J H S N
Journal of the Health Science and Nursing
Vol. 4, No. 1, February 2024
E-ISSN : 2961-9777

THE EFFECT OF GIVING ONION DAYAK (ELEUTHERRINE AMERICANA MERR) ON BLOOD PRESSURE CHANGES IN HYPERTENSION PATIENTS IN PATANE IV PORSEA

Rosmaulina Sirait[1], Friska Patricia Damanik[2]
[1,2] STIKES Arjuna, Jl. Arjuna No. 1 Toba Samosir, Indonesia
e-mail: sirait_rosmaulina@gmail.com

Abstract

Hypertension is one of the deadliest diseases in the world as many as 1 billion people in the world or 1 in 4 adults suffer from this disease. In fact, it is estimated that the number of people with hypertension will increase to 1.6 billion by 2025. This research was conducted in Patane IV Porsea. This study aims to determine the effect of giving Dayak onion tea on changes in blood pressure in patients with hypertension. The design of this study was quasi-experimental with a sample size of 21 using one group pre post test without control. The sampling technique is by accidental sampling. Data analysis using paired T test. The statistical test shows that the Sig value is 0.014 <0.05, then H0 is rejected and Ha is accepted.

***Keywords** : Dayak Onion Tea (Eleuthererine Americana Merr), Blood Pressure*

1. Introduction

The prevalence of hypertension according to WHO in September 2011 has reached 13% or about 7.1 million people with hypertension have died. Meanwhile, Kartikasari (2012) in his research stated that hypertension causes 8 million deaths per year worldwide and 1.5 million deaths per year in Southeast Asia. The results of the WHO meeting in Geneva in 2002 revealed that the prevalence of hypertension was 15-37% in the adult population in the world. Half of the world's population aged over 60 years suffer from hypertension (Kartikasari, 2012).

High blood pressure is often referred to as the silent killer because it is a deadly disease. Hypertension is a disease that can affect anyone, young or old, rich or poor. Hypertension is one of the deadliest diseases in the world as many as 1 billion people in the world or 1 in 4 adults suffer from this disease. In fact, it is estimated that the number of people with hypertension will increase to 1.6 billion by 2025. It was originally thought that an increase in diastolic blood pressure was a more important risk factor than an increase in systolic, but it is now known that in people aged 50 years or more systolic hypertension represents a greater risk. Treatment of hypertension aims to reduce morbidity and mortality and control blood pressure in the treatment of hypertension, there are two ways, namely non-pharmacological treatment (lifestyle changes) and pharmacological treatment using pharmacological therapy. (Ratna, 2018).

Article History: *Received :13-01-2025; Accepted : 16-02-2025*

The use of pharmacological therapy using chemical drugs often causes side effects, is expensive and lifelong use for people with hypertension. Non-pharmacological management is carried out by adjusting lifestyle and non-pharmacological therapy in patients with hypertension, including using herbal therapy which is believed to be low in side effects, easy and inexpensive, namely using Dayak onion tea (Febrina, et al, 2013).

The potential of Dayak onion tea and is quite widely known in the community as a fruit plant, flavoring and herbal. The use of Dayak onion tea has been widely practiced by the community since ancient times. So that using Dayak onions as a complementary medicine is often used for alternative medicine as a substitute for hypertension drugs which are relatively expensive and use for life (Yuliarti, 2011 in Ramadi, 2012).

Based on information obtained from puskesmas officers, there were 102 hypertension visits in 2020 and were the second most visits after ARI. Researchers conducted a preliminary study in Patane IV Porsea, it was noted that 21 people had blood pressure of 130/90 mmHg or above. Researchers conducted interviews with 21 people with hypertension, found 9 people taking chemical drugs, 4 people not taking drugs because they run out and 8 people taking nothing to treat their hypertension.

2. Methods

The type of this research is "quasy experiment one group pre post test without control.". The population in this study were all hypertensive patients in Patane IV Porsea. The sampling technique used was an accedental sampling approach. In this research design, there is only one group, namely the treatment group as well as the control group. The group received treatment with Dayak onion tea and looked at blood pressure before and after. And intervention was done in the form of inculis: suffering from hypertension. The sample size was 21 patients with hypertension. This study uses an alpha value of 0.05 or 5% and the confidence level of this study is 95% (Sugiyono, 2015).

3. Research Results and Discussion

A. Univariate Analysis

This chapter will describe the results of research on the Effect of Giving Dayak Onion Tea on Blood Pressure Changes in Hypertensive Patients, The research location was conducted in Patane IV Porsea in 2021.

