

## The Effect of Giving Cucumber Juice on Reducing Blood Pressure in Hypertension Patients at Imelda Pekerja Indonesia General Hospital, 2023

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### ABSTRACT

*Hypertension or high blood pressure is the main cause of heart system disorders, because known as the number one killer in the world, called the silent killer silently) because people with high blood pressure often do not show symptoms. The aim of this research was to determine the effect of giving cucumber juice on lowering blood pressure hypertension sufferers. This type of research is Quantitative research uses a quasi-experimental design with this type of design One group pre-post test was used. The study population was 33 hypertensive patients. The sample research formula uses the Slovin formula so that the research sample is 30 0 people. By giving cucumber juice once a day in the morning before breakfast 15-30 minutes 250 ml for 7 consecutive days. And analyzed univariately and bivariately using a paired sample t-test (between before and after intervention). Research result showed that blood pressure values were obtained after the intervention was carried out decrease and seen from the p value of  $0.000 < 0.05$  it can be concluded that there is an influence from giving cucumber juice to reducing blood pressure in hypertensive patients.*

*Keywords: Hypertension, Blood Pressure, Cucumber Juice.*

### 1. INTRODUCTION

Hypertension or high blood pressure is the main cause of cardiovascular disorders, because it is known as the number one killer in the world, it is called the silent killer because people with hypertension often do not show symptoms. With increased blood pressure, the heart will work harder and Enlarges the heart muscle so that it can cause heart failure, congestive heart failure, stroke, coronary heart disease and kidney disease which have high morbidity and mortality rates, (Ministry of Health of the Republic of Indonesia, 2018) .

Based on data (WHO, 2015), hypertension ranks number one as a disease that can cause the death of around 1.13 billion people in the world. In 2020, there was an increase in cases of around 1.56 billion people in the world suffering from hypertension. The prevalence of hypertension in Indonesia ranks 5th as a disease that can cause death (Lubis et al., 2019) . Based on sample registration survey data, the target of hypertension is not only the elderly, but according to data from the American Heart Association (AHA), the population aged 20 years and over with a history of hypertension has reached 74.5 million.

High rates of hypertension can be influenced by smoking habits, lack of activity, unhealthy eating patterns, obesity and stress. A diagnosis of hypertension can be made if the systolic blood pressure is above 140 mmHg and diastolic above 90 mmHg. A risk factor that can be managed is controlling food intake by modifying the intake of foods containing potassium and magnesium to become a complementary therapy for lowering blood pressure, both systolic and diastolic (P2PTM Ministry of Health, 2019).

The role of a nurse is to avoid complications due to hypertension non-pharmacologically. The actions we provide are providing knowledge information to patients or the patient's family, one of which is by giving cucumber juice which has health benefits, namely adopting a healthy low-salt diet, exercising regularly, stopping smoking and always controlling blood pressure. The basic treatment for hypertension is non-pharmacological therapy, and includes weight loss, limited sodium intake, physical activity and cessation of smoking and alcohol consumption. Resources that can be used to control pressure include fruit, vegetables that are high in fiber, rich in vitamins and minerals, for example cucumbers.

The benefits of cucumbers are very good for consumption to lower blood pressure in hypertension sufferers because cucumbers contain potassium, calcium, magnesium and phosphorus which are effective in treating hypertension. A food is said to be healthy food for the blood vessels and heart, where the food contains potassium which is the main intracellular electrolyte, in reality, 98% of the body's potassium is inside the cells, the remaining 2% is outside the cells, what is important is this 2% for neuromuscular. Potassium affects the activity of both skeletal muscle and heart muscle. Consuming cucumbers can lower blood pressure and is very good for people with hypertension. Cucumbers also have diuretic properties because of their high water content, which helps lower blood pressure and can increase urination (BAK).

## **2. METHOD**

The research method uses a quasi-experimental design, a type of design that uses a one group pre-post test. The data collection technique used was an observation sheet using a digital sphygmomanometer and cucumber juice. The activity carried out was giving 250 ml of cucumber juice to hypertension sufferers for 7 consecutive days. operational definitions of independent and dependent research variables, and analysis techniques, namely bivariate and univariate.

