

Application Of Rosella Flower Therapy In Reducing Blood Pressure Among Hypertension Sufferers

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Abstract: Hypertension is a chronic condition characterized by increased blood pressure, this can disrupt blood flow, damage blood vessels, even cause degenerative diseases, and even death. Rosella flowers are also one of the non-pharmacological therapies that can help stabilize blood pressure. This study aims to identify the effect of giving rosella flower decoction therapy on reducing blood pressure in hypertensive patients. This type of research is descriptive with a case study approach method. Data collection techniques were carried out by interviews, observations and looking at blood pressure results before and after the rosella flower decoction was given. The respondents in this study were two hypertensive patients with the criteria of being willing to be respondents and cooperative, patients with mild hypertension (degree 140-159 mmHg and diastole 90-99 mmHg) and age 45-55 years. The results showed that there was a decrease in blood pressure in subjects I from 158/109 mmHg to 131/81 mmHg and subject II from 154/93 mmHg to 134/86 mmHg. This study proves that the application of rosella flower decoction is effective in lowering blood pressure in hypertensive patients. It is hoped that this research can be used as one of the interventions in carrying out non-pharmacological treatments in lowering blood pressure in hypertensive patients.

Keywords: Blood Pressure, Rosella Flower, Non-Pharmacological Therapy, Case Study

INTRODUCTION

Hypertension is a chronic condition marked by elevated blood pressure above 140/90 mmHg, which forces the heart to work harder and may lead to complications such as cardiovascular disease, kidney damage, and stroke (Sari, 2022; WHO, 2023). Globally, hypertension affects around 970 million people (26.4%), with high prevalence in Asia, including China and India (Keswara et al., 2018; 2021). In Indonesia, prevalence increased from 25.8% in 2013 to 34.1% in 2018, with more than 63 million cases and 472,218 deaths (Ministry of Health, 2019). In Aceh Province, 891,253 cases were reported, with Aceh Besar Regency accounting for 67,840 cases (Aceh Health Profile, 2022).

Symptoms include palpitations, blurred vision, headaches, chest pain, fatigue, and nosebleeds, which if

untreated may cause severe complications (Sari, 2022). Management can be pharmacological (Amlodipine, Captopril, Hydrochlorothiazide) or non-pharmacological (lifestyle modification, herbal therapy such as rosella flower) (Hartutik & Suratih, 2023).

Rosella (*Hibiscus sabdariffa* L.) contains flavonoids, anthocyanins, tannins, and organic acids that act as antioxidants, vasodilators, and diuretics, reducing blood pressure and improving vascular elasticity (Wijaya, Atmaja & Sri, 2020; Scott, 2021). Previous studies in Indonesia and abroad have shown rosella tea to significantly lower systolic and diastolic blood pressure (Braviero, Nawang & Khaerul, 2025; Rizqi, Dani & Santoso, 2022).

Based on preliminary data from Posbindu cadres in Meunasah Tutong Village, 17 out of 28 adults aged 45–55

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years were hypertensive. Two subjects (Mrs. Y and Mrs. D) were selected for case study observation. Both had histories of hypertension, poor diet, and limited physical activity, with initial blood pressure readings of 158/109 mmHg and 154/93 mmHg.

This study aims to evaluate the effectiveness of rosella flower decoction therapy in lowering blood pressure among hypertensive patients in Meunasah Tutong Village, Montasik District, Aceh Besar Regency.

METHOD

This study used a descriptive case study design to identify the effect of rosella flower decoction therapy on reducing blood pressure in hypertensive patients. The respondents were two patients with mild hypertension (systolic 140–159 mmHg, diastolic 90–99 mmHg) aged 45–55 years, who met the inclusion criteria of being cooperative and willing to participate. Data were collected through interviews, direct observation, and blood pressure measurements before and after the administration of rosella flower decoction. The results were analyzed descriptively to compare blood pressure values before and after therapy.

RESULT

The study involved two respondents with mild hypertension. Blood pressure measurements before and after rosella flower decoction therapy showed a decrease in both subjects.

Tabel 1: Blood Pressure Before and After Rosella Therapy

Respondent	Before Therapy (mmHg)	After Therapy (mmHg)	Change
Subject I	158/109	131/81	↓ 27/28
Subject II	154/93	134/86	↓ 20/7

The results demonstrate that rosella flower decoction therapy effectively reduced blood pressure in both respondents. The decrease in systolic and diastolic values suggests that rosella may improve vascular function and reduce oxidative stress, contributing to blood pressure stabilization. These findings highlight the potential of rosella flower decoction as a complementary non-pharmacological intervention for hypertensive patients.