Table 1. Frequency Distribution Characteristics of Respondents in Patane IV Porsea in 2021

No	Age	Frequency	Percentage (%)
1.	25 Years	0	0
2.	26-34 Years	4	19
	35 Years	17	81
Total		21	100
No	Education	Frequency	Percentage (%)
1.	Low education	8	38.1

2.	Secondary Education	11	52.4
3.	higher education	2	9.5
Total		21	100
No	Work	Frequency	Percentage (%)
1.	Work	14	66.7
2.	Does not work	7	33.3
No	Gender	Frequency	Percentage (%)
1	Woman	8	38.1
2	Man	13	61.9
Total		21	100

Based on table 1 above, it shows that of the 21 respondents it was found that the majority of mothers at the age of 35 years old as many as 17 respondents (81%), and a minority of mothers aged 26-34 as many as 4 respondents (19%), based on mother's education the majority were intermediate as many as 11 respondents (52.4%), and a minority of higher education as many as 2 respondents (9, 5%) Meanwhile, based on occupation, it was found that the majority of working mothers were 14 respondents (66.7%), and a minority of mothers who did not work were 7 respondents (33.3%) and based on gender the majority were male as many as 13 respondents (61.9%) %).

Table 2 Frequency Distribution of Respondents Based on Blood Pressure Before Giving Dayak Onion Tea

Blood pressure	Frequency	Percentage (%)
Normal	1	4.8
Prehypertension	4	19
Hypertension Grade 1	12	57.2
Hypertension Grade 2	4	19
Total	21	100

Based on table 2, it can be seen that the majority of respondents with hypertension blood pressure grade 1 were 12 respondents (57.2%), and the minority of respondents with normal blood pressure was 1 respondent (4.8%).

Table 3 Frequency Distribution of Respondents Based on Blood Pressure After Giving Dayak Onion Tea

Blood pressure	Frequency	Percentage (%)
Normal	6	28.6
Prehypertension	3	14.3
Hypertension Grade 1	10	47.6
Hypertension Grade 2	2	9.5
Total	21	100

Based on table 3, it can be seen that the majority of respondents with hypertension blood pressure grade 1 were 10 respondents (47.6%), and the minority respondents with hypertension blood pressure grade 2 were 2 respondents (9.5%).

Table 4 Data Normality Test (Shapiro-Wilk)

Variable	Treatment Group	
	Before giving Dayak onion tea	After giving Dayak onion tea
Pressure Blood	0.000	0.000

In general, there are two methods to perform the Normality Test, namely the Kolmogrov-Smirnov test and the Shapiro-Wilk test. Because the sample used in this study amounted to 21 people (< 50 people) then the Shapiro-Wilk test was used.
Normality test decision making data

1. If the value of Sig. > 0.05 then the data is normally distributed
2. If the value of Sig. < 0.05 then the data is not normally distributed

Based on the table above shows that the results of the data normality test using the Shapiro-Wilk test with a sample of 21 respondents, where the results of the normality test of blood pressure data before giving bay leaf decoction is with a sig value of 0.061 (> 0.05) which states that the distribution of data is normal. , while the normality test of blood pressure data after giving boiled bay leaves is with a sig value of 0.068 (> 0.05) which states that the distribution of data is normally distributed.

B. Bivariate Analysis

Table 5 Blood pressure before and after giving Dayak onion tea

Blood pressure	Giving Dayak Onion Tea				Paired Test Sample T-Test
	Before		After		
	Frequency	Percentage (%)	Frequency	Percentage (%)	
Normal	1	4.8	6	28.6	0.014
Prehypertension	4	19	3	14.3	
Hypertension Grade 1	12	57.2	10	47.6	
Hypertension Grade 2	4	19	2	9.5	
Amount	21	100	21	100	

Based on the table above, it is known that the Sig value is 0.014 <0.05, then H0 is rejected and Ha is accepted. So it can be concluded that there is an average difference between blood pressure before giving Dayak onion tea and after giving Dayak onion tea,

which means that there is an effect of giving Dayak onion in lowering blood pressure in patients with hypertension.

Discussion

Based on table 1 above, it shows that of the 21 respondents it was found that the majority of mothers at the age of 35 years old as many as 17 respondents (81%), and a minority of mothers aged 26-34 as many as 4 respondents (19%), based on mother's education the majority were intermediate as many as 11 respondents (52.4%), and a minority of higher education as many as 2 respondents (9, 5%) Meanwhile, based on occupation, it was found that the majority of working mothers were 14 respondents (66.7%), and a minority of mothers who did not work were 7 respondents (33.3%) and based on gender the majority were male as many as 13 respondents (61.9%) %).

In addition to gender, hypertension is more prone to occur in old age. Increasing age can increase the risk of contracting hypertension, although hypertension can occur at any age but most often occurs at the age of 45 years and over.

Where age is closely related to the occurrence of hypertension where at the age of 50-60 years the risk of hypertension increases. This is due to thickening of the walls of the heart muscle, blood vessels and hormones. Less active activity is a trigger for an increase in blood pressure.

The results of statistical tests obtained Sig value is 0.014 <0.05, then H0 is rejected and Ha is accepted. So it can be concluded that there is an average difference between blood pressure before giving Dayak onion tea and after giving Dayak onion tea, which means that there is an effect of giving Dayak onion in lowering blood pressure in patients with hypertension.

