

The Effectiveness of Wet Cupping Therapy and Giving Noni Herbal Medicines Against Blood Pressure in Hypertensive Patients

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ABSTRACT

Background: Cupping and noni herbal medicine can lower blood pressure. With wet cupping therapy and consuming noni herbal medicine regularly, capillary dilatation will occur, causing an improvement in the microcirculation of blood vessels. **Method:** This research is quasi-experimental using the type of research design Control Time Series Design. The sampling method used purposive sampling, the independent variables were wet cupping therapy and noni herbal medicine while the dependent variable was blood pressure. Due to the limitations of the researchers, only 18 respondents were divided into two groups, namely the intervention and control groups. The subjects of the study were patients with mild hypertension, aged 20-60 years, residents of the Work Area of the West Singkawang Health Center, Singkawang City. Respondents were observed by measuring blood pressure before and after therapy. **Results:** The results of the measurement of systolic blood pressure in the intervention group experienced a decrease in blood pressure by an average of 15 mmHg as many as 4 people (44%). Meanwhile, diastolic blood pressure in the intervention group also experienced a decrease in blood pressure by an average of 10 mmHg by 5 people (56%). The results of the measurement of systolic blood pressure in the control group also experienced a decrease in blood pressure by an average of 5 mmHg by 5 people (56%). While diastolic blood pressure in the control group experienced a decrease in blood pressure by an average of 5 mmHg as many as 4 people (44%). **Conclusion:** Cupping therapy and the administration of noni herbal medicine have no difference in effectiveness on blood pressure due to many factors that cannot be controlled, namely diet. But for the clinical results, cupping and this herbal medicine can lower blood pressure.

I. Introduction

Hypertension is often called the silent killer because this disorder is an asymptomatic condition, but if left unchecked and lasts for a long time it can cause permanent damage to vital body organs such as the heart, kidneys, and brain ([Rosidawati and Nurahmi, 2016](#)). Hypertension is a disease characterized by an increase in blood pressure in the body. Hypertension can be defined as persistently high blood pressure where systolic > 140 mmHg and diastolic blood pressure > 90 mmHg ([Irawan and Ari, 2012](#)). Hypertension is the most common cause of cardiovascular events and is a major problem in both developed and developing countries. Cardiovascular is also the number one cause of death in the world every year. People in general are now familiar with alternative therapies to lower blood pressure, one of which is wet cupping therapy. Wet cupping itself has the meaning of a process of removing dirty blood containing toxins from the surface of the skin ([Suryanda, Amin and Indriani, 2017](#)).

The World Health Organization (WHO) predicts that the number of people with hypertension will continue to increase along with the increase in the world's population, and in 2025 it is projected that around 29 percent of the world's population will be affected by hypertension. In Asia alone, hypertension has killed 1.5 million people every year, it indicates that one in three people suffer from hypertension ([Rosidawati and Nurahmi, 2016](#)). In Indonesia, the prevalence of hypertension in 2018 increased from 2013, according to the 2013 Basic Health Research, the incidence of hypertension was 25.8%, while in 2018 it increased to 34.1% ([Ministry of Health of the Republic of Indonesia, 2018b](#)). This is what we must pay attention to the increasing incidence of hypertension in Indonesia. We as health workers must strive to reduce the incidence of hypertension for the coming year. The prevalence of hypertension in the province of West Kalimantan in 2018 was 36.99% and the prevalence in the city of Singkawang reached 42.94% ([Ministry of Health, 2018a](#)). Based on the results of a preliminary survey conducted in the working area of the West Singkawang Public Health Center, there were 199 patients with hypertension. Based on the results of a preliminary survey in the working area of the West Singkawang Health Center, 60% of residents are familiar with cupping therapy treatment techniques and 40% of them do not know the cupping therapy technique at all. These residents often do cupping therapy at traditional health care facilities in Singkawang City regularly at least once a month. The results of interviews conducted with residents showed that after cupping therapy, there was a headache and now it is no longer a headache, and some residents also said that cupping therapy did not have any changes but their bodies felt healthier. Hypertension is the most important factor in coronary heart disease and cerebrovascular disease (stroke) and is a direct cause of congestive heart failure. According to the cause, hypertension is divided into 2 groups, namely essential hypertension or primary hypertension. Approximately 90-95% of cases and the cause is unknown. Most hypertensive patients are overweight, and studies show that excess weight gain and obesity confer a 65-70% risk of developing primary hypertension; Secondary hypertension accounts for about 5% of cases. Specific causes are known, such as estrogen use, kidney disease, renal vascular hypertension, primary hyperaldosteronism and Cushing's syndrome, pheochromocytoma, coarctation of the aorta, pregnancy-related hypertension, and others ([Fatonah, Rihiantoro and Astuti, 2015](#)).

