

## **GIVING CUCUMBER INFUSED WATER TO REDUCE HIGH BLOOD PRESSURE**

**Hanny Irmaya\*, Hendrawati, Husnun Kamila**

DIII Nursing Study Program, Sekolah Tinggi Ilmu Kesehatan Pamentas, Jl. Pertanian Raya No.1 10, Lb. Bulus,  
Cilandak, Jakarta 12440, Indonesia

\*[mamilotusdanrizo@gmail.com](mailto:mamilotusdanrizo@gmail.com)

### **ABSTRACT**

Hypertension ranks 6th on the list of Non-Communicable Diseases in Indonesia. The consequences of hypertension if not treated immediately can cause severe damage to body organs. Some conditions of damage associated with hypertension are stroke, heart failure, kidney damage, heart attacks, aneurysms and eclampsia in pregnant women. Cucumber fruit is very good for blood vessels and the heart, where the content of cucumbers that can help lower blood pressure include potassium, magnesium and fastor effectively treat hypertension. Purpose in this study, we analyze the effect of giving cucumber infused water on reducing high blood pressure in the community in Rt 003 Rw 007 Ismaya Cinere, West Java. This type of research is a description with a case study approach model, the sample is 4 respondents who experienced increased blood pressure, with the application of cucumber infused water for 7 days. Results: after 7 days of respondents being given infusion water therapy, there was a decrease in blood pressure from before and after the intervention, the results after the intervention were given the first client's blood pressure: 135/90MmHg, the second client's blood pressure: 125/85MmHg, the third client's blood pressure: 148/85MmHg and the fourth client's blood pressure: 140/95MmHg. Conclusion: cucumber infused water is successful in lowering blood pressure in hypertensive patients.

Keywords: hypertension; infused water; cucumber

### **INTRODUCTION**

The World Health Organization (WHO) in 2015 showed that around 1.13 billion people in the world have hypertension, meaning that 1 in 3 people in the world are diagnosed with hypertension. The number of people with hypertension continues to increase every year, it is estimated that in 2025 there will be 1.5 billion. In Indonesia, the estimated number of hypertension cases is 63,309,620 people, while the death rate in Indonesia due to hypertension is 427,218 deaths. Hypertension occurs in the age group 31-44 years (31.6%), 45-54 years (45.3%), 55-64 years (55.2%) (Risksdas Ministry of Health of the Republic of Indonesia, 2018). The prevalence of 2 hypertension sufferers is higher in the ages of 55-64 years (55.2%), 65-74 years (63.2%) and > 75 years (69.5%) in Indonesia (Ministry of Health, 2018). Nationally, the province that is ranked ninth with a hypertension prevalence rate of 33.43% is DKI Jakarta. The incidence of hypertension in West Java is 41.6%, the incidence in the RT 003 area is 10.2% of the 102 residents in the area.

Hypertension usually attacks those who are middle-aged (over 40 years old), although it is increasingly attacking people aged 18 years. However, many people do not realize that they have hypertension. This is because the signs of hypertension are sometimes deceiving and cause major health problems (Amalia, 2021; Fitriani & Setiawan, 2020). This is evidenced by data from WHO (World Health Organization) in 2013 showing that there were 9.4 million people out of 1 billion people in the world who died from cardiovascular system disorders.

Based on the data above, hypertension is increasing every year., thus appropriate health care is needed so that hypertension can be controlled. The efforts of nurses in overcoming hypertension include preventive or prevention, namely by reducing salt consumption not exceeding 1 spoon per

day, doing regular physical activity, doing regular exercise, meeting rest needs, In promotive efforts, nurses play a role in providing health education about hypertension including understanding, causes, signs, symptoms, complications and prevention. As for prevention or preventive reducing salt consumption, not smoking and avoiding cigarette smoke, balanced nutritional diet, maintaining ideal body weight, checking blood pressure regularly, reducing stress Most people to overcome hypertension emergencies use traditional medicine can be an option, one of which is cucumber, cucumber is very good for blood vessels and heart, where the content in cucumbers can help lower blood pressure, the content in cucumbers including potassium, magnesium and fistor are effective in treating hypertension. Potassium is the main intracellular electrolyte, in reality, 98% of the body's potassium is in cells, the remaining 2% is outside the cell, what is important is this 2% for neuromuscular function, potassium affects the effectiveness of both skeletal muscles and skeletal muscles and heart muscles. In addition, cucumbers also have diuretic properties consisting of 90% water that can remove salt content from the body. The rich minerals in cucumbers are indeed able to bind salt and be excreted through urine (Preston, 2019).

