placebo group they used the wristbands in the same method as the acupressure group but without the presence of a push button on the wristbands. There were differences in the mean value of nausea with respect to the frequency, duration, and severity after the interventions with a  $P$  value  $< 0.001$ . The investigators also found a significant difference in the frequency of vomiting with a result of  $P = 0.02$ . This means that P6 acupressure using Sea-Band can reduce the frequency and severity of nausea and the frequency of vomiting. Whereas in the Tukey Test, the acupressure and placebo groups did not differ significantly from each other in this respect ( $P = 0.61$ ). These results are consistent with previous studies that the use of Sea-Bands at point P6 can reduce the severity of nausea and vomiting. Another similar study also found that the significant difference



between the acupressure and placebo groups was due to first, it could be argued that the women who wore the bracelet believed the band would reduce their nausea and vomiting, indicating a placebo effect. Second, the bracelet used in the placebo group stimulated the P6 point even without a push button.

This is in line with research by Devi et al. (2020) who argued that there was a significant reduction in the mean score for nausea, vomiting and retching and the total score after applying acupressure wristbands on P6 in antenatal women. This has been proven in 40 pregnant women in the experimental group with complaints of mild nausea, with or without vomiting and retching with gestational age 10 to 12 weeks. Participants in the experimental group received acupressure wristbands worn at the P6 point *neiguan* for 4 days in 24 hours unless the pregnant women were about to shower, they could take them off.



Figure 2 Acupressure wristband (Source: Devi et al, 2020)

An acupressure wristband is a product used at points *neiguan* in acupressure. It consists of an elastic band that is joined by plastic buttons to apply pressure to the skin at specific acupoints. If there are side effects such as redness, swelling, and tenderness or *paranesthesia*, the patient is instructed to remove the acupressure bracelet for 15 minutes by recording the time and cause in a diary. The results in this study after intervening with acupressure therapy using a bracelet at point P6, an average of nausea ( $6.35 \pm <0> 3.77$ ), vomiting ( $4.42 \pm 3.85$ ) and score *retching obtained* ( $2.6 \pm 2, 24$ ). This indicates that the mean post test score is lower than the mean pre-test score which was found to be statistically significant than the control group.

In addition to the P6 acupressure point, complaints of nausea and vomiting in pregnant women can be done at other points. There is a study entitled A comparison of the effect of pressure on the KID21 (Youmen) and P6 (Neiguan) points on the severity of nausea and vomiting of pregnancy, researchers conducted acupressure therapy at the KID21 point or *yumumen* and P6 point or *neiguan* in pregnant women with ages 18-35 years are in the first trimester and have a singleton pregnancy. The pregnant woman had moderate to severe NVP complaints. Researchers divided into 2 groups, namely the KID21 group of 42 participants and the P6 group of 40 participants who were followed until the end of the study. Both groups received 80 mg of vitamin B6 daily (2 tablets 40 mg every 12 hours) prior to the acupressure intervention. This is because the researcher did not prevent one group from getting the minimum treatment out of respect for ethics. Researchers performed acupressure interventions in a supine position between 17.00 and 19.00 in pregnant women. Furthermore, a trained researcher gently placed his thumb on the KID21 point in the first group and at the P6 point in the second group and gradually applied painless pressure. If there is pain, the researcher stops applying pressure until there is no pain, then continues the pressure. The pressure is applied for 2 minutes at the point pressure KID21 or P6, which is 1 minute clockwise and 1 minute counter clockwise. Then, the application of pressure is stopped and the point is massaged for another 2 minutes just for meridian stimulation. This process continues for up to 20 minutes. Pressure was applied by the researcher for 4 consecutive days, each day for 20 minutes. The results showed that there was a decrease in the severity of nausea in both groups for 4 days, but there was no significant difference between the two groups ( $F = 1.54, df = 1, p = 0.21$ ) although the decrease in nausea was greater in the P6 group than in the KID group. The severity of vomiting also decreased in both groups during these 4 days, but there was no significant difference between the two groups ( $F = 1.19, df = 1, p = 0.27$ ) although the decrease in vomiting was greater in the KID21 group than in the P6 group. This study shows that pressure at the P6 and KID21 points can reduce the severity of NVP, but neither point has an advantage over the others in reducing this complaint (Galeshi et al, 2020).

Whereas in the research of Meiri and Kibas, (2018) the respondents were 15 pregnant women in the first trimester. The researcher gave an intervention, namely giving acupressure for 9 days at the Nei Guan or P6 point, Zu San Li, and the Gong Sun point to the respondent. There are results, namely ( $P < 0.05$ ), which means that there is an effect of acupressure therapy to reduce complaints of nausea and vomiting of pregnant women because these points

can produce a stimulation that causes the hormone cortisol to come out, so that it can increase a metabolism in the body and complaints of nausea. vomiting in pregnant women that you feel can be reduced.

## CONCLUSION

Based on several journal articles that have been *reviewed*, it can be concluded that there is an effect of acupressure therapy at the point *neiguan* or P6, the KID point21. (*Youmen*), St 36 (*Zu San Li*), and point Sp 3 (*Gong Sun*) to reduce complaints of nausea and vomiting of pregnant women. This therapy is effectively given by applying pressure using the tip of the thumb. The intensity of the initial pressing is done gently, then the strength of the pressure is increased gradually but does not cause pain in the patient. Emphasis is given by turning clockwise. The duration of time for giving P6 acupressure therapy using the thumb is carried out 2-10 minutes 4 times a day, namely in the morning after waking up, noon, evening, and night before going to sleep in 3-7 days. This intervention can be done in a sitting or lying position in a position that is comfortable for the patient. While acupressure therapy using an acupressure bracelet or *wristband* is effective for pregnant women with a duration of 24 hours for 3-4 days, except for bathing, the bracelet must be removed. If there are side effects such as redness, swelling, and tenderness or *paranesthesia* when using the acupressure bracelet, the patient can remove the acupressure bracelet for 15 minutes. Based on the results of a *review* of several studies, acupressure therapy is not indicated for pregnant women who have gastrointestinal problems, urinary tract infections, and have a history of accidents or trauma. But acupressure therapy is more effective for pregnant women who have mild to moderate complaints of nausea and vomiting, from the first to the early second trimester, namely 6-19 weeks of pregnancy, and the mother's age is 18-40 years.

The suggestions for preparing the next literature review include searching for better articles in the last 5 years, which aim that the articles to be *reviewed* are the latest and most recent articles, search for journal articles is carried out on a varied database so that the articles obtained are more numerous and homogeneous, and more pay attention to the inclusion and exclusion criteria in the search for articles so that the implementation of the next literature review is more focused.

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