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Cucumber Juice Therapy as a Non-Pharmacological Intervention for Hypertension Patients: A Case Study in South Konja, Majene Regency

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ABSTRAK

Hipertensi adalah salah satu penyakit tidak menular yang paling umum dan faktor risiko utama untuk morbiditas dan mortalitas kardiovaskular. Intervensi non-farmakologis, seperti pengobatan herbal, semakin dianggap sebagai alternatif pengobatan, terutama di kalangan lansia. Penelitian ini bertujuan untuk mengetahui pengaruh jus mentimun dalam menurunkan tekanan darah pada pasien hipertensi. Penelitian ini menggunakan pendekatan studi kasus untuk mengeksplorasi pengaruh konsumsi jus mentimun terhadap penurunan tekanan darah pada individu dengan hipertensi. Penelitian ini dilakukan di Dusun Konja Selatan, Desa Pamboborang, Kabupaten Majene, melibatkan tiga responden yang tidak mengonsumsi obat antihipertensi. Setiap peserta mengonsumsi 200 ml jus mentimun sekali sehari selama tiga hari tidak berturut-turut. Tekanan darah diukur sebelum dan 30–60 menit setelah konsumsi. Hasil menunjukkan penurunan tekanan darah sistolik dan diastolik yang konsisten di seluruh responden, dengan penurunan berkisar antara 10 hingga 40 mmHg. Responden merasa lebih rileks dan mengalami peningkatan buang air kecil. Temuan ini mendukung potensi jus mentimun sebagai terapi komplementer untuk hipertensi karena kandungan kalium, magnesium, dan airnya yang tinggi, yang mendorong efek diuretik dan vasodilatasi. Kesimpulan, jus mentimun dapat menjadi pilihan non-farmakologis yang praktis, aman, dan mudah diakses untuk mengelola hipertensi, terutama di lingkungan kesehatan masyarakat.

Kata Kunci : Jus mentimun, Hipertensi, Terapi Nonfarmakologi, Tekanan Darah, Kesehatan Masyarakat

ABSTRACT

Hypertension is one of the most common non-communicable diseases and a major risk factor for cardiovascular morbidity and mortality. Non-pharmacological interventions, such as herbal remedies, are increasingly considered as alternatives to medication, especially among the elderly. This study aimed to determine the effect of cucumber juice on lowering blood pressure in hypertensive patients. This study utilized a case study approach to explore the effect of cucumber juice consumption on blood pressure reduction in individuals with hypertension It was conducted in Dusun Konja Selatan, Pamboborang Village, Majene Regency, involving three respondents who were not taking antihypertensive drugs. Each participant consumed 200 ml of cucumber juice once daily for three non-consecutive days. Blood pressure was measured before and 30–60 minutes after consumption. Results showed a consistent reduction in systolic and diastolic blood pressure across all respondents, with decreases ranging from 10 to 40 mmHg. Respondents also reported feeling more relaxed and experiencing improved urination. These findings support the potential of cucumber juice as a complementary therapy for hypertension due to its high potassium, magnesium, and water content, which promote diuretic and vasodilatory effects. In conclusion, cucumber juice may be a practical, safe, and accessible non-pharmacological option for managing hypertension, particularly in community health settings.

Keywords: Cucumber juice, hypertension, non-pharmacological therapy, blood pressure, community health

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INTRODUCTION

Non-communicable diseases have become a major threat to global health. More than 36 million people die each year from non-communicable diseases, accounting for almost two-thirds of global deaths. One of the most common is high blood pressure or hypertension. Hypertension is defined as a persistent increase in blood pressure above the normal range, specifically a systolic pressure over 140 mmHg and/or a diastolic pressure over 90 mmHg (Apriyani, 2022). Hypertension is considered one of the most dangerous cardiovascular disorders worldwide, as it is a primary risk factor for other cardiovascular conditions such as heart disease and kidney failure (Mohamed et al., 2020).

Hypertension can be caused by various factors such as age, psychological stress, smoking, heredity, unhealthy dietary habits, physical inactivity, and alcohol consumption (Ernawati et al., 2020). Individuals with hypertension may experience symptoms such as severe headaches, blurred vision, ringing in the ears, irregular heartbeat, chest pain, fatigue, difficulty breathing, anxiety, nausea, vomiting, epistaxis, hematuria, and even loss of consciousness (Harahap et al., 2022).

One of the contributing factors to the rising prevalence of hypertension is age-related physiological changes. Elderly individuals are particularly vulnerable due to reduced organ function and a general decline in body systems (Nurhaedah, 2019). Moreover, inadequate health monitoring and lack of regular medical checkups among the elderly population exacerbate this condition. Hypertension is a significant risk factor for cardiovascular diseases, with severity increasing with age (Berlian, 2019).

Hypertension may lead to severe complications such as thrombotic and hemorrhagic stroke, retinopathy, heart and kidney failure, atherosclerotic vascular diseases, and even death (Nurhaedah, 2019). Hypertension can be managed through both pharmacological and non-pharmacological approaches. Pharmacological therapy involves medications prescribed by physicians, while non-pharmacological methods include lifestyle modifications and the use of medicinal herbs (Mohammad et al., 2020).

One of the common problems associated with pharmacological treatment is its side effects, such as increased blood sugar and cholesterol levels or decreased energy. Many patients often consume additional drugs to counter these side effects, which may lead to further complications. An alternative solution is the use of herbal therapy, which involves the use of natural extracts from plants and fruits (Kharisna et al., 2012).

Cucumber (*Cucumis sativus*) is one of the natural ingredients known to possess beneficial nutrients. It is rich in potassium, which supports heart and vascular health. Previous studies have shown that insufficient potassium intake significantly increases the risk of hypertension (Arum, 2019). Cucumbers also contain calories, protein, fat, carbohydrates, calcium, minerals, iron, and vitamins. They help lower blood pressure by regulating heart rhythm and counteracting the harmful effects of sodium (Setiawan & Sunarno, 2022).

Based on a survey conducted on May 6, 2025, among several families in Dusun Konja Selatan, Desa Pamboborang, it was found that hypertension was a prevalent health issue. Therefore, a non-pharmacological intervention using cucumber juice administered three times per week was implemented to help reduce blood pressure and improve the health of hypertensive individuals in the area.

METHOD

This study utilized a case study approach to explore the effect of cucumber juice consumption on blood pressure reduction in individuals with hypertension.

The research was conducted in Dusun Konja Selatan, Pamboborang Village, Majene Regency, during the period of May 13rd to June 2025, with the intervention delivered over three non-consecutive days.

The cases examined involved three individuals selected through purposive sampling based on the following inclusion criteria:

1. Diagnosed with hypertension (blood pressure ≥140/90 mmHg),
2. Not regularly taking antihypertensive medication, and
3. Willing to participate and complete all study procedures.

Data collection was carried out using two methods:

1. Blood pressure measurement using a digital sphygmomanometer, taken before and 30–60 minutes after cucumber juice consumption,
2. Brief interviews to gather health history and subjective symptoms experienced by the participants.

The intervention consisted of administering 200 ml of freshly prepared cucumber juice to each participant every morning before breakfast. This procedure was conducted over three separate days, with blood pressure readings recorded both before and after consumption on each day.

Data analysis was conducted descriptively by comparing pre- and post-intervention blood pressure values for each individual case. The results were analyzed and presented narratively to illustrate trends in blood pressure changes and individual responses to the intervention.

FINDING AND DISCUSSION

This section presents the results of the study on the effect of cucumber juice consumption on blood pressure among three respondents diagnosed with hypertension in Dusun Konja Selatan, Pamboborang Village. The blood pressure of each respondent was measured before and after the intervention over three separate days.

Table 1. Blood Pressure Measurements Before and After Cucumber Juice Intervention

Respondent	Date	Time	Blood Pressure Measurements	
			Before Intervention (mmHg)	After Intervention (mmHg)
R1	May 15, 2025	08.00	200/100	190/100
	May 16, 2025	08.00	190/110	180/100
	May 17, 2025	08.00	180/100	170/110
R2	May 18, 2025	08.00	190/100	180/100
	May 19, 2025	08.00	180/100	170/100
	May 20,2025	08.00	180/90	150/90
R3	May 21, 2025	08.00	160/100	155/90
	May 22, 2025	08.00	150/100	140/90
	May 23, 2025	08.00	150/90	130/90

Source: Primary Data, 2025

Based on Table 1, it can be observed that all three respondents experienced a decrease in blood pressure after consuming cucumber juice. Respondent 1's blood pressure decreased from 200/100 mmHg to 170/110 mmHg over three days. Respondent 2 showed a reduction from 190/100 mmHg to 150/90 mmHg, while Respondent 3's blood pressure dropped from 160/100 mmHg to 130/90 mmHg.

The intervention demonstrated a consistent trend of decreasing blood pressure, suggesting the potential benefit of cucumber juice as a non-pharmacological therapy for managing hypertension. Respondents also reported subjective improvements, such as feeling more relaxed and experiencing easier urination after consuming the juice.

The results of this study indicate that the consumption of cucumber juice has a positive effect in reducing blood pressure among individuals with hypertension. All three respondents showed a measurable decrease in both systolic and diastolic blood pressure after consuming cucumber juice regularly for three days. This supports the effectiveness of non-pharmacological interventions in managing hypertension, especially among individuals who are not actively taking antihypertensive medications.

The observed blood pressure reductions may be attributed to the nutritional content of cucumber. Cucumber contains potassium, magnesium, fiber, and high water content, all of which contribute to cardiovascular health. Potassium helps to balance sodium levels in the body, regulates heartbeat, and reduces tension in blood vessel walls, ultimately contributing to lower blood pressure. Magnesium, on the other hand, supports healthy blood flow and helps relax blood vessels, which is essential in controlling hypertension.

The diuretic effect of cucumber is also notable. Respondents reported increased urination after consuming the juice, which can assist in lowering blood volume and blood pressure. This aligns with research by Setiawan & Sunarno (2022), which confirmed that cucumber has a mild diuretic effect due to its high water and potassium content.

Additionally, the psychological benefits reported by the respondents—such as feeling more relaxed and lighter after drinking cucumber juice—may also contribute indirectly to reduced blood pressure. Stress is known to be a significant factor in increasing blood pressure, so a sense of calmness and physical ease may further enhance the intervention's impact.

These findings are in line with previous research. A study by Kharisna et al. (2012) found that cucumber juice significantly lowered blood pressure in patients with hypertension. Similarly, Christine, Ivana, and Martini (2020) demonstrated the diuretic and cardiovascular benefits of cucumber juice, including improved kidney function and relaxed vascular tension.

Although this study provides promising results, it has limitations. The sample size was small (n=3), the intervention period was short (3 days), and no control group was included. Therefore, future research with a larger sample size, longer intervention period, and comparative analysis is needed to validate the efficacy of cucumber juice in a broader population.

In conclusion, cucumber juice may serve as an effective, low-risk, and easily accessible non-pharmacological option to help reduce blood pressure in hypertensive individuals, particularly among the elderly or those avoiding pharmacological treatment due to side effects or accessibility issues.

CONCLUSIONS

This study concludes that the consumption of cucumber juice has a noticeable effect on reducing blood pressure in individuals with hypertension. The intervention conducted over three days showed consistent reductions in both systolic and diastolic blood pressure among all respondents. These findings support the use of cucumber juice as a non-pharmacological method to help manage hypertension.

The decrease in blood pressure is likely influenced by the nutritional content of cucumber, particularly potassium, magnesium, fiber, and water, which play essential roles in vascular relaxation and fluid balance. Additionally, the diuretic effect of cucumber contributes to lowering blood volume and pressure, while the calming sensation experienced by respondents may further support blood pressure control.

Although the sample size was limited and the intervention period was short, this study provides initial evidence that cucumber juice can serve as a practical and accessible complementary therapy, particularly in community-based health promotion efforts. Future studies with larger populations and longer durations are recommended to strengthen and validate these findings.

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