Based on the results of the study, it is known that after the administration of rosella flower therapy, the blood pressure of subjects I and II decreased from before, the decrease is as follows.

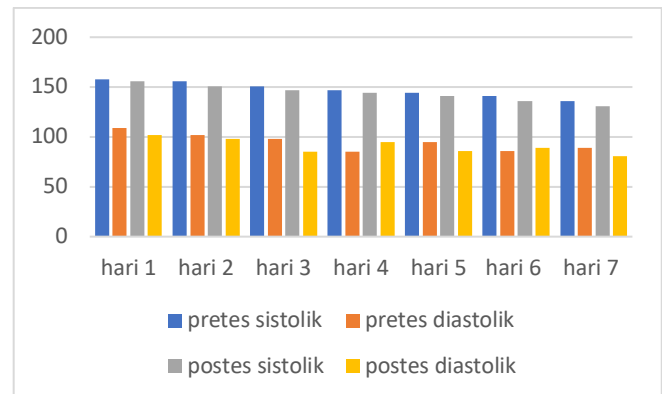


Diagram 1: Results of Blood Pressure Evaluation Before and After Giving Rosella Flower Therapy to Subject I

Based on Diagram 4.2, it is known that there was a gradual decrease in blood pressure in Subject I from the first day of the post test of 156/102 mmHg to the seventh day of the post test with the final result of blood pressure of 131/81 mmHg. Based on the results of the researcher's observations, the average blood pressure of the pre test of Subject I in 7 days of application was 147.57/94.86 mmHg, but after the application of rosella flower decoction, the average blood pressure of the post-test Subject I seemed to decrease to 143.71/90.86 mmHg.

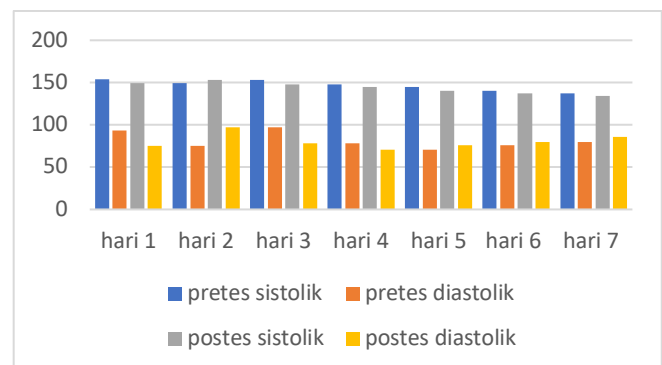


Diagram 2: Results of Blood Pressure Evaluation Before and After Giving Rosella Flower Therapy in Subjects II

Based on Diagram 2, it is known that there was a gradual decrease in blood pressure in Subject II from the first day of the post test of 149/75 mmHg to the seventh day of the post test with the final result of blood pressure of 134/86 mmHg. However, on the second day Subject II experienced an increase in blood pressure with the third day post test of 153/97 mmHg, this happened because the subjects consumed fatty foods and high in sodium. Based on the results of the researcher's observations, the average blood pressure of the pre test of Subject II for 7 days of application was 146.57/82.86 mmHg, but after the application of rosella flower decoction, the average blood pressure after the

test of Subject II seemed to decrease to 143.71/81.86 mmHg.

DISCUSSION

The results of the study on the application of rosella flower decoction in lowering blood pressure in patients with hypertension showed that there was a change in blood pressure in hypertensive patients between before and after the application of rosella flower decoction. In Subject I before the application was given, blood pressure was 158/109 mmHg and after the application of rosella flower decoction for 7 consecutive days also obtained the final blood pressure of 131/81 mmHg.

Meanwhile, in Subject II, before being given the application of rosella flower decoction, blood pressure of 154/93 mmHg was obtained and after 7 days of application, the final result was 134/86 mmHg.

This is in accordance with the research of Brahmantia, et al., (2024) that rosella flowers contain active compounds of organic acids and flavanoids that can reduce blood viscosity. If the viscosity of the blood has decreased, the heart's work will be lighter so that blood pressure will decrease. Dewantara & Widodo (2024) also found that rosella anthocyanins increase the elasticity of erythrocyte membranes, which has an impact on decreasing blood viscosity and improving blood flow smoothly. This condition directly contributes to a decrease in blood pressure in people with hypertension.

