

The Effect of Cucumber Juice on Reducing Blood Pressure in Hypertension Patients at Dr. RM Djoelham Hospital in Binjai in 2024

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Abstract

Hypertension or high blood pressure is an increase in blood pressure in the arteries. Where hyper which means excessive, and tension which means pressure / tension, so hypertension is a disorder of the circulatory system which causes an increase in blood pressure above normal values. This type of research is a correlation study using a quasi-experimental study design. The aim of the research is to find out the effect of giving cucumber juice on reducing blood pressure in hypertensive patients at RSUD Dr RM Djoelham Binjai in 2022. In this study the sampling technique used was to take 20% of the total The existing population is the number of samples of 60 people. The results of testing the hypothesis to see the relationship between variables X and Y are with a significant level (α) = 5% (0.05) and $df = 1$ taken $p.value = 0.044$ at $df = 1$ where $sig < (\alpha)$ ($0.044 < 0.05$) then H_0 is rejected so it means that there is an effect of giving cucumber juice to reducing blood pressure in hypertensive patients at Dr. RM Djoelham Binjai in 2024. The results of this study are expected to motivate patients about the effects of hypertension and cucumber juice.

Keywords: Hypertension, High blood pressure, Circulatory system disorder, Cucumber juice.

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Introduction

Hypertension is a current public health problem due to its increasing prevalence. The overall infection rate in the Northern Territory was 29.19%, or 32,944 residents. The prevalence of obesity in Langkat Region is 26.36% (1).

Women are more likely to suffer from high blood pressure than men, due to the presence of the hormone estrogen in women. Estrogen plays a role in regulating blood pressure. Estrogen depletion due to aging can cause heavy bleeding in women. Lifestyle is often a significant risk factor for chronic disease. Some of these factors include dietary patterns such as high fat and salt intake, obesity, or overeating. Unhealthy behaviors such as alcohol consumption, stress, emotional stress, and physical inactivity, which can increase the risk of obesity, are also risk factors for cardiovascular disease (2).

Strategies for lowering blood pressure include both pharmacological (use of medication) and non-pharmacological (no medication) approaches. Anticoagulants have long been shown to be effective in controlling blood pressure, but herbal medicines also play an important role and can be used to control blood pressure. Products that can be used to control blood pressure include fruits and vegetables that are high in fiber, vitamins, and minerals (3).

One herb that can be used to prevent and lower blood pressure is cucumber. Cucumbers are usually slow and inexpensive. Among the general population, cucumbers were eaten as a side dish; this could be a solution to treat chronic obstructive pulmonary disease (4).

Cucumbers have blood pressure lowering properties (lowers blood pressure). The water and potassium content of cucumbers draws sodium into the extracellular space, opening the blood vessels (vasodilation), which can lower blood pressure. Potassium is the main electrolyte in the body; in fact, 98% of the body's potassium is stored in cells, with 2% being used for nerve function. Potassium regulates muscle and nerve function (4).

Literature Review

Severe symptoms are defined as an increase in systolic blood pressure of more than 140 mmHg and a diastolic blood pressure of more than 90 mmHg, based on two or more measurements using a mercury cuff (sphygmomanometer) or other instrument. Hypertension, or high blood pressure, is a chronic condition in which blood pressure in the arteries (pure blood vessels) increases, with blood pressure above or below 140/90 mmHg (1).

Cucumbers belong to the Cucurbitaceae family and have the Latin name *Cucumis Sativus* L. Cucumbers, or Cucumber L., are annual herbs that grow with a thorny texture. Cucumbers have spiral-shaped leaves. The stems are thin, slender, and slender. The leaves are oval, heart-shaped, with rounded green and yellowish-brown spots. The flowers have long stalks, and the fruit is smooth and shiny (10-20 cm) and contains a lot of juice. Younger flowers are waxy white, while larger flowers are dirty. The fruit consists of many yellow and white flowers (5)

Cucumbers contain flavonoids, polyphenols, malonic acid, and fiber. Cucumber seeds contain cucurbitacin C and stigmasterol, while cucumber seeds contain vitamin E. Cucumbers are believed to prevent cancer. Flavonoids and polyphenols have anti-inflammatory properties. Malonic acid can inhibit the conversion of sugar into fat, making cucumbers better at burning fat. Their high fiber content can help relieve constipation, lower cholesterol, and eliminate toxins. Fruits have antimicrobial properties, slow aging, and heal wounds (6).

Research Methodology

The method used in this study was a quasi-experimental design. Using quantitative methods, the aim of this study was to determine the effect of cucumber juice on blood pressure reduction in patients with hypertension in Djoelham Binjai Hospital in 2024. This design used a single group, the experimental group, without a control group. Thus, the sample size for this study was 60 individuals. Sampling includes inclusion and exclusion samples, which determine whether or not the sample can be used.

Results and Discussion

4.1 Univariate Analysis

Based on an ongoing study, which aimed to determine the efficacy of coconut extract administration in lowering blood pressure in patients with hypertension in Dr RM Djoelham Binjai

Tabel 4.1.

Frequency Distribution of Cucumber Juice Administration at Dr. RM Djoelham General Hospital, Binjai Year 2024 (n = 60)

No	Category	Frequency (f)	Percentage (%)
1.	No Drinking	20	33.3
2.	Drink	40	66.7
Total		60	100

Based on table 4.1 above it is known that out of 60 respondents, the majority drink coconut milk is 40 respondents (66.6%) and the least do not drink coconut milk is 20 respondents (33.3%)

Table 4.2 Frequency Distribution Based on Blood Pressure Reduction At Dr. General Hospital RM Djoelham Binjai 2024 (n = 60)

No	Category	Frequency (f)	Percentage (%)
1.	Not Down	28	46.7
2.	Down	32	53.3
Total		60	100

Based on table 4.2 above it is known that out of 60 respondents majority of blood pressure reduction to decrease as 32 respondents (46.7%) and minority did not decrease as 28 respondents (53.3%).

4.2 Analysis Bivariate

Based on the results of the chi-square test of the influence of cucumber juice administration on lowering the blood pressure of hypertensive patients in Dr. RM Djoelham Binjai Year 2024 with the degree of significance (α) = 0.05 and $df = 1$ obtained the calculation result is Sig (2-tailed) $0.044 < (\alpha) = 0.05$, then H_0 is rejected and H_a is accepted. In conclusion there is an effect of cucumber juice administration on lowering the blood pressure of hypertensive patients in Dr. RM Djoelham Binjai Year 2024.

Conclusion

Based on the results of the research and clarification that has been described earlier then conclusions are drawn regarding the influence of giving cucumber juice to hypertensive patients in Dr. General Hospital. RM Djoelham Binjai Year 2024

The results of the study showed that out of 60 respondents majority of cucumber juice administration, who drank as many as 40 respondents (66.6%) and minority of cucumber juice

administration, who did not drink as many as 20 respondents (33.3%). It was found that out of 60 respondents majority of blood pressure reduction, which decreased by 32 respondents (46.7%) and minority of cucumber juice administration, which did not decrease by 28 respondents (53.3%).

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