## **METHOD**

This type of research is Descriptive with a case study approach model. Case studies are research designs that include Observation, interviews, Questionnaires and intensive assessments for example one client, family, group, community, or institution. (Donsu, 2016). This type of research describes the application of cucumber infused water to reduce high blood pressure in the community in Cinere, West Java. The data collection methods used by researchers are:

### **Interviews and Physical Examination**

Interviews are direct data collection from patients or families by asking several questions such as patient identity, patient blood pressure history, hereditary disease history, drug use history and allergy history

### **Observation**

Observation was carried out before and after the infused water intervention was given, by looking at the respondent's blood pressure, blood pressure measurements were taken after infused water was given for 7 days

### **Physical examination**

A physical examination was carried out on the 4 respondents, measuring blood pressure before the intervention and after 7 days of the intervention, in addition to blood pressure, other vital signs were also measured

### **Documentation**

Documenting the respondent's blood pressure before and after and the activity of giving infusion water

## **RESULT AND DISCUSSION**

This research was conducted using a qualitative method approach by means of interviews, observations, and daily records of blood pressure, in respondents who had hypertension, the data collection process that had been carried out by the researcher began when searching for data on respondents with hypertension that met the inclusion criteria that had been set.

### **Respondent 1**

The assessment in this study began with an interview on May 8, 2024 with the results. Mrs. R, aged 63 years, when a physical examination was carried out, the data obtained were BP: 150/100 mmHg,

Pulse: 85x/minute, RR: 19x/minute, S: 36.1, Weight: 60kg Height 150 cm, Mrs. R said that she had had hypertension since the age of 45, the respondent said that if her blood pressure was high, the respondent felt a stabbing headache and her eyes were dizzy, to deal with this problem Mrs. R usually chose to sleep, Mrs. R did not take high blood pressure medication, the researcher provided an infusion intervention of cucumber fruit water by inserting 300 grams of fruit pieces cucumber into 1 liter of water, this is done every day until the 7th day of water infusion, on the 7th day of water infusion the respondent's TTV was measured and the results were BP 147/90 mmHg, N: 84x/minute, RR 18x/minute, S: 36.1 C, during the water infusion Mrs. R also reduced foods that contained a lot of salt and did a little physical activity, namely walking around the house.

### **Respondent 2**

Respondent 2 is Mrs. Y, 41 years old, when a physical examination was carried out, the results were BP 148/95 mmHg, Pulse 86x/minute, RR 19x/minute, BB: 67kg, TB: 159 cm, Mrs. Y has had hypertension since the age of 30, if blood pressure is high, Mrs. Y usually feels weak and has a headache, if these symptoms appear she controls it better by resting and sleeping, Mrs. Y does physical activity, namely walking for 30 minutes every Sunday morning and diligently consume fruits and vegetables but Mrs. Y does not consume blood pressure lowering medication. Respondent 2 was also given an intervention of water infusion therapy for 7 days, the results obtained in the respondent after the 7th day were BP: 130/90 mmHg, Pulse 84x/minute, RR 18x/minute, S: 36.1 besides drinking water infusion Mrs. Y also reduced junk food consumption.

### **Respondent 3**

The third respondent is Mr. A aged 34 years, when a physical examination was carried out, BP was 150/100 mmHg, N: 90x/minute, RR: 19x/minute, BB: 69x/minute, Tb 170 cm, Mr. A has had hypertension since the age of 30 due to poor diet and rarely doing physical activity, often consuming coffee and being an active smoker, Mr. A takes high blood pressure medication but only if he is sick or feels an unbearable headache. After being given a water infusion intervention for 7 days, the results obtained were BP 148/90 mmHg, Pulse: 84x/minute, RR 18x/minute, temperature: 36.1. Apart from consuming water infusion, Mr. A also reduced smoking and occasionally improved his sleep patterns.