Along with current technological advances, many treatment methods are developing in the world. Many non-pharmacological treatments have been found to help lower blood pressure in cases of hypertension sufferers, one of which is acupuncture, cupping, traditional plants, acupressure, reflexology, hypnotherapy, and others. People are now starting to turn to non-pharmacological treatment, because they know the side effects of using pharmacology that can damage the liver and kidneys if used for a long time. Non-pharmacological treatment is the development of cupping therapy which is often used by people with hypertension to lower blood pressure ([Astuti and Syarifah, 2018](#)). Non-pharmacological treatment given to patients with hypertension is not only given cupping therapy, but can also take the herbal medicine Noni (*Morinda Citrifolia L*) which is known to have many benefits contained in the noni fruit for human health. The effects of noni fruit (*Morinda Citrifolia L*) include antithrombolytic, antioxidant, analgesic, anti-inflammatory, and xanthine oxidase inhibitor activity. Noni can also lower blood pressure and vasodilation of blood vessels ([Sari, 2015](#)).

The role of nurses in cupping therapy as caregiver, advocate, educator, researcher. Handling hypertension can be done pharmacologically, non-pharmacologically, as well as complementary medicine. Lately, many people like complementary therapeutic treatment, for several reasons, including: the cost is affordable, does not use chemicals and the healing effect is quite significant and one of the complementary treatments that can treat hypertension is cupping therapy ([Susanah, Sutriningsih and Warsono, 2017](#)). This treatment technique is sunnah by the Prophet as in the hadith narrated by Bukhari: "Healing is in 3 things: by drinking honey, hijamah knife and hot iron. And I forbid my people with a hot iron." (H.R. Bukhari). ([Fahmy and Gugun, 2008](#))

Cupping is a treatment technique using glass, tube, or bamboo, the process begins with cupping (making negative pressure in glass, tube, or bamboo) at the cupping point, causing a local dam on the skin surface. In the wet cupping technique, after local damming occurs, the process is continued by

cutting the skin surface using a scalpel or inserting a cupping needle so that blood containing toxins can be removed. The mechanism of action of Cupping in improving health, especially in lowering blood pressure. As a result of damage to Mast Cells, several substances such as Serotonin, Histamine, Bradykinin, Slow Reacting Substance (SRS) will be released, as well as other unknown substances. These substances cause capillary and arteriolar dilatation, as well as flare reactions in the cupped area. Capillary dilatation can also occur in places far from the place of cupping, this causes an improvement in the microcirculation of blood vessels. As a result, there is a relaxing effect (relaxation) of stiff muscles and due to vasodilation or general dilation of blood vessels, it will lower blood pressure steadily. In addition, the most important is the release of Corticotropin Releasing Factor (CRF) and other releasing factors by the adeno pituitary. CRF will then cause the formation of ACTH, corticotropin, and corticosteroids. This corticosteroid has the effect of curing inflammation and stabilizing cell permeability. Meanwhile, the histamine group that it produces provides benefits in the process of repairing (repair) damaged cells and tissues, and stimulates the formation of Reticulo Endothelial Cells, which will increase the body's resistance (endurance) and immunity (immunity). ([Fatonah, Rihiantoro and Astuti, 2015](#))

