

# Application of Acupressure to Reduce the Risk of Hypertension Complications in Pregnant Women at Upt Puskesmas (Community Health Center) Gajah Mada Tembilahan, Riau

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### ABSTRACT

WHO systematically evaluates maternal mortality worldwide. In developed countries, 16% of maternal deaths are caused by hypertension. Data from the Ministry of Health shows that the number of maternal deaths in 2022 caused by the three main causes of maternal death are bleeding (30%), hypertension in pregnancy (25%), and infection (12%). Hypertension is a disease with high prevalence and the number continues to increase every year. The largest proportion of hypertension cases comes from developing countries. Hypertension in pregnant women is influenced by several factors, namely age, nutrition, twin pregnancy and anxiety [1]. The results of the study by Rubertsson et al stated that depression and anxiety in early pregnancy are associated with the risk of preeclampsia [2]. One of the non-pharmacological therapy methods that can be applied in the community is acupressure, in the form of modality therapy that can be used by nurses as part of a comprehensive nursing plan, in providing support to women during the pregnancy process (DID Sulistyowati, 2022). Acupressure is a non-pharmacological therapy that can lower blood pressure in hypertensive patients and can be included in the midwifery care plan for hypertension. The purpose of this study was to see if there was an effect of acupressure therapy on lowering blood pressure pregnancy woman [3,4].

The type of research used was quantitative with a quasi-experimental design using a one group pretest and posttest group design. The population was all pregnant woman hypertension sufferers who came to the Health Center. A sample of 21 people was determined by purposive sampling. The study was conducted on November 11-16, 2024. The instruments in this study were Sphygmomanometer, Stethoscope, Olive oil, Wet and dry tissues, Mattress and Blood pressure observation sheet. In Bivariate Analysis, the results showed that the p-value was smaller than the alpha value (0.000 <0.05). So, it can be concluded that there is a significant difference in the average systolic diastolic pressure before and after acupressure intervention.

**Keywords:** Acupressure Therapy, Hypertension, Pregnant Women

### Introduction

About eight million women/ years of experiencing pregnancy complications and more than half a million of them died, of which 99% occurred in Developing country. Death rate due to pregnancy complications and births in developed countries is 1 in 5000 women, which is a far-off figure lower than in the State developing, namely 1 in 11 women died due to pregnancy complications and childbirth.

World Health Organization (WHO) stated that the death of a pregnant woman occurred almost every two minutes in the year 2020. In the same year, every day nearly 800 women died due to preventable causes related to pregnancy and childbirth. Data The Ministry of Health indicated that the number maternal death in 2022 which caused by three main causes maternal death is bleeding (30%), hypertension in pregnancy (25%), and infection (12%). Hypertension included diseases with high prevalence and the number continues to increase every year the year. Proportion of hypertension incidents the largest comes from the country develop.

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WHO evaluates maternal mortality throughout the world systematically. In developed countries, 16% of maternal deaths occur caused by hypertension. This percentage is greater than three another major cause of death. Actual hypertension-related deaths can be prevented. How about time Pregnancy does not trigger or worsen hypertension at this time known, even hypertension unsolved in the world obstetrics. (Cunningham, 2019) Hypertension in pregnancy is 5-15% complications of pregnancy and sufficient tall. This is caused by other than the etiology is unclear, nor is the treatment in labor that is still being treated by non-medical and system officer's imperfect reference. Hypertension in pregnancy can experienced by all levels of pregnant women so knowledge about management of hypertension in pregnancy must be truly understood by all medical personnel both at the center and in area. World health report states that there are about 358,000 maternal deaths in 2022 which consisting of South Asia (46%) and Sub-Saharan Africa (39%) or approx (85%) maternal deaths occur in the country develop. Meanwhile in Southeast Asian countries it is 180 mothers per 100,000 live births (Christina, 2022).

In Indonesia, hypertension is the first ranked cause deaths in 2000. Prevalence hypertension in Indonesia increased by 26.5% and partly Most (63.2%) cases of hypertension did not diagnose. Increased incidence Hypertension occurs together with increasing age. Number the incidence of hypertension is higher in women, economic status low, smoking behavior, patient with diabetes mellitus, and obesity.

Maternal mortality rate in Indonesia in 2022 it will show a decline to 285 maternal deaths per 100,000 live birth and become ranked 12 of 18 ASEAN countries and SEARO [5]. Highest number There are cases of hypertension in pregnant women in the province of North Sumatra as many as 85.2% and in Riau Province as much 67.2 %. Highest cases of hypertension occur throughout the Riau region with a total of 234,771 cases (54.57%) in 2021 [6].