### 3. RESULTS AND DISCUSSION

The results of research conducted by the author regarding the effect of giving cucumber juice on reducing blood pressure in hypertension sufferers, show that of the 30 respondents obtained before the blood pressure intervention, the majority of respondents were in the grade 2 hypertension category (160 - 179 mmHg) with 25 respondents (83, 3%), whereas after the intervention of giving cucumber juice the majority of respondents were in the high normal blood pressure category (130 - 139 mmHg) with 13 respondents (43.3%) indicating that there was a decrease in blood pressure values after the intervention of giving cucumber juice. Research on the effect of cucumber juice on reducing blood pressure in hypertensive patients at the Imelda Workers Indonesia General Hospital. Data is generated from analysis and interpretation of blood pressure using a blood pressure monitor and stethoscope. The data was carried out for 7 days from 14 – 20 August 2023 by giving cucumber juice before and after and there were 30 respondents who met the inclusion criteria at the Imelda Indonesian Workers General Hospital. Respondent characteristics describe the number of respondents who are hypertensive patients with the characteristics of respondents according to age, gender and occupation.

**Table 1. Characteristics Patient Hypertension**

No	Characteristics Respondent	Frequency	Percentage(%)
1.	Age		
	18 – 44 year (Mature)	16	53.3
	45 – 59 year (Pre Elderly)	12	40.0
	> 60 years (Seniors)	2	6,7
	Total	30	100
2.	GenderMan		
	Woman	19	63.3
	Total	11	36.7
		30	100
3.	Work		
	Civil	6	20.0
	servants	12	40.0
	Self-	1	3.3
	employed	8	26.7
	Farmer	3	10.0
	IRT		
	Laborer		
	Total	30	100

Table 1 shows that from the 30 respondents the mean age was 44.50, median 42, Std deviation 9.153, minimum – maximum 30 – 62 with the majority being 16 respondents (53.3%), the majority of respondents were male. 19 respondents (63.3%) and 12 respondents were self-employed.

### **Blood Pressure Variables**

The results of research on 30 hypertensive patients were based on blood pressure before and after administration of cucumber juice.

**Table 2.** Distribution of average blood pressure values before and after intervention

<b>Tekanan Darah</b>	<b>Mean</b>	<b>Median</b>	<b>Min-Max</b>	<b>Std. Deviation</b>
Sebelum	170,17	175,00	(145 – 179)	10,524
Sesudah	134,17	132,50	(120 – 150)	10,007

Based on Table 2, it shows that the blood pressure of the 30 respondents before the intervention was obtained with a mean of 170.17, median 175.00, minimum – maximum 145 – 179, std. deviation 10.524, , *median 175.00, minimum – maximum 145 – 179, std. deviation 10,524*, while blood pressure after intervention with *the mean 134.17, median 132.50, minimum – maximum 120 – 150, std. deviation 10.007* Which show that There is declinemark stress blood after done intervention giving juice cucumber.

**Table 3 . Frequency distribution of blood pressure in hypertension sufferers before and after intervention**

<b>Pressure Blood</b>	<b>Pre (Before)</b>		<b>Post (After)</b>	
	<b>Frequency (f)</b>	<b>Percentage (%)</b>	<b>Frequency (f)</b>	<b>Percentage (%)</b>
normal < 130 / 85 mmHg	0	0	9	30.0
normal tall (130– 139 / 85-89 mmHg)	0	0	13	43.3
Hypertension degrees 1 (140 – 159 / 90-99 mmHg)	5	16.7	8	26.7
Hypertension degrees 2 (160 – 179 / 100-110 mmHg)	2 5	83.3	0	0
Total	3 0	100	30	100

Based on table 3, it shows that of the 30 respondents obtained before the blood pressure intervention, the majority of respondents were in the grade 2 hypertension category (160 - 179 mmHg) as many as 25 respondents (83.3%), whereas after the intervention was carried out juice cucumber majority respondents on category pressure blood normal tall (130 – 139 mmHg) as much 13 respondents (43.3%) Which indicates that there is a decline in value pressure blood after done intervention giving juice cucumber.

**Table 4.** Data Normality Test Results on Blood Pressure Value Variables Before and After Intervention (n=30)

Variable	Test Normality	
	<i>p value</i>	Information
Pressure Blood <i>Pre</i> Intervention	0.136	Distribution Normal
Pressure Blood <i>Post</i> Intervention	0.127	Distribution Normal

Based on Table 4 can be concluded that pressure blood before and after the intervention of giving cucumber juice was normally distributed because the p value was  $> 0.05$  so the analysis allowed for parametric statistical tests. Statistical test results for the effect of giving cucumber juice on reducing blood pressure in patients hypertension at Imelda General Hospital Worker Indonesia on 30 patient hypertension based on *paired sample test t-test* (between before And after intervention) there is on table 5.