Other studies have shown that skin cupping will stimulate the skin surface nerves which will be continued on the posterior horn of the spinal cord through the A-delta and C nerves, and the spino thalamic tract towards the thalamus which will produce endorphins. While some other stimuli will be transmitted through sympathetic afferent fibers to the motor neurons and cause pain intubation reflex. Another effect is the dilation of skin blood vessels, and an increase in the work of the heart. ([Fatonah, Rihiantoro and Astuti, 2015](#))

At this time in Western countries (Europe and America) through scientific research, seriously and continuously conclude scientific facts how the miracle of cupping so that it can cure various diseases more safely and effectively than modern medical methods. So cupping is applied in everyday life and cupping experts and cupping clinics have sprung up in big cities in America and Europe. Even in recent years the treatment with cupping has been studied in the curriculum of the School of Medicine in America. Cupping is the legacy of Rasulullah SAW, the best doctor of all time. Research by Krousel-Wood et al (2010) factors related to the use of alternative therapy (cupping) in hypertensive patients are sociodemography, education level, culture, belief and economy. The reason for the shift of patients from conventional treatment to alternative therapy is because medical treatment is getting more expensive, there are side effects from using chemical drugs in the long term, and healing through medical methods is not 100%, especially for chronic diseases. ([Susanah, Sutriningsih and Warsono, 2017](#))

II. METHODS

The independent variables in this study were wet cupping therapy and the administration of noni fruit extract herbal medicine, while the dependent variable in this study was blood pressure. This study uses a Quasi Experimental research method using a Control Time Series Design research design. The population in this study were all hypertensive patients who received therapy in the work area of the West Singkawang Public Health Center as many as 199 people. with the type of sampling purposive sampling. Collecting data using a questionnaire to families and patients then analyzed by Independent Sample Test.

III. RESULTS

Table 1. Results of Independent Sample Test on cupping therapy and administration of noni herbal medicine by measuring systolic blood pressure before and after cupping therapy and taking herbal medicine in the Work Area of the West Singkawang Health Center on 23 December 2019 – 12 January 2020.

Independent Samples Test

	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Equal Variances assumed	2.012	.175	1.822	16	.087	26.05820	14.30117	-4.25892	56.37532

The results of the observation of systolic blood pressure before and after treatment in cupping therapy and the administration of noni herbal medicine were obtained from a significance level of P value = 0.087 from P Value > 0.05. So in this statistical test it is concluded that Ho is accepted and H1 is rejected. So the results of this statistical test concluded that there was no significant (significant) difference in effectiveness between wet cupping therapy and the administration of herbal medicine in the Work Area of the West Singkawang Health Center, Singkawang City.

Table 2. Results of Independent Sample Test on cupping therapy and administration of noni herbal medicine by measuring diastolic blood pressure before and after cupping therapy and taking herbal medicine in the Work Area of the West Singkawang Health Center on 23 December 2019 – 12 January 2020.

	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Equal Variances assumed	.941	.346	1.809	16	.089	16.66667	9.21285	-2.86370	36.19703

The results of the observation of diastolic blood pressure before and after treatment in cupping therapy and noni herbal medicine were obtained from a significance level of P value = 0.089 from P value > 0.05. So in this statistical test it is concluded that Ho is accepted and H1 is rejected. So the results of this statistical test concluded that there was no significant (significant) difference in effectiveness between wet cupping therapy and the administration of herbal medicine in the Work Area of the West Singkawang Health Center, Singkawang City.

IV. DISCUSSION

The Effectiveness of Cupping Therapy and Noni Herbal Medicine on Blood Pressure in the Work Area of the West Singkawang Health Center

The results of the comparison of Systolic blood pressure observation data before and after in the intervention / experimental group explained that all respondents (100%) namely 9 people experienced changes, changes with an average decrease in systolic blood pressure of 15 mmHg as many as 4 people (44%). While the diastolic blood pressure explained that all respondents (100%) namely 9 people experienced a change, changes with a decrease in diastolic blood pressure an average of 10 mmHg as many as 5 people (56%). In the control group blood pressure before and after therapy explained that most of the 8 respondents (88%) experienced changes. But there was 1 respondent who did not experience a decrease in blood pressure even though he had been treated with cupping. The results of observations of systolic blood pressure measurements before and after treatment in cupping therapy and noni herbal medicine were obtained from a significance level of P value = 0.087 from P Value > 0.05. While the results of observations of diastolic blood pressure before and after treatment in cupping therapy and noni herbal medicine were obtained from a significance level of P value = 0.089 from P value > 0.05. So in this statistical test it was concluded that Ho was accepted and H1 was rejected. So the results of this statistical test concluded that there was no significant (significant) difference in

effectiveness between wet cupping therapy and noni herbal medicine. This can be influenced because the sample taken is too small so that the results of the statistical test are not significant. But for its clinical results cupping therapy is proven to lower blood pressure.

