The Effect Of Watermelon On Lowering Blood Pressure In Pregnant Women With Hypertension In Complex Cases In Campaka Purwakarta In 2026

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Abstract.
Pregnancy with risk high , such as hypertension , can cause more complications big for mother and fetus during pregnancy , childbirth and postpartum More from 90 percent death Mother caused by complications obstetrics during pregnancy , childbirth , and postpartum . Consumption fruit watermelon can lower pressure blood High . A pre-experimental study with a one-group pretest-posttest design examined the effect of watermelon supplementation on pregnant women with hypertension. Thirty respondents were selected using total sampling. The pregnant women were given an intervention involving watermelon consumption for 7 days.
The results of the statistical test prove that based on the Wilcoxon Signed Rank Test output , the systolic blood pressure value is Z = -4.784, while the diastolic blood pressure value is Z = -4.649 with an Asymp.Sig (2-tailed) value of 0.000. Because the p value <0.05, it can be concluded that there is a statistically significant difference between systolic and diastolic blood pressure before and after the intervention.
***Keywords** : Watermelon, Blood Pressure, Pregnant Women and Hypertension.*

I. INTRODUCTION

Pregnancy, childbirth postpartum and neonates are conditions physiological that can endanger mother and baby , even can cause death . Estimated at 80-90% of pregnancies proceeded normally, but 10-12 experienced problem or even become pathological (Abdullah et al. , 2024)

Pregnancy with risk high , such as hypertension , can cause more complications big for mother and fetus during pregnancy , childbirth and postpartum More from 90 percent death Mother caused by complications obstetrics during pregnancy , childbirth , and postpartum .

Based on WHO data (2022) the number incident preeclampsia worldwide ranges from 0.51% to 38.4%. In developed countries , the figure incident preeclampsia is at 6 %-7%. Based on Profile data Indonesian Health in 2023

Hypertension be one of factor risk main occurrence preeclampsia , hypertension That Alone can triggered by various factors , including habits smoking , excessive salt consumption , blood levels stress or high anxiety , as well as obesity .

Management hypertension in pregnancy can done through approach pharmacological and non-pharmacological . In pharmacological , control pressure blood in the mother pregnant done with giving drug antihypertensives , including methyldopa , clonidine, nifedipine , and labetalol.

Treatment non-pharmacological utilise ingredients natural that has effect stabilize pressure blood , one of them is potassium. Potassium plays a role important in help guard sodium and fluid balance in the body contributing body lower pressure blood in a way experience without need drugs pharmacological (Hasanah et al. , 2022) Potassium has diuretics that can reduce blood volume so that pressure blood decrease

Watermelon is fruit rich in vitamins, easy found , and has a fresh and delicious taste . In addition , watermelon contains potassium and the amino acid citrulline , functions For stabilize pressure blood . In addition , watermelon contain carotenoids , which are capable of protect wall arteries and veins of hardening , so that pressure blood can decreased . (Sarfika & Saifudin , 2024).

II. METHOD

Study This use study quantitative with design Pre-Experimental . This method is form study experiment simple that is not involving group control . Research done For know whether giving fruit watermelon

influential to decline pressure blood in the mother pregnant women who experience hypertension

The research design applied in in study This is a one group pretest-posttest design design This No used group comparator or group control . However , researchers still do measurement initial (pretest) before intervention given , so that changes that occur after treatment can observed and compared with condition beginning . Approach This allows researchers evaluate effect giving fruit watermelon to decline pressure blood in the mother pregnant hear hypertension .

In the research This is the population used covers all Mother pregnant women who experience hypertension in Campaka Purwakarta Regency , with total number of 30 mothers pregnant .

Study This use Total Sampling technique , namely method taking sample in which all member population made into sample research (Sugiyono , 2020) This method used by researchers For enter all over Mother pregnant with hypertension in the Community Health Center area Munjul, Purwakarta Regency, totaling 30 people in total taken as sample For get a better picture accurate about condition .

