



THE EFFECT OF ADMINISTERING A COMBINATION OF BAY LEAF BOILED WATER AND HONEY ON DECREASING MEAN ARTERIAL PRESSURE (MAP) IN PRELAINES WITH HYPERTENSION

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ABSTRACT

Hypertension is often referred to as a "silent killer" because it often arises without symptoms. Data from the World Health Organization (WHO) in 2022 that there are around 1.56 billion people around the world suffering from hypertension and it is estimated that the prevalence of hypertension will continue to increase from year to year. In Gambut District, Banjar Regency is the area with the highest incidence of hypertension from year to year. There are 2 ways of hypertension management, namely pharmacological management and non-pharmacological management. One example of non-pharmacological management is by giving a combination of bay leaf decoction water and honey. Objective to determine the effect of a combination of bay leaf and honey boiled water on the reduction of Mean Arterial Pressure (MAP) value in elderly people with hypertension in the working area of the Peat Health Center. This study used a quantitative method with a Pre-Experimental research design Two Group Pretest-Posttest Design. The number of samples was 30 respondents using the purposive sampling technique, which was tested by the Wilcoxon statistical test. The results of statistical analysis showed that there was a significant difference in MAP values between before and after the intervention of a combination of bay leaf and honey boiled water. There was an effect of giving a combination of bay leaf decoction and honey on MAP value.

Keywords: hypertension; non-pharmacological; therapy pre-geriatric

How to cite (in APA style)

Rapika, N., Tasalim, R., Mahdiyah, D., & Redjeki, D. S. S. (2024). The Effect of Administering A Combination of Bay Leaf Boiled Water and Honey on Decreasing Mean Arterial Pressure (MAP) in Prelaines with Hypertension. *Indonesian Journal of Global Health Research*, 6(S4), 261-268. <https://doi.org/10.37287/ijghr.v6iS4.4241>.

INTRODUCTION

Hypertension is also called a circulatory system disorder, a disease in which a person's blood pressure exceeds normal limits, which is characterized by systolic pressure >140 mmHg and diastolic pressure >90 mmHg (Iqbal & Jamal, 2023). Hypertension sufferers usually find out that they have hypertension after complications occur (Wijayanti et al., 2023). There are several symptoms caused by hypertension, namely dizziness, heart palpitations marked by difficulty breathing after doing activities or lifting heavy loads, getting tired easily, disruption of the hearing system such as ringing in the ears and even signs of symptoms such as irritability (Berek & Fouk, 2020).

Several factors that can worsen high blood pressure and should be avoided for people with hypertension include obesity, smoking, an inactive lifestyle, excessive alcohol consumption, low potassium consumption, stress and sodium sensitivity (Alfaini et al., 2023). According to the World Health Organization (WHO), in 2022 there will be around 1.56 billion people

throughout the world suffering from hypertension and it is estimated that the prevalence of hypertension will continue to increase. In 2025, WHO estimates that 29% of adults will suffer from hypertension (Mills et al., 2020). The prevalence of hypertension sufferers in Indonesia, as a country with a low population density, reaches 34.1% with an estimated number of hypertension cases of 63,309,620 people (Risksedas, 2018).

Not only that, 427,218 Indonesians died from hypertension in 2018 (Alfaini et al., 2023). According to data from the Banjar Regency health service, the hypertension rate is quite high, reaching 21,486 thousand people in 2022, 15,288 thousand people in 2021, 10,910 thousand people in 2020. From this data it can be concluded that the hypertension rate in Banjar Regency increases every year. In Gambut sub-district, the number of hypertension sufferers was ranked 14th with 331 people in 2021 and increased rapidly in 2022 to 3rd place with 1308 people as the highest hypertension in Banjar Regency (RSUD Banjar Kota, 2022).

Pre-elderly is someone aged 45-60 years, one of the physical functions of pre-elderly will decrease as they get older, this decline makes pre-elderly vulnerable to degenerative diseases such as hypertension and non-generative diseases (Astarini et al., 2021). Therefore, the pre-elderly to the elderly are vulnerable groups and must receive early treatment for disease (Nursufiati et al., 2023). MAP is used to identify the rise and fall of blood pressure based on systolic and diastolic (Amdadi et al., 2020). The MAP value can be used as a stable measure of resistance to increasing systolic and diastolic values during adulthood (Putri et al., 2023).