**Table 5.** Difference Mark Average Pressure Blood on Patient Hypertension

Pressure Blood		<i>Mean</i>	<i>N</i>	<i>Std. Deviation</i>	<i>Std. Error Mean</i>	<i>p value</i> (Sig (2-tailed))
<i>Pair 1</i>	<i>Pre Intervention</i>	170.17	30	10,524	1,921	0,000
	<i>Post t Intervention</i>	134.17	30	10,007	1,827	

Based on table 5 above, it was found that the blood pressure value after the intervention had decreased and seen from the p value of  $0.000 < 0.05$ , it could be concluded that there was an effect of giving cucumber juice on reducing blood pressure in hypertensive patients.

#### **4. CONCLUSION**

Based on the research results that giving cucumber juice to hypertensive sufferers can have an effect by giving 250 ml of cucumber juice 15-30 minutes before eating for 7 consecutive days with results with a p value  $<0.005$ , it can be concluded that there is an effect of giving cucumber juice on reducing blood pressure in hypertensive sufferers.

#### **REFERENCES**

- (Adquisiciones et al., 2019; Anies, 2020; Asadha, 2021; Dewi Murdiyanti Prihatin Putri, M.Kep., Ns. & NurilAmelia, S.Kep., Ns., M.Kep, 2019; Dinar Maulani, 2022; Kharisna et al., 2018; Yunitasari, 2018) Adquisiciones, LEYDE, Vigente, T., Frampton, P., Azar, S., Jacobson, S., Perrelli, TJ, Washington, BLLP, No, Ars, PRD a T .a W., Kibbe, L., Golbère, B., Nystrom, J., Tobey, R., Conner, P., King, C., Heller, PB, Torras, AIV, To-, INO, Frederickson, H.G., ... SOUTHEASTERN, H. (2019). No主観的健康感を中心とした在宅高齢者における 健康関連指標に関する共分散構造分析Title. *Duke Law Journal* , 1 (1), 8–36.
- Anies. (2020). Concept of Hypertension Theory. *Journal of Analysis* , 7 (2), 5–21.
- Asadha, S.A. (2021). EFFECTIVENESS OF CUCUMBER (*Cucumis sativus* L) JUICE IN REDUCING BLOOD PRESSURE IN HYPERTENSION PATIENTS. *Hutama Medika Journal* , 3 (1), 1595.
- Republic of Indonesia Ministry of Health. (2018). *Main Results of Basic Health Research 2018* . Indonesian Ministry of Health.
- Dewi Murdiyanti Prihatin Putri, M.Kep., Ns., SKMR, & NurilAmelia, S.Kep., Ns., M.Kep, 123. (2019). No Title. In *juice therapy* (Issue the effect of juice therapy on reducing blood pressure).
- Dinar Maulani, ES (2022). Giving Cucumbers to Reduce Blood Pressure in Hypertension Sufferers Professional Nursing Research Journal. *Journal of Professional Nursing Research* , 3 (1), 153–158.
- Husain, F., Purnamasari, AO, Istiqomah, AR, & Putri, AL (2021). Aisiyiah Surakarta Journal of Nursing. *Aisiyiah Surakarta Journal of Nursing* , 2 , 1–6.
- Kharisna, D., Dewi, WN, & Lestari, W. (2018). *Effectiveness of Complementary Therapy in Hypertension Sufferers* .
- Lubis, RM, Suliani, NW, & Anestiya, A. (2019). Rosita Magdalena Lubis. *HUSADA KARYA JAYA NURSING ACADEMY JOURNAL* , 5 (2), 28–33. <https://doi.org/DOI: http://dx.doi.org/10.59374/jakhkj.v5i2.112>
- Susanti, NKM, Ayubbana, S., & Senja Atika Sari HS. (2022). Application of Guided Imagery Relaxation Therapy on Blood Pressure of Hypertensive Patients in the Heart Disease Room at RSUD Jend. Ahmad Yani Metro City. *Journal of Young Scholars* , 2 (1), 96–102. <https://jurnal.akperdharmawacana.ac.id/index.php/JWC/article/view/297>
- Yunitasari, PY (2018). Relationship between Hypertension Patient Characteristics and Blood Pressure Control Behavior at UPT Public Health Gianyar I in 2018. *Thesis, Department of Nursing* , 2015 , 1–24.
- WHO. (2015). *World Health Statistics Report* . Who.int.