

**THE EFFECT OF CELERY LEAF DECOCTION ON BLOOD PRESSURE
REDUCTION IN HYPERTENSION PATIENTS IN THE BANE
PEMATANGSIANTAR UPT HEALTH CENTER WORK AREA IN 2021**

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Abstract

Hypertension or often called high blood pressure is a disease of the heart or blood vessels characterized by increased blood pressure. This type of research uses a Quasy Experiment Design with a one group pretest-posttest approach. The population in this study were all patients with hypertension at the UPT Puskesmas Bane. The sample in this study was 30 patients with hypertension using total sampling technique. Data was collected by measuring blood pressure before and after intervention with a sphymomanometer. The statistical test used was the T test, for the results of the study showed changes in blood pressure with a significant value = 0.000 <0.05, then there was an effect of boiled celery leaves on reducing blood pressure in patients with hypertension at UPT Puskesmas Bane Pematangsiantar. Based on the results of the study, it was found that there was a change in blood pressure in patients with hypertension after being influenced by giving boiled celery leaves for approximately 14 days so that giving celery leaf decoction was effectively used as non-pharmacological therapy for patients with hypertension.

Keywords: *Hypertension, Celery Leaf.*

1. INTRODUCTION

High blood pressure is often associated with increased vascularity and mortality. A recent meta-analysis of risk prediction models for hypertension found that age, gender, body mass index, baseline blood pressure, and smoking were the most common indicators of high blood pressure. Currently, hypertension is still a very dangerous cause of death because it is a chronic, asymptomatic disorder that secretly damages blood vessels, heart, brain, and kidneys if not detected and treated (Moghadam, 2013).

Hypertension is a health problem that is quite dangerous throughout the world because hypertension is a major risk factor that leads to cardiovascular diseases such as heart attack, heart failure, stroke and kidney disease. Hypertension or high blood pressure is a state of increased systolic and diastolic blood pressure above the normal limit of more than 140 mmHg and diastolic blood pressure of more than 90 mmHg (Ferri, 2017).

The prevalence of hypertension in the province of North Sumatra reaches 6.7% of the total population of North Sumatra. Based on data from the Research and Development Agency for the Ministry of Health, the population of North Sumatra who suffers from hypertension reaches 12.42 million people spread over several districts (Kemenkes, 2013).

In general, the incidence of hypertension occurs in the elderly population, but it is possible that adolescents to adults can also be affected. the hypertension. Adolescents and young adults who are in the age range of 15-25 years have a hypertension prevalence rate of 1 in 10 people. In a study conducted by Kini (2016), the prevalence of pre-hypertension and hypertension in young adults (aged 20-30 years) was 45.2%. Hypertension has now become a degenerative disease that is passed down to family members who have a history of hypertension (Kemenkes RI, 2016).

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2. IMPLEMENTATION METHOD

This research is a quantitative research with a quasi-experimental research method using the One Group Pre post text research design, namely through intervention or action on a group of objects. The subject group was observed before the intervention, then observed again after the intervention (Nursalam, 2017). Where the data collection for the dependent variable and the independent variable was carried out by observing blood pressure before being given celery leaf decoction and then being observed again after being given celery leaf decoction.

3. RESULTS AND DISCUSSION

3.1 Results

This study discusses the effect of boiled celery leaves on reducing blood pressure in patients with hypertension at the Bane Pematangsiantar Public Health Center in 2021. This research was conducted from September to October at the Bane Pematangsiantar Health Center. The data is processed and presented in the form of a distribution table.

1. Analysis Results Based on Blood Pressure After Giving Celery Leaf Decoction at Bane Health Center in 2021

No	Variabl e	N	Mini mum	Maximum	Mea n	Std. Deviation
1.	Systole after	30	120	160	142. 33	11,351
2.	Diastole after	30	80	100	88.6 7	6,288

Table 1 shows that both systolic and systolic blood pressure. diastole decreased significantly after being given celery boiled water for 14 consecutive days. The average decrease in systolic pressure was 142.33 mmHg and Diastolic pressure was 88.67 mmHg. The estimated results of the study interval were 95% systolic 11,351 mmHg and diastole after 6.288 mmHg.