The high rate of stroke complications in elderly people with hypertension means that MAP has a better diagnostic accuracy value than the Pulse Pressure (PP) value in ischemic stroke patients (Hamsih & Septiawan, 2021). Mean arterial pressure (MAP) is the value of the average arterial pressure during one heart beat cycle obtained from the results of systolic and diastolic blood pressure measurements (Masrurroh & Santoso, 2020). Frequently used pharmacological therapies can be classified into several categories, namely beta-blockers, diuretics and angiotensin II blockers, vasodilators, calcium antagonists, Angiotension-Converting Enzyme (ACE) inhibitors and angiotensin receptor blockers (ARBs) (Li et al., 2014). In Indonesia, people still often choose traditional medicines or herbal medicines compared to other pharmacological medicines to lower blood pressure in hypertension sufferers (Framaisella & Septiawan, 2020).

Non-pharmacological therapy such as treatment derived from herbal plants to lower blood pressure for hypertension sufferers, such as boiled bay leaf water (Darni, 2022). Apart from bay leaves, a non-pharmacological therapy that can be trusted to lower blood pressure is honey. Honey has antimicrobial and antiviral properties, increases the immune system response, regulates glycemia without side effects and provides a hypotensive effect that can lower blood pressure (Harsono, 2020). Looking at the existing background, this research aims to analyze the effect of administering a combination of sea leaf water and honey on the reduction of mean arterial pressure (MAP) in patients with hypertension in the working area of the Gambut Public Health Center.

METHOD

This research uses quantitative methods with a Pre-Experimental Two Group Pretest-Posttest Design research design. This research was conducted in the working area of the Peat Health Center. The population used was 2,454 people with hypertension in the working area of the Gambut Health Center. The number of samples used in this research was 30 respondents with this sampling in accordance with the inclusion and exclusion criteria determined by the

researcher using purposive sampling techniques. The research instrument used in this study was an observation sheet for measuring blood pressure using a sphygmomanometer, stethoscope and measuring cup. The effect of giving a combination of bay leaf boiled water and honey can be seen in the Wilcoxon statistical test value.

RESULTS

Table 1.
Based on Demographic Data of Combination Group Respondents

Respondent Demographic Data	Category	f	%
Gender	Female	13	86,7
	Malw	2	13,3
Education Level	Elementary school	7	46,7
	Junior High School	5	33,3
	Senior high school	2	13,3
	S1	1	6,7
Occupation	House Wife	13	86,7
	Farmer	1	6,7
	Self Employed	1	6,7
Disease History Family	Yes	11	73,3
	No	4	26,7

Table 2.
Based on Demographic Data of Respondents in the Bay Leaf Group

Respondent Demographic Data	Category	f	%
Gender	Female	14	93,3
	Malw	1	6,7
Education Level	Elementary school	4	26,7
	Junior High School	11	73,3
	Senior high school	0	0
	S1	0	0
Occupation	House Wife	12	80,0
	Farmer	2	13,3
	Self Employed	1	6,7
Disease History Family	Yes	9	60,0
	No	6	40,0

Table 3.
Wilcoxon test results (Kom)

MAP	n	Mean	Sig. (2-tailed)
Pre-Test			
Post-Test	15	15,4333	0,001

Tabel 4.
Wilcoxon test results (DS)

MAP	n	Mean	Sig. (2-tailed)
Pre-Test			
Post-Test	15	9,3200	0,001

Table 5.
Independent T-test results for 2 groups

Results MAP	n	Mean	Sig. (2-tailed)
Post Kom	15	99,027	0,019
Post DS	15	107,087	

DISCUSSION

Based on tables 1 and 2, it shows that there are factors that can cause hypertension including gender, the largest gender of hypertension sufferers in the Gambut Community Health Center working area is women, totaling 13 people in the combination group, 14 people in the bay leaf group, and 13 people in the honey group with a percentage of 86.7% in the combination group and 93.3% in the bay leaf group. This is in line with research theory conducted by (Maringga & Sari, 2020). Which states that women are more susceptible to hypertension due to hormonal disorders in women which can cause an increase in blood pressure (Tasić et al., 2022). Jee & Sawal, (2024) stated that hormonal changes that generally occur in women which can disrupt the body's health system in women are decreased production of the hormone estrogen which can trigger an increase in blood pressure