The potential of Dayak onion tea and is quite widely known in the community as a fruit plant, flavoring and herbal. The use of Dayak onion tea has been widely practiced by the community since ancient times. So that using Dayak onions as a complementary medicine is often used for alternative medicine as a substitute for hypertension drugs which are relatively expensive and use for life (Yuliarti, 2011 in Ramadi, 2012).

Dayak onion is a typical plant of Central Kalimantan which empirically has been used by local people in the treatment of various types of diseases such as breast cancer, lowering high blood pressure, lowering cholesterol, diabetes, ulcer medicine, immunostimulant, anti-inflammatory, and anti-bleeding agent. The results showed that the Dayak onion bulbs contained naphtoquinolone compounds and their derivatives such as elecanasin, eleutherin, eleutherol, eleuthernon. Naphtoquinolones are known as antimicrobial, antifungal, antiviral and antiparasitic. In addition, naphtoquinolones have bioactivity as anticancer and antioxidants which are usually found in vacuoles in the form of glycosides. Dayak onion bulbs contain anthraquinone derivative compounds that have laxative properties, namely eleutherin compounds,

Various studies have shown that E. palmifolia tubers contain naphtoquinonens compounds and their derivatives such as eleuthernone, eleutherine and eleutherol. (Alia mustika, 2011) Naphtoquinonens compounds have effects that are believed to be antibacterial, antifungal, and antiviral and antiparasitic. There are also glycosides that can

act as anticancer Compounds derived from anthraquinones also play an important role in laxatives, namely isoeleutherine compounds.

The results of this study are in line with research conducted by Margowati (2012) entitled the effectiveness of using Dayak onion tea in reducing blood pressure where the p value <0.05 which means that herbal therapy using Dayak onion tea can reduce blood pressure in the elderly with hypertension. In addition, there was a decrease in systolic and diastolic from an average systolic of 160.50 to 140.50, while the diastolic of an average diastolic of 100.50 became 95.00. The results of this study are also in line with research by Ismiyanti (2013) which stated that Dayak onion tea has antioxidant activity and helps in preventing or slowing the progress of various oxidative stress-related diseases. Consumption of Dayak onion tea extract is known to reduce blood pressure in patients with hypertension,

4. Conclusions

Based on the results of the data analysis and discussion that has been attached, the following conclusions can be drawn:

a. Of the 21 respondents, it was found that the majority of mothers aged 35 years old as many as 17 respondents (81%), based on the mother's education the majority were intermediate as many as 11 respondents (52.4%), based on work it was found that the majority of mothers worked as many as 14 respondents (66.7%), and based on gender the majority were male as many as 13 respondents (61.9%).
b. The majority of respondents with grade 1 hypertension blood pressure were 12 respondents (57.2%)
c. The majority of respondents with grade 1 hypertension blood pressure were 10 respondents (47.6%)
d. The statistical test shows that the Sig value is 0.014 <0.05, then Ho is rejected and Ha is accepted. which means that there is an effect of giving Dayak onions in lowering blood pressure in hypertensive patients.

References

(Apriyanti, 2011 Study of Chemical Content of Methanol Extract of Tiwai Onion Bulbs (Eleutherine palmifolia, (L) Merr). [Thesis]. Bandung Institute of Technology. Bandung1).

Dewi Pudiastuti, Ratna, 2018, Stoke Trigger Disease: Nuha Medika: Yogyakarta

MOH (2013). Basic Health Research 2013. Jakarta: Ministry of Health RI

Febrina, A,. Astawan, M., Wresdiyanti, T., & Dewi Yuliana, N (2013). Antioxidant Capacity and Alpha Glucosidase Inhibitor of Dayak Onion Tuber Extract. Journal of Food Technology and Industry, 24(2), 161-167.

Insanu M, Kusmardiyani S, Hartati R (2014). Recent Studies on Phytochemicals and Pharmacological Effects of Elethutherine americana Merr. Procedia Chemistry

Nirmala, 2010 Cultivation of Tiwai Onion/Sabrang Onion (Eleutherine americana (L) Merr) Erlangga. Jakarta

Ramadi (2012). Fifteen Most Powerful Herbs. Yogyakarta: Aulia Press

Smeltzer & Bare (2012). Medical surgical nursing. Issue 8 Vol. 1. Interpreting; Great Waluyo. Jakarta. EGC

Susilo & Wulandari. 2011. The Right Way to Overcome Hypertension. Jakarta: Andi . Publisher

Sutanto. 2016. Modern Diseases of Hypertension, Stroke, Heart, Cholesterol and Diabetes. Yogyakarta. ANDI Publisher.

Untari, Ida. 2019. Textbook of Gerontic Nursing. Jakarta. EGC Medicine Book.

Wiwit Sukmawati. 2018. The Relationship Between the Use of Injectable Contraceptive Devices and Birth Control Pills on the Incidence of Hypertension in Women of Childbearing Age in the Work Area of the Ciputat Health Center 2019. Xv + 91 pages, 9 tables, 3 charts, 5 attachments. Faculty of Health Sciences, Syarif Hidayatullah University, Jakarta.