This is in accordance with research conducted by Braviero, Nawang & Khaerul, (2025). Implementation of Rosella Tea Administration for Reducing High Blood Pressure with Hypertension in Kebon Pal Village, Rosella tea administration therapy can lower blood pressure in Mrs. K with 134/82 mmHg and Mrs. A with 136/83 mmHg. This study was carried out for 7 days by consuming 5 grams of rosella flower petals boiled with 200ml of water drunk every morning. The results of this application can lower blood pressure from high blood pressure hypertension degree I to normal-high blood pressure. It can be concluded that Mrs. K's blood pressure before the administration of rosella tea was 148/93 mmHg and Mrs. A was 146/92 mmHg. After the administration of rosella tea therapy, there was an average decrease in systole of 12 mmHg and diastole of 10 mmHg. This study was conducted for 7 days to reduce blood pressure from high blood pressure, hypertension degree I to normal-high blood pressure.

These results are also in line with the research of Rahmawati, S., & Dewangga, A. (2024). Giving Rosella Flower Tea to Reduce Blood Pressure in Hypertensive Patients. The application of the application of roseella flower tea brewing is carried out for 7 days which is given in the morning by serving, namely 3 rosella flower candies are put into a glass that has been filled with hot

water of 200ml then filter the water after which the roseella flower brewing water is ready to drink. The blood pressure results before the administration of rosella tea Mrs. J 160/100 mmHg and Mrs. P 150/95 mmHg and after 7 days of administration there was a decrease in blood pressure of Mrs. J 150/90 mmHg and Mrs. P 137/89 mmHg. This is also supported by the research of Rizqi, Dani & Santoso (2022) Challenging the Effectiveness of Rosella Flower Tea Consumption (*Hibiscus Sabdariffa*) in Lowering Systolic Blood Pressure in Hypertensive Patients. This study was carried out for 7 days by giving 5 grams of dried rosella flower petals boiled with 200ml of water given in the morning. The mean value of blood pressure before treatment was 158.33 mmHg while the value after it was 143.33 mmHg. Which means rosella flower tea is effective in lowering systolic blood pressure in people with hypertension.

Based on the results of the study, several factors were found to cause the successful implementation of rosella flower decoction in this case study, namely the frequency of therapy, maintaining diet, family support, and education

Based on the frequency factor of therapy application, the administration of rosella flower decoction to subjects I and subject II is 1 time a day for 7 consecutive days as much as 200 ml effective in lowering blood pressure where in subject I before being given rosella flower decoction blood pressure is 158/109 mmHg and after giving 131/81 mmHg and in subject II before being given rosella flower decoction blood pressure is 154/93 mmHg and after giving it becomes 134/86 mmHg.

According to the researchers' assumptions, the application of rosella flower decoction given regularly at a consistent time can lower blood pressure in patients with hypertension.

This is evidenced by the research of Yuliani, M., & Prakoso, D. (2024). Application of Rosella Flower Tea to Reduce Blood Pressure in Hypertensive Patients, The application of the application of rosella flower tea brewing is carried out for 7 days which is given in the morning by way of presentation, namely 3 candies of rosella flowers are put into a glass that has been filled with hot water of 200ml then filter the water after that the roseella flower brewing water is ready to drink. The blood pressure results before the administration of rosella tea Mrs. J 160/100 mmHg and Mrs. P 150/95 mmHg and after 7 days of administration there was a decrease in blood pressure of Mrs. J 150/90 mmHg and Mrs. P 137/89 mmHg. experience a significant drop in blood pressure. This means that the application of rosella flower decoction is effective in lowering blood pressure in hypertensive patients.

In addition to the frequency of therapy, maintaining a diet is important in controlling hypertension, in subjects I it can be seen that there is a

decrease in blood pressure from day to day where subject I maintains a pattern so by reducing salt consumption and avoiding fatty foods.

According to the study's assumption, maintaining a diet by avoiding excessive and fatty salt consumption will help reduce high blood pressure.

According to Rahmatika (2023), people with hypertension are recommended to reduce salt intake because research shows a relationship between salt intake and a decrease in blood pressure, that is, if salt intake is limited, blood pressure will decrease. An appropriate diet is a management that needs to be considered by people with hypertension because it will greatly help control blood pressure (Chirmsilasari, et al., 2023).

In addition to maintaining a diet, family support also greatly influences. Where when the researcher performs therapy on the subject, it seems that the family always accompanies and the researcher is well received by the subject's family. Then the family always reminds the subject that every morning there will be a rosella flower decoction therapy.