Next there is the level of education, the highest level of education among hypertension sufferers in the working area of the Gambut Community Health Center is elementary school with 7 people in the combination group and junior high school with 11 people in the bay leaf group with a percentage of 46.7% in the combination group and 73.3% in the leaf group. regards. This is confirmed by research conducted by Rahmadhani et al., (2024) based on the results of the chi square test analysis, the p value was $0.000 < 0.05$, so it can be concluded that there is a significant influence between the level of education and adherence to taking medication in hypertension sufferers. The level of education can influence the level of people's knowledge about hypertension. This can cause people to be unable to control their blood pressure, as well as decreasing their knowledge about drug therapy that will cure or worsen their health level.

The next factor is employment, the highest number of jobs for hypertension sufferers in the Gambut Community Health Center working area are housewives with 13 people in the combination group and 12 people in the bay leaf group with a percentage of 86.7% in the combination group and 80.0% in the bay leaf group. As the opinion expressed by Wahyuni et al., (2024) states that work that causes a person to experience severe stress will have an impact on a disorganized lifestyle which can cause physical decline, thereby triggering various diseases, especially hypertension.

Apart from that, family history of disease also influences hypertension. The results of family history of disease in families of hypertension sufferers in the working area of the Gambut Community Health Center were that 11 people in the combination group had a family history of disease (hypertension) and 9 people in the bay leaf group with a percentage of 73. 3% in the combination group and 60.0% in the bay leaf group. This is in accordance with research conducted by Rachmawati et al., (2021) which states that families with a history of hypertension have 3.6x the chance compared to people who do not have a family history of hypertension.

Based on table 3. Based on the results of non-parametric statistical tests using the Wilcoxon test, there is a sig. (2-Taled) $0.001 < 0.05$, this shows that there is an influence between before (Pre-Test) and after (Post-Test) the treatment of giving a combination of bay leaf boiled water and honey on Mean Arterial Pressure (MAP). Research conducted by Cordero et al., (2021) showed a significant reduction in Mean Arterial Pressure (MAP) values in hypertensive patients after consuming a combination of boiled bay leaves and honey, showing the effectiveness of this natural medicine in managing blood pressure. Bay leaves are rich in flavonoids which function as powerful antioxidants. This compound helps reduce inflammation and improves endothelial function in blood vessels. Healthy endothelium

increases nitric oxide production, which causes vasodilation and decreased vascular resistance, important for lowering blood pressure. Honey, on the other hand, provides additional antioxidant and anti-inflammatory benefits. Contains various enzymes, amino acids, and vitamins that support metabolism and overall health. Most importantly, honey has a low glycemic index so it is safe for hypertension sufferers to consume without increasing blood sugar levels significantly.

Based on table 4. Based on the results of non-parametric statistical tests using the Wilcoxon test, it can be concluded that the sig. (2-Tailed) $0.001 < 0.05$ which shows that there is an influence between before (Pre-Test) and after (Post-Test) the intervention in the form of boiled bay leaf water was given. This is in line with research conducted by Azim, (2022) which showed a significant reduction in systolic and diastolic blood pressure after administering this intervention. Before consuming bay leaf boiled water, the average blood pressure in the treatment group was 157.50/96.87 mmHg. After intervention, blood pressure decreased to 139.37/91.25 mmHg. This decrease shows that bay leaf boiled water has a real hypotensive effect, helping to reduce the burden on the heart and arteries of hypertensive patients.

Based on table 5, it shows that there is a significant difference in the reduction in Mean Arterial Pressure (MAP) values between the group that consumed a combination of bay leaf boiled water and honey and the group that consumed bay leaf boiled water alone after carrying out the Independent T-test. This is in line with research conducted by Murwani et al., (2023) the combination of bay leaves and honey produces a stronger therapeutic effect than using one ingredient alone. The significant reduction in Mean Arterial Pressure (MAP) after administration of this combination shows that this intervention is very effective in reducing blood pressure in hypertensive patients.

CONCLUSION

The results of the statistical analysis showed that there was a significant difference in the MAP values between before and after administering the combined intervention of bay leaf boiled water and honey. So it was concluded that there was an effect of giving a combination of bay leaf boiled water and honey on the MAP value.

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