According to [Yasin \(2005\)](#) in patients with hypertension, the type of cupping therapy used is wet cupping because it is more effective than dry cupping where in wet cupping there is an outflow of blood volume and capillary and arteriolar vasodilation which affects the decrease in blood pressure. If you do cupping at one point, then the skin, subcutaneous tissue, fascia and muscles will be damaged from mast cells and others. As a result of this damage, several substances such as serotonin, histamine, bradykinin, slow reacting substance (SRS) will be released, as well as other unknown substances. These substances cause capillary and arteriolar dilatation and flare reactions in the cupped area. Capillary dilatation can also occur in places far from the place of cupping. This causes an improvement in the microcirculation of blood vessels. As a result, there is a relaxing effect of stiff muscles and due to general vasodilation, it will affect blood pressure in a stable manner. The release of corticotrophin releasing factor (CRF), as well as other releasing factors by the adenohypophysis. CRF will then cause the formation of ACTH, corticotrophin, and corticosteroids. This corticosteroid has the effect of curing inflammation and stabilizing cell permeability. In patients with hypertension, wet cupping therapy is more effective than dry cupping, where in wet cupping there is an outflow of blood volume and capillary and arteriolar vasodilation which affects the decrease in blood pressure.

Along with current technological advances, many treatment methods are developing in the world. Many non-pharmacological treatments have been found to help lower blood pressure in cases of hypertension sufferers, one of which is acupuncture, cupping, traditional plants, acupressure, reflexology, hypnotherapy, and others. People are now starting to turn to non-pharmacological treatment, because they know the side effects of using pharmacology that can damage the liver and kidneys if used for a long time. Non-pharmacological treatment is the development of cupping therapy which is often used by people with hypertension to lower blood pressure ([Astuti and Syarifah, 2018](#)). Non-pharmacological treatment given to hypertension patients is not only given cupping therapy, but it can also be done by consuming noni herbal medicine (*Morinda Citrifolia L*) which is known to have many benefits contained in the noni fruit for human health. The effects of noni fruit (*Morinda Citrifolia L*) include antithrombolytic, antioxidant, analgesic, anti-inflammatory, and xanthine oxidase inhibitor activity. Noni can also lower blood pressure and vasodilation of blood vessels ([Sari, 2015](#)).

Changes in blood pressure after the administration of cupping therapy in this study may be caused by a decrease in the volume of blood released by the patient, resulting in vasodilation of capillary blood vessels which causes changes in blood pressure. So with cupping therapy it will automatically slowly but surely decrease blood pressure, of course accompanied by a healthy lifestyle and maintain food patterns and intake such as avoiding foods with high salt and cholesterol content, and doing sports. Controlled blood pressure also cannot be separated from these independent efforts. There were 2 respondents who did not experience a decrease in blood pressure, usually due to the return of the patient's lifestyle to its original state before being treated, whether it was an unhealthy lifestyle, consumption patterns or other things such as stress.

V. CONCLUSION

Systolic blood pressure before and after treatment in cupping therapy and noni herbal medicine was obtained from a significance level of $P \text{ value} = 0.087$ from $P \text{ Value} > 0.05$. While the results of observations of diastolic blood pressure before and after treatment in cupping therapy and noni herbal medicine were obtained from a significance level of $P \text{ value} = 0.089$ from $P \text{ value} > 0.05$. So in this statistical test it is concluded that H_0 is accepted and H_1 is rejected. So the results of this statistical test concluded that there was no significant (significant) difference in effectiveness between wet cupping therapy and the administration of herbal medicine.

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