According to the researchers' assumptions, family support is very important in the application of rosella flower decoction which can support the success factor of the application of rosella flower decoction because this support can also increase high motivation, thereby increasing the subject's compliance in the implementation of therapy that has an impact on the subject with maximum results

This is evidenced by the theory of Wati & Suryani (2024), the family's ability to provide care affects the health status of the family, in addition to family support is a form of interpersonal relationship that includes attitudes, actions, and acceptance of family members, so that family members are concerned. This is also evidenced by the theory of Hidayat & Lestari, (2024), about the relationship between family support and dietary adherence in hypertensive patients which states that there is a positive and significant relationship between family support and eating behavior in hypertensive patients so that patients can maintain their diet.

In addition to family support, subject knowledge is also very necessary to maximize the application of therapy, it can be seen from the educational background of subjects I and II where the last education of subjects I and II is high school which is a category of higher education.

According to the researchers' assumptions, education is important in improving health degrees. This is because education reflects a person's level of knowledge, where the better the understanding of the disease, the better the prevention, maintenance and treatment so that the disease is controlled.

This is evidenced by research by Sari & Handayani (2024), saying that respondents who are knowledgeable about hypertension better understand the disease suffered and know how to treat hypertension correctly. In addition, according to Lestari, M., & Prabowo, A. (2023). Education can also increase compliance factors, including optimism, hope, broad insight, the ability to control oneself in dealing with illness and in carrying out therapy.

In addition to the factors that support success, several factors that affect the occurrence of hypertension include age, gender, diet and genetics.

Age affects the occurrence of hypertension, from the results of the study, data were obtained on subject I aged 47 years and subject II aged 52 years, both subjects were classified as middle age. According to the researcher's assumption that, as you get older, blood pressure also tends to increase with age

This opinion is supported by Hapsari, N., & Wibowo, A. (2024), that the older you get, the more the risk of developing hypertension which begins to be seen in the 40-55 year age group by 8% and then increases in the age group of >55 years which is at a 68% risk of hypertension compared to the age group of <40 years.

In addition to age, gender also affects the occurrence of hypertension. Based on the research, data on the two subjects were obtained from the female gender. The researchers assumed that the increase in blood pressure in both subjects was also influenced by hormones.

This opinion is in line with research by Anggraini & Wulandari (2024) which explains that women have a higher risk of developing hypertension after entering menopause, which is around the age of 45 years and above. A decrease in the hormone estrogen leads to reduced protection against the elasticity of blood vessels, so blood pressure increases more easily.

Then another factor that affects hypertension is diet, based on the results of the study, it is known that subject II experienced an increase in blood pressure on the third day, where on the second day the patient's blood pressure was 149/75 mmhg while on the third day it was 153/97 mmhg, this is because subject II consumed fatty foods and contained excessive salt, while Subject I maintained his diet so that there was no increase in blood pressure during the 7 days of application. According to the researchers' assumption, diet can increase blood pressure, because in Indonesia people like to consume salt or the amount of sodium content in food which is one of the causes of hypertension.

According to Yunus (2023), salty foods contain high sodium so that they will bind a lot of fluids that flow with the blood to the heart. This condition will later burden the work of the heart, so it can increase blood pressure.

In addition to age, gender, diet, genetics also affect the occurrence of hypertension. Based on the research, it was obtained that subject II had a hereditary history of hypertension. Researchers assume that one of the causes of hypertension is due to genetic or hereditary factors of gene mutations inherited by parents.

According to Sutrisno & Lestari (2023), family history is one of the strongest risk factors for hypertension. A person who has a parent or sibling with hypertension is more likely to experience a similar condition due to the inheritance of genes that affect the function of blood vessels and the cardiovascular system.

CONCLUSION

This study demonstrates that rosella flower decoction therapy effectively reduced blood pressure in hypertensive patients. The decrease in both systolic and diastolic values indicates that rosella flower decoction can be considered as a complementary non-pharmacological intervention to help control hypertension. These findings highlight the potential of rosella therapy as an alternative approach in nursing practice to support blood pressure management.

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AUTHOR CONTRIBUTIONS

Conceptualization, Wiwin Haryati and Della Agustina; methodology, Wiwin Haryati; validation, Wiwin Haryati and Della Agustina; formal analysis, Wiwin Haryati; investigation, Wiwin Haryati; resources, Wiwin Haryati; data curation, Wiwin Haryati; writing—original draft preparation, Wiwin Haryati; writing—review and editing, Della Agustina; visualization, Wiwin Haryati; supervision, Della Agustina; project administration, Della Agustina. All authors have read and agreed to the published version of the manuscript.

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CONFLICTS OF INTEREST

The authors declare no conflict of interest. The funders had no role in the design of the study, in the collection, analyses, or interpretation of data, in the writing of the manuscript; or in the decision to publish the results.

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