### **Respondent 4.**

Respondent 4 is Mr. N, aged 65 years, during a physical examination, the data obtained were BP 160/101 mmHg, N: 90x/minute RR: 19x/minute, S: 36, BB 75 kg, Tb 170 cm, Mr. N said that he had experienced hypertension since the age of 40, the respondent said that hypertension was caused by an unhealthy diet and the habit of staying up late, Mr. N took Amlodipine 5mg but only when he was sick or felt his head was heavy. After the intervention of water infusion for 7 days, the results obtained were BP: 145/90 mmHg, Pulse: 84x / minute, RR 19x / minute temperature: 36.1 in addition to consuming water infusion, Mr. N also reduced the number of cigarettes / stick / day.

Based on the results of the study conducted for 7 days by administering water infusion of 300 grams of cucumber pieces in 1 liter of water and drunk every day by respondents, namely:

Table 1.  
 Blood Pressure Measurement Results Before and After Intervention

Respondent	Blood Pressure Measurement Results Before Intervention	Blood Pressure Measurement Results After Intervention
Respondent 1	150/100 mmHg	TD 147/90 mmHg
Respondent 2	TD 148/95 mmHg	TD : 130/90 mmHg
Respondent 3	150/100 mmHg	148/90 mmHg
Respondent 4	160/101 mmHg	145/90 mmHg

The results of this study are in accordance with the signs, symptoms and causes obtained from the respondents. Of the four respondents, each of them often consumes junk food, hereditary factors, lack of activity or exercise, staying up late and also smoking. Junk food mostly contains high fat and accumulates in the body so that it can cause obesity, and is susceptible to chronic diseases. Then junk food contains high sodium so that sodium intake that increases from daily sodium requirements will cause an increase in plasma volume, the heart must pump hard to push the increased blood volume through an increasingly narrow space which causes hypertension (Halimah, 2019). From the results of the research conducted, data was obtained that this study was successful in lowering blood pressure after being given cucumber infused water for 7 days, the results were obtained from the four respondents, namely, the first respondent TD: 135 / 90mmhg, the second respondent TD: 125 / 85mmhg, the water infusion succeeded in lowering high blood pressure in respondents 1 and 2 because both respondents were supported by changes in lifestyle such as diet and doing physical activities, but in respondents 3 and 4 a slight decrease in blood pressure was caused by respondents not living a healthy lifestyle, namely no food restrictions, irregular sleep patterns and still actively smoking.

In respondents 1 and 2, in line with research conducted by Katimenta (2018) and Nani (2018) explained that the blood pressure of respondents after being given cucumber infused water with the results of blood pressure was experiencing a reduction in blood pressure in the elderly with hypertension with an average blood pressure of prehypertension and normal blood pressure. However, in respondents 3 and 4 because these respondents still have the habit of smoking and staying up late every night. Smoking can cause hypertension due to the chemicals contained in tobacco, especially nicotine, which can stimulate the sympathetic nerves, triggering the heart to work faster so that blood circulation flows faster and narrowing of the blood vessels occurs, as well as the role of carbon monoxide which can replace oxygen in the blood and force the heart to meet the body's oxygen needs so that blood pressure increases above normal (Sukmana, 2009).