III. RESULTS AND DISCUSSION

Table 1 Distribution of Average Frequency of Systolic Blood Pressure Before and After Watermelon Fruit Intervention in Campaka Purwakarta in 2026

Systolic	N	Mean	Median	Min	Max	Std. Deviation
Pre-Experiment	30	150.13	150	140	159	5,594
Post-Experiment	30	123.80	121.50	109	152	10,108

Table 1 shows a decrease in systolic blood pressure in the group that received the cut watermelon intervention. The average systolic blood pressure was 150.13 mmHg before the intervention, which then fell significantly to 123.8 mmHg after the intervention. A decrease was also seen in the median value from 150 mmHg to 121.5 mmHg. The data range (minimum and maximum values) also changed, where the lowest blood pressure fell from 140 mmHg to 109 mmHg, while the highest blood pressure fell from 159 mmHg to 152 mmHg. While the standard deviation value increased from 5.594 to 10.108, this value shows that there is greater variation in the data after the intervention. These results show a decrease in systolic blood pressure in respondents after being given watermelon.

The results of the study showed that the average systolic blood pressure before the intervention was 150.13 mmHg. After the intervention for 7 days, researchers measured blood pressure again. The results of the blood pressure measurements of pregnant women after the intervention showed a significant decrease, with the average systolic blood pressure being 123.80 mmHg.

According to Juliastuti et al. (2021), the high potassium content in watermelon offers various health benefits, including helping maintain heart function, stabilizing blood pressure, treating mouth ulcers, supporting kidney detoxification, and improving overall heart performance. Potassium plays a role in lowering blood pressure by reducing sodium excretion in the urine, thus providing an effect similar to that of diuretics in regulating body fluid balance.

This is in line with research by Adisti et al. (2025), which stated that giving watermelon juice could lower blood pressure in pregnant women with hypertension. The results showed a decrease in systolic blood pressure from an average of 147.2 mmHg to 133.5 mmHg. This indicates that watermelon juice is effective in lowering blood pressure in pregnant women.

Systolic	N	Mean	Median	Min	Max	Std. Deviation
Pre-Experiment	30	93.43	92.5	90	102	3,569
Post-Experiment	30	81.07	80.0	70	95	6,523

Table 2 Distribution of Average Frequency of Diastolic Blood Pressure Before and After Watermelon Fruit Intervention in Campaka Purwakarta in 2026

Table 2 shows a decrease in diastolic blood pressure in the group that received the cut watermelon intervention. The average diastolic blood pressure was 93.43 mmHg before the intervention, which then dropped significantly to 81.07 mmHg after the intervention. A decrease was also seen in the median value from 92.5 mmHg to 80.0 mmHg. The data range (minimum and maximum values) also changed, where the lowest blood pressure fell from 90 mmHg to 70 mmHg, while the highest blood pressure fell from 102 mmHg to 95 mmHg. While the standard deviation value increased from 3.569 to 6.523, these results show that there was greater variation in the data after the intervention. These results show that there was a decrease in diastolic blood pressure in respondents after being given watermelon.

The results of the study showed that the average diastolic blood pressure was 93.43 mmHg. After seven days of intervention, researchers measured blood pressure again. The results of the intervention showed a significant decrease in blood pressure among pregnant women, with the average diastolic blood pressure reaching 81.07 mmHg.

According to Juliastuti et al. (2021), the high potassium content in watermelon offers various health benefits, including helping maintain heart function, stabilizing blood pressure, treating mouth ulcers, supporting kidney detoxification, and improving overall heart performance. Potassium plays a role in lowering blood pressure by reducing sodium excretion in the urine, thus providing an effect similar to that of diuretics in regulating body fluid balance.

This aligns with research by Adisti et al. (2025), which found that watermelon juice can lower blood pressure in pregnant women with hypertension. The results showed a decrease in diastolic blood pressure from an average of 91.5 mmHg to 87.38 mmHg. This suggests that watermelon juice is effective in lowering blood pressure in pregnant women.

Table 3 Normality Test of Blood Pressure Data of Pregnant Women with Hypertension Before and After Watermelon Consumption Intervention in Campaka Purwakarta in 2026

Systolic	Df	Sig	Information
Experiment Pre-Test Systolic	30	0.038	Abnormal
Post Test of systolic experiment	30	0.006	Abnormal
Pre-Test Experiment Diastolic	30	0.001	Abnormal
Diastolic Experiment Post-Test	30	0.000	Abnormal

Source: Results of Normality Test using *Shapiro-Wilk*

Based on the data presentation in Table 3, the results of the normality test using the Shapiro-Wilk method show that all research variables have a significance value below the threshold of 0.05, where the pre-test systolic experiment obtained a value of 0.038, at the post-test stage the systolic experiment obtained a value of 0.006, at the pre-test stage the diastolic experiment obtained a value of 0.001 and at the post-test the diastolic experiment obtained a value of 0.000. In accordance with the statistical decision-making criteria, a significance value smaller than 0.05 indicates that the blood pressure data in pregnant women with hypertension at the Munjul community health center in this study is not normally distributed.