Pregnant women's hypertension is affected by several factors, namely age, nutrition, multiple pregnancies and anxiety [1]. The research results of Rubertsson et al states that depression and anxiety in early pregnancy, related to the risk of occurrence preeclampsia [2-7].

Indonesian society has been around for a long time apply non-pharmacological therapy and herbs in dealing with health. Several non-pharmacological methods have been applied in clinics or homes sick, also the community to help overcome problems in pregnant women. One of the therapeutic methods non-pharmacological that can be applied in society is acupressure, where is part of practice nursing, in the form of therapy modalities that can be used by nurse as part of the plan comprehensive, in-depth nursing provide support to women during the pregnancy process (DID Sulistyowati, 2022). these efforts as an integral part of development national are expected to have great contribution in improve community welfare continuously according to progress Science, Technology and Arts (Science and Technology).

However, there are still a lot of numbers the incidence of hypertension is then carried out one of the efforts to reduce blood

pressure through care complementary, namely acupressure or massage at certain points. (RI Ministry of Health, 2020). Massage technique Acupressure is a derivative of science acupuncture; points used the same as those used in therapy acupuncture. The benefits of acupressure include others help in management stress, calm nervous tension, and increases body relaxation. This acupressure therapy technique using your fingers performed at that meridian point associated with symptoms of hypertension. Certain internal massages Acupressure therapy can stimulate nerve waves so it can improve blood circulation, relaxes spasms, and lower blood pressure [8].

Acupressure is one therapy non-pharmacological can reduce blood pressure in hypertensive patients and can be included in the plan midwifery care for hypertension [3,4]. This is in accordance with research conducted about "Reducing blood pressure hypertension sufferers after administration Acupressure therapy" with results research shows there is an effect administering acupressure therapy to decrease in blood pressure in patient's hypertension in the work area of the health center Mamboro [9].

Based on the description above, is there any effect of acupressure therapy on reducing blood pressure and anxiety in people with hypertension. It is hoped that the benefits of this research will be used as material for consideration to increase knowledge insight and as an alternative service complementary so it can be improving service quality midwifery in society.

## Research Methods

The type of research used is quantitative with a quasi-experimental design using a one group pretest and posttest design where in this study a control group was not used, but the researcher only intervened in one group by comparing blood pressure before and after giving acupressure therapy. The population in this study were all hypertension sufferers who came to the Community Health Center. The sample in this study involved 21 pregnant women with hypertension who were determined using purposive sampling by calculating the sample size using the minimum sample formula for analytical numerical research that met the criteria. The instruments in this study were acupressure therapy tools in the form of a sphygmomanometer, stethoscope, olive oil, wet and dry tissue, mat and blood pressure observation sheet. Data collection was carried out by measuring blood pressure before acupressure therapy was carried out, then acupressure was given at points in the area which became acupressure points, namely 4 fingers above the internal malleolus, the proximal area where the bones of metatarsal I and metatarsal II meet, 3 fingers above above the wrist, at the crease of the elbow, 2 fingers from the back hairline in a groove, 2 fingers behind the ilaryngeal prominence and in front of the carotid artery. Researchers carried out blood pressure checks 10 minutes after therapy, with a duration of 15 minutes of therapy. After therapy, blood pressure, both systolic and diastolic, is measured again.

Data analysis consisted of univariate and bivariate. Univariate analysis to describe each variable and respondent characteristics in the form of mean, median, standard deviation (SD), minimum and maximum pre-post intervention values. Next, bivariate analysis was carried out using a paired t-test to determine the difference in average systolic blood pressure, while the Wilcoxon

test was carried out for pre-post diastolic blood pressure. Degree of confidence 95% ( $\alpha = 0.05$ ).

## Results and Discussion

The results of research on the application of acupressure to reduce the risk of complications of hypertension in pregnant women that have been carried out show the following results.

**Table 1: Distribution of Blood Pressure, and Test of the Effect of Acupressure Therapy on Blood Pressure in Pregnant Women**

S	Before Therapy			After Therapy			Different Mean Pre - Post	P- Value
	Mean	SD	Min - Max	Mean	SD	Min - Max		
Systolic	164,02	13,89	135,00-183,00	141,44	9,77	130,33-162,00	13,98	0,000
Diastolic	91,49	8,17	78,67-102,67	87,71	6,07	75,33-97,67	4,78	0,000

In the Univariate Analysis, the results showed that the average systolic pressure before the acupressure intervention was 164.02 mmHg with the lowest systolic pressure being 135 mmHg and the highest being 183 mmHg. Meanwhile, the average systolic

pressure after acupressure intervention was 141.44 mmHg with the lowest systolic pressure being 130.33 mmHg and the highest being 162 mmHg. The average diastolic pressure before acupressure intervention was 91.49 mmHg with the lowest diastolic pressure being 78.67 mmHg and the highest being 102.67 mmHg. Meanwhile, the average diastolic pressure after acupressure intervention was 87.71 mmHg with the lowest diastolic pressure being 75.33 mmHg and the highest being 97.67 mmHg.