2. Results of Differences in Average Systolic and Diastolic Blood Pressure in Respondents before and after being given an intervention at the Bane Health Center in 2021

Variable	N	mean	SD	SE	95% CI	T	df	Sig
Systolic BP before and after intervention	30	25.667	10,063	1,837	29,424	13,970	29	,000
TD diastole before and after	30	9,333	5, 833	1.065	11,511	8,764	29	,000

Table 2 shows the table above the average (mean) decrease in systolic blood pressure of 25.667 mmHg and diastolic of 9.333 mmHg, the results of the 95% study interval estimation for systolic blood pressure 29.424 mmHg and diastolic blood pressure of 11.511 mmHg so it can be concluded that there is an average difference (Mean) systolic and diastolic blood pressure before and after being given celery stew. The results of statistical tests for systolic blood pressure obtained

$p = 0.000$ ($\alpha = 0.05$), and for diastolic blood pressure $p = 0.000$ which means p is smaller than α , so it can be concluded that there is an effect of celery stew on reducing blood pressure in hypertensive patients.

3. Bivariate Analysis Results

Research Hypothesis	Research result	Interpretation	Conclusion
Systolic blood pressure before and after the intervention	Sig = 000.0	Ha accepted	There is a significant effect between systolic blood pressure before and after intervention
Diastolic blood pressure before and after the intervention	Sig = 000.0	Ha accepted	There is a significant effect between diastolic blood pressure before and diastolic blood pressure after the intervention

Table 3 shows the average (Mean) decrease in systolic blood pressure of 25.667 mmHg and diastolic blood pressure of 9.333 mmHg, so it can be concluded that the difference in average (Mean) blood pressure before and after being given the celery stew intervention, where before the celery stew intervention was given have an average (Mean) systolic blood pressure of 168.00 mmHg and an average diastolic blood pressure of 98.00 mmHg, while blood pressure after being given the celery stew intervention has an average (Mean) systolic blood pressure of 142.33 mmHg while the average diastolic blood pressure was 88.67 mmHg.

3.2 Discussion

Statistical tests were carried out using a paired T – test, the value of $p = 0.000$, $\alpha = 0.05$ ($p < \alpha$), which means that there is a significant difference in the reduction of blood pressure in hypertensive patients who have been given the intervention of celery stew. This is due in theory because the vitamin C content in celery plays an important role through the cholesterol process, because in the process of cholesterol metabolism, vitamin C can increase the rate of cholesterol being excreted in the form of bile acids and regulate cholesterol metabolism.

Amino acid arginine (Apin), arginine is a non-essential amino acid which in the body will break down into aspartate and ammonia. Arginine is a diuretic so it makes the kidneys lighter and significantly lowers blood pressure. In addition, vitamin K is also contained in celery which helps the blood clotting process. Vitamin K has the potential to prevent serious disease because of its effect on reducing hardening of the arteries by factors such as fat deposits, in addition to vitamin K, potassium and magnesium, both of which also play a role in blood pressure regulation. Potassium can improve the function of blood vessel muscles, reduce the body's sensitivity to chemical signals that will increase blood pressure and act on the hormone system that regulates blood pressure.

Traditional Chinese people have long used celery to lower blood pressure, because celery also contains apigenin which is very useful for preventing constriction of blood vessels and high blood pressure (Martha, 2012). This is also supported by research by UCMC scientists on a sample which has proven that by eating four stalks of celery every day for 1 week, their blood pressure decreases from 158/96 mmHg to 118/82 mmHg (Djojoseputro, 2012 in fiqri, 2013).

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4. CONCLUSION

This research is based on the analysis carried out, conclusions are drawn, among others:

1. Based on the results of the T test at UPT Puskesmas Bane Pematangsiantar, the average difference in systolic blood pressure in hypertensive patients before being given celery stew was 168.00 mmHg while the average diastolic blood pressure was 98.00 mmHg.
2. Based on the results of the T test at the UPT Puskesmas Bane Pematangsiantar, the average systolic blood pressure in patients with hypertension after being given celery stew was 142.33 mmHg while the average diastolic pressure was 88.67 mmHg.
3. There is a difference in the average value of blood pressure before and after administration of boiled celery to reduce systolic blood pressure by 25.667 mmHg and diastolic by 9.333 mmHg.
4. Based on the results of statistical tests at the UPT Puskesmas Bane Pematangsiantar obtained p value = 0.000, = 0.05 ($p <$), it can be concluded that celery stew has an effect on reducing blood pressure in hypertensive patients.

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