These non-normally distributed values indicate that the use of parametric statistics is considered inadequate for the research. Therefore, to maintain the validity and accuracy of the bivariate analysis results, a non-parametric statistical approach must be used. To determine the difference in high blood pressure before and after the intervention, the Wilcoxon test will be used.

***Wilcoxon* Test for Analysis of Changes in Blood Pressure of Pregnant Women with Hypertension Before and After Watermelon Consumption Intervention in Campaka Purwakarta in 2026**

Research group	*Negative Ranks*	*Positive Ranks*	*Ties*	*Z-score*	*Asymp.sig. (2-tailed)*
Posttest Systolic Blood Pressure-Pretest Systolic Blood Pressure	30	0	0	-4,784	.000
Posttest Diastolic Blood Pressure-Pretest Diastolic Blood Pressure	28	1	1	-4,649	.000

Source: *Wilcoxon Signed Ranks Test Results*

Based on the data presentation in Table 4, the results of *the Wilcoxon signed rank test* indicate a significant change in the reduction of high blood pressure in this study. In the posttest and pretest systolic blood pressure, it was noted that all respondents were in the negative rank category, which means that 100% of pregnant women experienced a decrease in systolic blood pressure after being given the intervention without any respondents experiencing an increase *(positive ranks)* or a constant condition *(Ties)* . Statistically, this is supported by *the Asymp.Sig (2-tailed) value* of 0.000 ($p < 0.05$), which confirms that the intervention of giving sliced watermelon is significantly effective in reducing high blood pressure.

Despite a significance value of 0.000 ($p<0.05$) for post- and pre-test diastolic blood pressure, changes showed significant variability. Twenty-eight respondents experienced a decrease, but one respondent experienced an increase *(Positive Ranks)* , and one respondent showed no change at all.

Low potassium consumption can increase blood pressure. A diet high in potassium found in vegetables and fruits can also reduce the risk of heart disease by preventing arterial thrombosis, atherosclerosis, and medial hypertrophy of the arterial wall (Hasanah et al., 2022). Another advantage of watermelon, besides its high potassium content that can lower high blood pressure, is its lycopene content, a pigment that gives the fruit's flesh its red color, and the amino acid citrulline, which is abundant in the white flesh at the base of the fruit. Both types of phytochemicals play an important role in lowering blood pressure by supporting blood vessel function and improving blood circulation more optimally (Al Mauidzoh & Ek Putri, 2023). As a producer of red pigment, the content of vitamin A, vitamin C, and lycopene in watermelon also functions to neutralize free radicals and reduce cell damage. This is because watermelon has high oxidants, which are exogenous antioxidants derived from plants.

This aligns with research by Lely et al. (2025), which found that watermelon juice was effective in lowering blood pressure in pregnant women with hypertension. The study used the *Wilcoxon test* and obtained a significant p-value of 0.000 (<0.05), indicating that watermelon juice is effective in lowering blood pressure in pregnant women.

IV. CONCLUSION

Based on the results of research conducted on the effect of giving sliced watermelon on reducing blood pressure in pregnant women with hypertension, it can be concluded that:

Before the intervention of consuming sliced watermelon, the average systolic blood pressure was 150.13 mmHg and the diastolic blood pressure was 93.43 mmHg. Meanwhile, after the intervention, the average systolic blood pressure in pregnant women was 123.80 mmHg and the diastolic blood pressure was 81.07 mmHg.

Wilcoxon test results showed that the administration of sliced watermelon had an effect on reducing systolic and diastolic blood pressure in pregnant women with hypertension. This was statistically supported by *the Asymp.Sig (2-tailed) value* of 0.000 ($p<0.05$), which confirmed that the intervention of administering sliced watermelon was significantly effective in reducing high blood pressure.

V. Thank-you note

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