

The Effect of Carrot Juice (*Daucus Carota L.*) on Reducing Hypertension on Hypertension Objects in the Working Area of Lubuk Buaya Field 2021

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ABSTRACT

The impact that occurs if high blood is not overcome it will occur persistently for a long time and cause disruptions to blood circulation in the heart, stroke, kidney disease, heart and eyes. High blood pressure can interfere with the inside of the arteries and allow for a buildup of blood clots (Susilo and Wulandari, 2011). The study's general goal was to find out the effect on jus wortel (*Daucus carota L.*) on high blood pressure reduction in hypertensive objects. The type of research used is a Quasy Experiment with a One Group Pretest and Posttest Design approach which will be held on 5-11 June 2021. The population in this study were all hypertension patients in the working area Lubuk Buaya Padang. The data collection technique used is purposive sampling total responden of 16 people's . The data were processed computerized with the analysis of each of the two variables using the Annova t-test. This research has gained an external blood pressure hypertensive object beginning given carrot juice (*Daucus carota L.*) was 150.40/95 mmHg and decreased after being given carrot juice, namely 141/90 mmHg. There was an effect on carrot juice (*Daucus carota L.*) on reducing hypertension, it was found that p value = 0.000 (P <0.05). According to the research known an effect on carrot starch juice (*Daucus carota L.*) on the decrease in high blood of respondents. Researchers recommend that public health services in the field of public health promotion and nurses to be able to apply carrot therapy in anticipation of first aid in the family of hypertensive objects and as self-care measures that can be used to reduce high blood disease.

Keywords: *Effects, Carrot Juice (Daucus carota L.), Reduction of Hypertension.*

1. INTRODUCTION

The Eight Joint National Committee (JNC 8) reports that 77.9 million American adults and about 970 million worldwide have high blood pressure. The Indonesian Society of Hypertension (inaSH) reports that hypertension has become a global disease burden and the prevalence of hypertension in Indonesia reaches 31.7% of the total adult population[15]. The highest hypertension rate is in Kalimantan. South, which is 44.1% and the lowest is in Papua, which is 4.7%. [14]

The use of non-pharmacological drugs in the long term, causing side effects due to prolonged use or in combination with the use of other drugs, is quite dangerous for the patient's health and can threaten the patient's life. The use of modern hypertension drugs can cause side effects, therefore, natural fruits and vegetables can be an option, one

of which is carrots (*Daucus carota L.*). Some fruits and vegetables in Indonesia that can be used as an alternative treatment for hypertension are carrots, cucumbers, garlic, celery, sweet star fruit, rosella [17].

According to Widhardto [16], non-pharmacological treatment in addition to being an alternative treatment can also be used as complementary therapy, namely a complement to accelerate healing, juice therapy, both fruit and plants, has long been used to help cure various diseases, especially hypertension. According to Basith[14], one of the non-pharmacological treatments that can be used to treat hypertension is carrots. Carrot (*Daucus carota L.*) is a mountain vegetable plant that is grown throughout the year. Carrots are known as root vegetables that are easily obtained in the market and carrots also do not know

the harvest season so carrots can be used to lower blood pressure[16].

Carrot (*Daucus carota L.*) is a type of tuber vegetable that is usually yellow-red or yellow-orange in color with a wood-like texture (Malasari 2005). One of the content of carrots that is good for lowering or controlling blood pressure is potassium. Potassium acts as a strong diuretic so that it helps maintain blood pressure balance[8].

The highest mineral content in carrots is potassium which functions to maintain water balance in the body and helps lower blood pressure. Potassium functions as a strong diuretic so that in addition to helping lower blood pressure, it can also launch urine output, help dissolve stones in the urinary tract, bladder and kidneys. Potassium can also neutralize acids in the blood[22].

From Fitri's research[6] which examined the "Effectiveness of Carrot Juica Consumption. The results showed that carrot juice was effective in reducing systolic and diastolic blood pressure in hypertensive patients in Gendong Sari Wiji Rejo Pandak Hamlet, Bantul Yogyakarta.

Hypertension has a fairly high mortality rate that can also affect a person's quality of life and productivity and 90% is essential hypertension whose cause is unknown. According to WHO (World Health Organization) In 2014 as many as 982 million people or 26.4% of the world's population had hypertension, this figure is likely to increase to 29.2% in 2025.

Hypertension in Indonesia is included in the top ten diseases with a fairly high mortality rate. In 2013 the number of cases of hypertension was recorded at 19,874 cases and the number of deaths due to hypertension was recorded at 955 cases (4.81%) and increased in 2014 to 22,216 cases and the number of deaths due to hypertension was 1,122 cases (5.05%)[18].

West Sumatra Province in 2013 and 2014 Hypertension ranked second out of the 10 most diseases, namely 12.63% and 12.16%, while in 2015 hypertension was ranked third in the 10 most diseases, namely 13.89% cases after respiratory infections. upper and Gastritis (West Sumatra Provincial Health Office, 2016). As for the data on the ten most diseases in Padang City in 2020, Hypertension ranks 3rd, namely 5.128 (11.7%) after diseases in the Muscular System and Connective Tissue with a total incidence of 5.576, (12.9%) Gastritis with a total incidence of 8.121, ARI disease with a total incidence of 16,275 (37.4%).

2. RESEARCH METHODS

The form of this research is a quasi-experimental method (Quasy Experimental) with a One Group Pre-test-Pos test design, namely by measuring blood pressure before (Pre-test) and after (Pos-test) the treatment of giving carrot juice. The research has been carried out in 2021. The research carried out from 5 – 11 June 2021. The population in this study were all hypertensive patients in the Lubuk Buaya Health Center Work Area with a total of 261 populations. over 45 years of age. The sample who became 16 respondents. This type of sample is purposive Random sampling where a certain consideration is made by the researcher himself.

a. Inclusion Criteria

1. Willing to be a research respondent
2. Respondents Age > 45 years
3. Respondents blood pressure > 140/90 mmHg.

b. Exclusion

- 1) Respondents refuse to be a sample
- 2) Hypertensive respondents with other chronic diseases
- 3) Respondent is allergic to all juices

How to make and drinking rules:

- a. Wash the carrots thoroughly, then peel and cut into pieces
- b. Put carrots added water into the juicer machine
- c. Mash the ingredients until they become smooth
- d. Pour into a glass and weigh as much as 200 ml.
- e. Carrot juice taken every morning 1 time a day as much as 200 ml after breakfast and given for 7 days.

3. RESULT

Table 1. Average Initial Blood Pressure Before Giving Carrot Juice (*Daucus carota L.*) to Hypertension objects in the Working Area Lubuk Buaya in 2021

Variable	Mean	SD	Min-Max	n
sistolic	169,38	11,236	150-180	16
diastolic	95	5,164	90-100	

According to the average blood pressure figure in the object of hypertension before being given Carrot Juice (*Daucus carota L.*) is 169.38/95 mmHg, the standard deviation value is 11,236 mmHg. The lowest blood pressure is 150/90 mmHg and the highest is 180/100 mmHg.

Table 2. Final Average Blood Pressure After Giving Carrot Juice (*Daucus carota L.*) to Hypertension Patients in the Lubuk Buaya Health Center Working Area in 2021

Variable	Mean	SD	Min-Max	n
sistolic	150	11,111	140-170	16
diastolic	90	6,303	70-100	

Based on the table above has an average difference in systolic blood pressure with hypertension is 18,375 mmHg the standard deviation value of 5,737 mmHg. The results of the statistical test obtained a value of 0.000 which means an effect between the systolic blood pressure of people with hypertension before and after being given carrot juice (*Daucus carota L.*). The results of the statistical test obtained a value of 0.006 which means there is an effect between the diastolic blood pressure of people with hypertension before and after drinking carrot juice (*Daucus carota L.*) in the Working Area of the Lubuk Buaya in 2021.

Table 3. Effectiveness of Carrot Juice on decrease in Hypertension objects 2021

Variabel	Mean	Std. Deviation	Inter val	t	df	P valu
Sistolic	18,375	5,737	22,43	13,50	15	0,000
Diastolic	4	6,325	8,37	3,16	15	0,006

The table is known to be above average on hypertensive objects after being given Carrot Juice (*Daucus carota L.*) which is 150/90 mmHg the standard deviation value is 12,111 mmHg. The lowest blood pressure value is 140/70 mmHg and the highest is 170/100 mmHg in the Working Area Lubuk Buaya Health in 2021.

4. DISCUSSION

There's this exterior, it was the average in hypertensive respondents not shared squeeze of carrot water (*Daucus carota L.*) was 169.38 mmHg with a Ordinances of 11,236 mmHg. The lowest blood pressure is 150/90 mmHg and the highest is 180/100 mmHg Puskesmas Lubuk Buaya 2021. This study is reinforced by research conducted by Haris [5], at PSTW Bantul Yogyakarta with the design of quasy experiment research, said that consuming carrot juice for five consecutive days to 13 respondents had an effect on lowering the stage of hypertension. Assessment results found blood pressure carrot juice 150.77/92.30 mmHg.

Average Blood Pressure After Administration of Carrot (*Daucus carota L.*) Juice in Hypertensive Patients. The research that has been done, it is found that the average blood pressure in patients with hypertension after being given Carrot Juice (*Daucus carota L.*) is 150/90 mmHg with a standard deviation of 11.111 mmHg. The lowest blood pressure is 140/70 mmHg and the highest is 190/100 mmHg 2021. This study has similarities with the same study carried out Haris (2012), at PSTW Bantul Yogyakarta with a quasi-experimental research design, said that consuming carrot juice for five days in a row to 13 respondents has an effect on reducing the stage of hypertension. Conclusions on the research found that blood pressure given carrot juice 150.77/92.30 mmHg and decreased after being given carrot juice, namely 141.15/87.30 mmHg.

The Effectiveness of Giving Carrot Juice (*Daucus carota L.*) on the object of hypertension. Evaluation of experiments that have been conducted, it was found that the average difference in systolic blood pressure of patients with hypertension was 18.375 mmHg with a standard deviation of 5.737 mmHg. T-test test with Anova obtained p value of 0.000 then the presence of systolic effect of patients with hypertension after being given carrot juice (*Daucus carota L.*). While the average diastolic blood pressure of patients with hypertension is 4 mmHg with a standard deviation of 6.325 mmHg. The statistical test results obtained a p value of 0.006, which means that there is an influence between diastolic blood pressure in patients with hypertension after being given carrot juice (*Daucus carota L.*) in 2021.

The results of the above research sharpened the same research Fitri [6] who examined the "Effectiveness of Carrot Juica Consumption on Lowering Blood Pressure in Hypertensive Patients in Gendong Sari Wiji Rejo Hamlet, Pandak Bantul, Yogyakarta". The results showed that carrot juice was effective in reducing systolic and diastolic blood pressure in patients with hypertension (p = 0.038).

According to Basith [14], one of the non-pharmacological treatments that can be used to treat hypertension is carrots. Carrot (*Daucus carota L.*) is a mountain vegetable plant that is grown throughout the year. Carrots are known as root vegetables that are easily obtained in the market and carrots also do not know the harvest season so carrots can be used to lower blood pressure.

5. CONCLUSIONS AND SUGGESTIONS

There is an effectiveness between blood pressure of hypertensive patients before and after being given carrot juice (*Daucus carota* L.) in Lubuk Buaya the working area, where Systolic has a value of $p = 0.000$ and diastolic with a value of $p = < 0.006$.

6. SUGGESTION

According to the results of the research can be known there is an effect on carrot starch juice (*Daucus carota* L.) on the decrease in high blood of respondents. Researchers recommend that public health services in the field of public health promotion and nurses to be able to apply carrot therapy in anticipation of first aid in the family of hypertensive objects and as self-care measures that can be used to reduce high blood disease.

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