



Implementation of Non Pharmacological Therapy with tomato juice to Reduction High Blood Pressure in Elderly With Hypertension

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ABSTRACT

Introduction: Hypertension or often called high blood pressure is a disorder of the circulatory system that causes blood pressure to increase to above the normal limit of 140/90 mmHg. Hypertension is a degenerative disease like diabetes mellitus which can attack anyone at a young or old age. Apart from that, hypertension is also a non-communicable disease but is still a global problem. The prevalence of hypertension cases in Indonesia is 63,309,620 people, while the death rate in Indonesia due to hypertension is 427,218 deaths. Patients with hypertension may benefit from non-pharmacological and pharmaceutical management interventions. Because 100 grams of tomatoes contain 100 grams of calories, 1 gram of protein, 4.2 grams of carbohydrates, 5 mg of calcium, 360 mg of potassium, 0.5 mg of iron, 40 mg of vitamin C, 1500 IU of vitamin A, 06 mg of vitamin B, and 94 g of water, tomatoes have the potential to lower blood pressure.

Objective: The aim of this case study is to carry out nursing care for elderly people with hypertension problems and to see the effect of implementing tomato juice therapy to help lower blood pressure.

Method: The method used is descriptive using a case study approach with the subject used as case study material being an elderly patient who has hypertension problems with a knowledge deficit. Patient and family data collection techniques include assessment stages, interviews, observation, physical examination, and also documentation studies.

Results: Knowledge deficit nursing diagnosis related to lack of exposure to information with diagnosis number D.0111, given tomato juice intervention for 3 days by consuming tomato juice twice a day, after the intervention was carried out, the patient's nursing problem was resolved with a marked decrease in blood pressure from 160/ 100 mmHg drops to 150/90 mmHg.

Conclusion: Providing tomato juice intervention has proven to be effective in helping reduce high blood pressure in hypertension sufferers. The benefits of this non-pharmacological therapy will be maximized if done regularly.

Keywords: *Tomato Juice, Hypertension, Blood Pressure*

Introduction

Hypertension or often called high blood pressure is a disorder of the circulatory system that causes blood pressure to increase to above the normal limit of 140/90 mmHg (Nopriani & