

WATERMELON SKIN (*CITRULLUS VULGARIS*) BOILED WATER DECORATION REDUCES HYPERTENSION LEVELS IN WOMEN OF FERTILIZING AGE

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ABSTRAK : REBUSAN AIR KULIT SEMANGKA (*CITRULLUS VULGARIS*) MENURUNAN KADAR HIPERTENSI PADA WANITA USIA SUBUR

Latar Belakang: Hipertensi atau penyakit darah tinggi sering disebut juga dengan *Silent Killer* atau pembunuh diam-diam, karena penyakit ini muncul tanpa menunjukkan gejala yang jelas. Menurut jumlah hipertensi di Indonesia 34,1%, di Sumatera Utara sebesar 29,19%, untuk Kota Sidempuan sejumlah 31,39% dan paling banyak menderita Perempuan sejumlah 30,36%. Tujuan penelitian ini untuk mengetahui pengaruh pemberian rebusan air kulit semangka terhadap penurunan kadar hipertensi pada Wanita usia subur di Kota Sidempuan. Jenis penelitian yang digunakan bersifat *Pre-Experimental* yaitu rancangan yang terdapat hanya satu kelompok atau satu kelas yang diberikan pra dan pasca uji dengan desain *One Group pretest-post test* Populasi dalam penelitian ini sebanyak 10 responden dan sampel yang diambil dengan menggunakan pendekatan *Purposive Sampling* yaitu sebanyak 10 orang. Metode pengumpulan data yaitu data primer, data sekunder dan tersier. Analisa data yang digunakan yaitu analisis univariat dan bivariat dengan uji paired T-test. Hasil penelitian menunjukkan bahwa hasil Analisa univariat penelitian ini adalah tekanan darah sebelum terdapat perubahan yaitu 3 responden yang mengalami penurunan tekanan darah <20 mmHg, 3 responden yang mengalami penurunan <130 mmHg, 4 dan responden yang mengalami penurunan <140 mmHg. Berdasarkan uji T-test diperoleh hasil perhitungan *p value* = 0,000 < α = 0,05, berarti terdapat pengaruh yang signifikan pemberian rebusan air kulit semangka terhadap penurunan kadar hipertensi pada Wanita usia subur. Kesimpulan ada Pengaruh Pemberian Rebusan Air Kulit Semangka Terhadap Penurunan Kadar Hipertensi Pada Wanita Usia Subur di Kota Sidempuan. Saran Diharapkan bagi tenaga Kesehatan setempat untuk melakukan penyuluhan tentang rebusan air kulit semangka secara menyeluruh dan berkelanjutan di Kota Sidempuan.

Kata Kunci : Rebusan Air Kulit Semangka, Hipertensi, wanita usia subur

ABSTRACT

Background: Hypertension or high blood pressure is often called the Silent Killer, because this disease appears without showing clear symptoms. According to the number of hypertension in Indonesia it is 34.1%, in North Sumatra it is 29.19%, for Sidempuan City it is 31.39% and women suffer the most at 30.36%. The aim of this research was to determine the effect of giving boiled watermelon rinds on reducing hypertension levels in women of childbearing age in Sidempuan City. The type of research used is Pre-Experimental, namely a design in which only one group or one class is given pre and post-test with a One Group pretest - post test design. The population in this study was 10 respondents and the sample was taken using a Purposive Sampling approach, namely as many as 10 people. Data collection methods are primary data, secondary and tertiary data. The data analysis used is univariate and bivariate analysis with the paired T-test. The research results showed that the results of the univariate analysis of this study were blood pressure before there was a change, namely 3 respondents who experienced a decrease in blood pressure of <20 mmHg, 3 respondents who experienced a decrease of <130 mmHg, 4 respondents who experienced a decrease of <140 mmHg. Based on the T-test, the calculation results obtained were *p value* = 0.000 < α = 0.05, meaning that there was a significant effect of giving boiled watermelon rind water on reducing hypertension levels in women of childbearing age. The conclusion is that there is an effect of giving boiled water from watermelon rinds on reducing hypertension levels in women of childbearing age in Sidempuan City. It is hoped that local health workers will provide comprehensive and sustainable education about boiling water from watermelon rinds in Sidempuan City.

Keywords: Boiled water from watermelon rinds, hypertension, women of childbearing age

INTRODUCTION

Hypertension is one of the most common and most common cardiovascular diseases in people who have blood pressure above normal. Cardiovascular disease is a major health problem in developed and developing countries and is the number one cause of death in the world every year. Hypertension is also known as a risk factor for diseases such as heart disease, kidney failure, diabetes and stroke. This disease is often called the silent killer because it often goes without complaints, so sufferers do not know they have hypertension. In women of childbearing or reproductive age, hypertension can be caused by the use of hormonal contraception, which can be known to use hormonal contraception containing the hormone estrogen which can also increase blood pressure.

According to the World Health Organization (WHO) in 2021, cardiovascular disease in America is the main factor in death, around 29% of >2 million deaths in 2019, increased blood pressure is the main cause of Cardiovascular Disease (CVD), around 23% of adult men and 35 % of women in America suffer from hypertension and are diagnosed, people in America take hypertension medication when blood pressure reaches 140/90mmHg (Campbell et al. 2023). Hypertension is also called the silent killer because it often shows no symptoms, hypertension in Indonesia is a health problem with a high prevalence in a number 32.4% (Wahyu Ningsih 2021).

Based on Riskesdas data (2018), hypertension in Indonesia has a high prevalence, namely 34.1%, with South Kalimantan province being the highest province suffering from hypertension at 44.1% and Papua being the lowest province suffering from hypertension at 22.2% (ROHMANIAH 2023). The number of hypertension sufferers in North Sumatra is 29.19%, for Deli Serdang it is 31.39%, the most people suffering from hypertension are women with 30.63%, while the number of hypertension in men is 27.70%, for the highest age can be seen at the age of 18-24 years as many as (13.2%), at the age of 25-34 years as many as (20.1%), at the age of 35-44 years (31.6%) While at the age of 45-54 years as many (45.3%) (Riskesdas 2018).

Women of childbearing age (WUS) are women who reproduce from the age of 15-49 years. The causes of hypertension are divided into 2, namely causes that cannot be changed, such as age, family history and gender (Rohmaniah, Nu'im Haiya, and Ardian 2023). Meanwhile, things that can be changed include smoking habits, not eating enough, using hormonal contraception and stress. Women of

childbearing or reproductive age who use hormonal contraception generally experience an increase in blood pressure, because hormonal contraceptives contain the hormone estrogen which can increase blood pressure (Maring, Purnawan, and Ndun 2022).

Tropical countries have lots of watermelon plants where watermelon can be used as an immunostimulant. The white part of the watermelon rind contains unusual amounts of amino acids such as citrulline which in the body turns into arginine which functions to regulate blood pressure in the body (Arianto et al. 2020). In Indonesia, this part is still less popular because local people only consume red or yellow watermelon flesh, even though the white layer of the skin contains more L-citrulline and L-arginine (Aderiye et al. 2020).

Based on the results of research by Dina Ratna Sari, Ahmad Qosim, Nopri Padma Nudesti (2023) entitled "The Effect of Giving Watermelon Juice Therapy on Reducing Hypertension in the Elderly" results were obtained where 27 elderly mothers were given 300 grams of watermelon juice, given twice a day. Before being given watermelon juice, 27 respondents had blood pressure of 140 mmHg, with systole 130-170 mmHg and diastole 80-100 mmHg (Agustin et al. 2021). Meanwhile, after being given watermelon juice, the blood pressure was 130 mmHg with systole 120-150 mmHg and diastole 70-90 mmHg. Based on the Wilcoxon test, it was obtained that the sig or p-value was 0.000 < 0.05, so there was an effect of giving watermelon juice therapy on reducing hypertension in elderly mothers (Sari, Qosim, and Nudesti 2023).

Based on the results of research conducted by Ni Made Ari Sukawati, Susilawati, Anggraini, Zarma (2023) entitled "The Effect of Giving Watermelon Juice on Reducing Blood Pressure in Elderly Hypertension Sufferers" results were obtained where 1000 elderly mothers were given watermelon juice. grams without water and sugar for 7 days, given 2 times a day before breakfast and evening. Before being given watermelon juice it was 156 mmHg with systole 140-160 mmHg and diastole 83-98 mmHg (Fandizal, Sani, and Astuti 2020). Meanwhile, after being given watermelon juice, the blood pressure was 138 mmHg with systole 120-144 mmHg and diastole 72-90 mmHg. Based on the results of the Wilcoxon statistical test, it was obtained that the sig or p-value was 0.000 < 0.05, so there was an effect of giving watermelon juice on reducing blood pressure in the elderly (Arianto et al. 2020).

The white layer on the watermelon rind or what is usually called the albedo contains 60% citrulline. There is more citrulline in the rind of the watermelon than in the flesh of the watermelon itself.

In the rind of red watermelon with seeds there is 2.782% of the juice, while in the rind of non-seed watermelon there is 2.312% and the protein in the rind of red watermelon with seeds is 0.041% and in the rind of red watermelon without seeds there is 0.025%. From this comparison we can see that watermelon rind is better red seeds compared to non-seed watermelon rind, where watermelon rind with seeds contains more protein, citrulline contains amino acid compounds and amino acids are protein. So the rind of red seeded watermelon contains more citrulline (6)

RESEARCH METHODS

This type of research is pre-experimental, namely a design in which only one group or class is given a pre- and post-test with a One Group pretest - post test design. This is carried out on one group without a control or comparison group. The research was conducted in Sidempuan City in 2024. This research was conducted by the researchers themselves because they wanted to find out whether there was an effect of giving boiled watermelon rinds on reducing hypertension in women of childbearing age in the village of Sei Mecirim Hamlet III, many of whom still do not know that there are other alternatives besides taking medication. Pharmacology to reduce hypertension, you can use herbal medicines such as boiled watermelon rinds to reduce hypertension levels (Setyawanto 2017). The research time was from August–October 2024 starting from submitting the proposal title, making the proposal, research until the final hearing. Population is the total number of members of a scope whose characteristics are known based on inference and generalization. The population in this study was all women of childbearing age from 15 - 49 years old who experienced hypertension from August to October in Sidempuan City totaling 72 people. The population of women of childbearing age aged 35-45 years who suffered from hypertension from August to October was 35 people. And there were 10 people who were willing to be respondents. How to make boiled watermelon rind water using 250 grams of watermelon which is boiled using 200 ml of water which is boiled for 20 minutes, then the boiled water is cooled and consumed at a temperature of 30 degrees Celsius and this is consumed 3 times a day, in the morning after eating, at noon, and at night. Data collection techniques use primary data and secondary data using observation sheets. The data analysis used was univariate and bivariate data analysis using the Wilcoxon test.

RESULTS

Univariate Analysis

Table 1

Distribution based on giving boiled water from watermelon rinds (*Citrullus Vulgaris*) on reducing hypertension levels in women of childbearing age

Pemberian Air Kulit Semangka	f	%
Pagi	10	100
Sore	10	100

Based on table 1, it can be seen that the distribution of the frequency of giving boiled watermelon rind water in the morning and evening was given to the same person by 10 respondents (100%) or all respondents

Table 2

Distribution Based on Blood Pressure Before (Pretest) Giving Boiled Watermelon Peel (*Citrullus Vulgaris*) Water to Reduce Hypertension Levels in Women of Childbearing Age

TD Pre_ test (mmHg)	Jumlah	
	F	%
130/90	1	10.0
130/100	1	10.0
140/90	1	10.0
140/100	4	40.0
150/90	2	20.0
150/100	1	10.0

Based on table 2, it can be seen that the frequency distribution of blood pressure before consuming boiled watermelon rind water amounted to 10 respondents (100%), with the blood pressure category of 130/90 mmHg amounting to 1 respondent (10.0%), the 130/100 mmHg category amounting to 1 respondent (10.0%), the 140/90 mmHg category had 1 respondent (10.0%), the 140/100 mmHg category had 4 respondents (40.0%), the 150/90 mmHg category had 2 respondents (20.0%), the 150/100 mmHg category had 1 respondent (10.0%).

Table 3
Distribution based on blood pressure after (posttest) administration of boiled water from watermelon rinds (*Citrullus Vulgaris*) to reduce hypertension levels in women of childbearing age

TD Post_ test (mmHg)	Jumlah	
	F	%
120/80	3	30.0
130/100	3	30.0
140/90	3	30.0
140/100	1	10.0

Based on table 3, it can be seen that the frequency distribution of blood pressure after consuming boiled watermelon rind water totaled 10 respondents (100%), with the blood pressure category 120/80 mmHg totaling 3 respondents (30.0%), the 130/100 mmHg category totaling 3 respondents (30.0%), the 140/90 mmHg category had 3 respondents (30.0%), the 140/100 mmHg category had 1 respondent (10.0%).

Bivariate Analysis

Table 4
Rank Test Results Based on the Effect of Boiled Watermelon Peel Water on Reducing Hypertension Levels in Women of Childbearing Age in Sei Mencirim Village, Hamlet III, Deli Serdang Regency

Posttest – Pretest	N	Mean Rank	Sum of Ranks
Negative Ranks	10 ^a	5.50	55.00
Positive Ranks	0 ^b	0.00	0.00
Ties	0 ^c		

Based on table 4. above, it shows the ranking value of 10 respondents before and after giving boiled watermelon rind water, which is a negative rank, namely 10 respondents

Table 5
Effect of Boiled Watermelon Peel Water on Reducing Hypertension Levels in Women of Childbearing Age in Sei Mencirim Village, Hamlet III, Deli Serdang Regency

	Posttest – Pretest
Z	-3.051 ^a
Asymp. Sig. (2-tailed)	0.002

Based on table 5, it can be seen that blood pressure in women of childbearing age with

hypertension who were given treatment obtained a value of $p = 0.002$, which means $p = <0.05$. This means that consuming boiled watermelon rind water has an effect on reducing hypertension levels in women aged 35-45 years. . In conclusion, there is an effect of giving boiled water from watermelon rinds on reducing hypertension levels in women of childbearing age in Sei Mencirim Village, Dusun III, Sunggal District, Deli Serdang Regency.

DISCUSSION

Giving boiled water from watermelon rinds (*Citrullus Vulgaris*) to reduce hypertension levels in women of childbearing age in Sei Mencirim Village, Hamlet III, Sunggal District, Deli Serdang Regency.

Referring to the test results, it can be explained that the frequency of consuming boiled watermelon rind water is directly proportional to changes in blood pressure in women of childbearing age aged 35-45 years who suffer from hypertension, meaning that the more optimal it is for women suffering from hypertension to consume boiled watermelon rind water, the better. Likewise, if it is not optimal for women suffering from hypertension to consume boiled water from watermelon rinds then there will be no change (Arifuddin 2024).

The results of the research are in line with research by Yohana Adibah et al (2020) entitled "The Effect of Giving Watermelon Juice on Changes in Blood Pressure in Hypertension Sufferers". The average initial diastolic blood pressure of respondents was 99 mmHg. Then the average final systolic blood pressure of the respondents was 130 mmHg and the average final diastolic blood pressure of the respondents was 82 mmHg. There was a change in the blood pressure of respondents before and after consuming watermelon juice for 7 days, namely with a p-value of 0.000 (<0.005) (Yuliani 2020).

The results of the research are in line with the research of Suhaman, Septiana, Rosmiyati (2021) entitled "Watermelon Juice Influences Lowering Blood Pressure in Elderly Hypertension Sufferers" based on the results of this research the average value of blood pressure a month of giving watermelon juice is 150 while the average value of pressure blood pressure after giving watermelon juice was 119. The decrease in blood pressure after giving watermelon juice, respondents always consumed watermelon juice regularly which had been given for 7 consecutive days, so their blood pressure decreased. Watermelon has a high water and potassium content so it can neutralize blood pressure (Suharman and Rosmiyati 2021).

Consuming non-pharmacological drugs in women who suffer from hypertension is a safe alternative before consuming pharmacological drugs. Consuming boiled water from watermelon rinds is very good to apply in everyday life because the content of boiled water from watermelon rinds is very high and is good for a person's health (Wade 2023).

The skin/pulp of watermelon contains a lot of citrulline. Citrulline will react with body enzymes when consumed, then be converted into arginine which is a non-essential amino acid that is beneficial for the heart, circulatory system and immune system. Apart from that, watermelon rind is also rich in vitamins, minerals, enzymes and chlorophyll, which have many health benefits. The contents of watermelon rind include vitamin E and vitamin C, which are quite a lot in watermelon rind and can be used to soften skin and hair. and can make hair shiny (Yanita 2022).