In the author's research, in accordance with Shewood's research, (2010), the habit of smoking and consuming excess salt causes blood pressure to increase. Thus, it is recommended for all respondents to control blood pressure checks and change to a healthy lifestyle so that blood pressure does not increase. That cucumbers contain Potassium which is useful in lowering angiotensin II levels which cause a decrease in ADH (Anti Diuretic Hormone) levels, when ADH levels decrease the kidneys will increase urine secretion more, to concentrate urine the volume of intracellular fluid will draw extracellular fluid (sodium), because the withdrawal of extracellular fluid out will reduce the concentration of sodium in the blood and will result in a decrease in blood pressure. Blood pressure reduction occurs because cucumbers have a potassium content which causes inhibition of the Renin Angiotensin System also causes the formation of a reduction in aldosterone secretion, so that there is a reduction in sodium and water reabsorption in the renal

tubules. As a result of this mechanism, there is an increase in diuresis which causes a decrease in blood volume, so that blood pressure also drops

## CONCLUSION

From the results of blood pressure observations on all respondents, data was obtained that all respondents had hypertension. The hypertension experienced was an increase in systolic blood pressure of at least 140 mmHg or diastolic pressure of at least 90 mmHg. Hypertension is not only at high risk of suffering from heart disease, but also suffering from other diseases such as nerve, kidney and blood vessel diseases and the higher the blood pressure, the greater the risk. To overcome this hypertension, one of the non-pharmacological therapies is needed, namely the administration of cucumber infused water. From the 4 respondents who were studied, in addition to the administration of water infusion, the respondents' lifestyles must also be changed, such as limiting foods that contain a lot of sodium, doing physical activity at least 3 times / week, regular sleep patterns and quitting smoking.

## REFERENCES

- Ahmad Riza'I, S. Kep, Dkk. 2022. Penelitian Pengaruh Pemberian Infused Water Mentimun Terhadap Menurunkan Tekanan Darah Pada Lansia Hipertensi. Universitas Binawan Jakarta dari : [https://repository.binawan.ac.id/2899/1/Laporan Pengaruh Pemberian Infused Water Mentimun 2022.pdf](https://repository.binawan.ac.id/2899/1/Laporan%20Pengaruh%20Pemberian%20Infused%20Water%20Mentimun%202022.pdf)
- Alina Ulfa Solikhah. 2019. Pengaruh Pemberian Infused Water Mentimun Terhadap Perubahan Tekanan Darah Pada Lansia Hipertensi Di Wilayah Kerja Puskesmas Takeran Kabupaten Magetan Program Studi Keperawatan Stikes Bhakti Husada Mulia Madiun. Dari <https://repository.stikes-bhm.ac.id/630/1/1.pdf>,
- Bahtiar Yusuf, Isnaniah, Yuliati. 2021. Jurnal IMJ: Indonesia Midwifery Journal Vol 4 No 2 Tahun 2021 Prodi DIII Keperawatan STIK Makassar Dari <https://jurnal.umt.ac.id/index.php/imj/article/download/4272/2505>
- Citta Ayunda Heriyanti, Ddk. 2023. Pengaruh Pemberian Infused Water Mentimun Terhadap Penurunan Tekanan Darah Pralansia Hipertensi Dari [Https://Journal2.Stikeskendal.Ac.Id/Index.Php/Keperawatan/Issue/View/27](https://Journal2.Stikeskendal.Ac.Id/Index.Php/Keperawatan/Issue/View/27)
- Danang Gumelar Wicaksana. 2019. Efektivitas Pemberian Jus Mentimun Terhadap Perubahan Tekanan Darah Pada Pasien Hipertensi. Dari <https://repository.stikes-bhm.ac.id/644/1/1.pdf>
- Glenda Freeisi Makalew. 2023. Faktor Risiko Peningkatan Darah Pada Kelompok Usia 17-35 Tahun Di Desa Waleo Dua Dari <https://ejournal.unsrat.ac.id/v3/index.php/jkp/article/download/48470/42792/112065>
- Karmitasari Yanra Katimenta, Siti Santy Sianipar, Nani Indriani. 2018. Efektivitas Pemberian Infused Water Mentimunterhadap Penurunan Tekanan Darah Di Kecamatan Pahandut Kota Palangka Raya. <https://ojs.dinamikakesehatan.unism.ac.id/index.php/dksm/article/view/351>,
- LA ODE ALIFARIKI. (2022). JURNAL NURSING UPDATE- VOL.13. NO. 1 2022

Standar Operasional Prosedur Pengukuran Tekanan Darah Stikes Pamentas Jakarta. 2018.  
Dari <https://bit.ly/SOP-PPNI>