In the Bivariate Analysis, the result was that the p-value was smaller than the alpha value ( $0.000 < 0.05$ ). So, it can be concluded that there is a significant difference in average systolic pressure before and after the acupressure intervention was given. And diastolic pressure shows that the p-value is smaller than the alpha value ( $0.000 < 0.05$ ). So, it can be concluded that there is a significant difference in the average diastolic pressure before and after the acupressure intervention.

Some hypertensive patients usually experience signs and symptoms such as severe headaches, blurred vision, ringing in the ears, confusion, irregular heartbeat, chest pain, dizziness, weakness, fatigue, difficulty breathing, restlessness, nausea or vomiting, epistaxis, blood in the blood. urine, increased jugular veins and decreased consciousness. Pain is a symptom that is one of the clinical manifestations of hypertension sufferers. Pain is a sensory and emotional experience where a person experiencing pain feels uncomfortable and the pain can only be felt by the sufferer or is subjective [8,9].

The incidence of hypertension in pregnancy is around 5-15%, and is one of the 3 causes of maternal mortality and morbidity in addition to infection and bleeding. The frequency of complications in pregnancy and childbirth also increases in pregnant women who have hypertension. The further impacts of pregnancy hypertension include the risk of maternal death, prematurity rates, low birth weight babies and increased perinatal mortality rates [10]. Hypertension in pregnancy can cause complications for the mother in the form of thrombocytopenia, myocardial infarction, pulmonary edema, maternal death and decreased kidney function. The impacts can also have consequences for

the fetus, in the form of fetal death and low birth weight (LBW) babies. The impact is in the form of fetal deaths of 17% and the incidence of low birth weight (LBW) babies of 34% [11].

Based on research results, hypertension treatment can be carried out pharmacologically and non-pharmacologically (Kemenkes. RI, 2014) [12]. Non-pharmacological treatment is a form of treatment service that uses methods, tools or materials that are used as an alternative or complement to certain medical treatments. Acupressure is an easy procedure to do and has many benefits. Acupressure is very practical because touch has its own magic which is very useful for relieving fatigue in the body, improving blood circulation, stimulating the body to remove toxins. Pressing the tips of the hands on certain areas on the surface of the skin has a positive impact on physical, mental and social conditions (Majid & Rini, 2016) [13-17].

The way acupressure works is by identifying a disease based on acupressure points or acupoints located in the meridian channels. The benefits of acupressure include helping to manage stress, calming nervous tension, and increasing body relaxation [18,19]. This therapy technique uses fingers applied to points related to hypertension. Massages at certain points in acupressure therapy can stimulate nerve waves so that they can improve blood flow, relax spasms, and lower blood pressure (Moradi et al., 2014) [20].

Giving acupressure therapy to hypertension sufferers aims to relax the body, where the effect of acupressure can stimulate mast cells to release histamine as a mediator of vasodilation of blood vessels, resulting in increased blood circulation which makes the body more comfortable [22]. Acupressure points are performed at several acupuncture points, namely (Point Lr 2 (Xingjian), Point Lr 3 (Taichong), Point Sp 6 (Sanyinjiao), Point Ki 3 (Taixi), Point Li 4 (Hegu), Point PC 6 (Neiguan), (Majid & Rini, 2016).

Several studies have shown that acupressure therapy can reduce blood pressure, such as research by Kamelia & Ariyani (2021) which proves that acupressure therapy is effective in lowering blood pressure as evidenced by the difference in mean artery pressure before and after therapy of 13.98 for systolic and 4.78 for diastolic with p-value = 0.000. This is also in line with research by Suwarini et al., (2021) which shows differences in blood pressure before and after being given acupressure therapy

intervention to the elderly at the Kediri I Community Health Center, Tabanan Regency, where the average blood pressure before the intervention was 152.35/97.65 mmHg, whereas after the intervention the average blood pressure was 140.74/90.59 mmHg [23,24].

## Conclusion

This research is useful for improving public health and helping government programs reduce maternal and child mortality rates. Apart from that, research on the application of acupressure can also prevent non-communicable diseases, namely hypertension, especially in pregnant women, it can prevent ongoing preeclampsia. The public is advised to continue regular check-ups with health workers. The next program requires assistance for people at risk, including cadres.

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