Watermelon contains >95% water. In addition, watermelon also has many medicinal properties, because it contains various medicines, because it contains various minerals and amino acids that are important for the human body (Sari et al. 2023).

Several research results indicate that watermelon juice can also be a medicine to reduce cholesterol levels in the blood of people with dyslipidemia (excess fat content). Watermelon contains many anti-oxidants which are useful in protecting the body from cancer and heart problems. Lycopine is found in many red fruits and vegetables (Furngili and Kustriyani 2023).

Based on the results of research conducted by Ni Made Ari Sukawati, Susilawati, Anggraini, Zarma (2023) entitled "The Effect of Giving Watermelon Juice on Reducing Blood Pressure in Elderly Hypertension Sufferers" results were obtained where 1000 elderly mothers were given watermelon juice. grams without water and sugar for 7 days, given 2 times a day before breakfast and evening. Before being given watermelon juice it was 156 mmHg with systole 140-160 mmHg and diastole 83-98 mmHg. Meanwhile, after being given watermelon juice, the blood pressure was 138 mmHg with systole 120-144 mmHg and diastole 72-90 mmHg. Based on the results of the Wilcoxon statistical test, it was obtained that the sig or p-value was $0.000 < 0.05$, so there was an effect of giving watermelon juice on reducing blood pressure in the elderly (Sukawati, Susilawati, and Anggraini 2023).

The results of research by Yufriza Umrah, Cholic Harun Rosjidi and Kemal Idris (2022) entitled "The Effect of Watermelon Juice in Lowering Blood

Pressure in Hypertension Patients" showed that 25 people were given 250 grams of watermelon juice, given once a day in the afternoon. Before being given watermelon juice, 27 respondents had blood pressure of 153 mmHg, with systole 140-170 mmHg and diastole 90-110 mmHg. Meanwhile, after being given watermelon juice, the blood pressure was 132 mmHg with systole 120-140 mmHg and diastole 80-100 mmHg. Based on the Wilcoxon statistical test, a sig-p value of $0.00 < 0.05$ was obtained, indicating that watermelon juice can effectively reduce blood pressure in hypertension sufferers (Air and Padang n.d., 2023).

Similar research was also conducted by Suharman, Septiana and Rosmiyati (2021) entitled "Watermelon Juice Influences Lowering Blood Pressure in Hypertension Sufferers in the Elderly". given watermelon juice, blood pressure was 150 mmHg and after treatment with watermelon juice, blood pressure was 119 mmHg. Based on the Wilcoxon statistical test, it was obtained that the Sig-p value was $0.000 < 0.05$, there was an effect that consuming watermelon juice could effectively reduce blood pressure in hypertension sufferers (Suharman and Rosmiyati 2021).

Giving boiled watermelon rind water is more influential because it is accompanied by changes in a healthy and balanced lifestyle, one of which is by consuming foods low in fat and rich in fiber, reducing excessive consumption of salt, reducing ready-to-eat foods and eating more fruit and vegetables such as watermelon (Furngili and Kustriyani 2023).

There were also 10 respondents who had no effect when consuming boiled watermelon rind water, this was because they did not maintain a good diet, they were told not to consume too much salt, they took the initiative to consume salted fish because they couldn't eat it if it didn't taste salty, then they he also often eats ready-to-eat food, in the midst of his tired activities he also does not consume this drink regularly, he often asks to drink this decoction in stages, not 300 cc at a time, this can affect the benefits of boiled watermelon rind water.

CONCLUSION

The blood pressure of respondents before being given boiled watermelon rind water to reduce hypertension levels in women of childbearing age, namely the highest blood pressure starting from blood pressure 150/100 mmHg, there was 1 respondent, and the lowest starting from blood pressure 130/90 mmHg, there was 1 respondent. while blood pressure was the most common at 140/100 mmHg, as many as 4 respondents.

SUGGESTION

It is hoped that women of childbearing age who experience hypertension should consume watermelon rind boiled water to lower blood pressure, and women of childbearing age should also limit the type of intake that can interfere with increasing blood pressure. Reduce salt consumption, limit eating fat, limit fast food and eat more fresh fruit and vegetables that contain fiber.

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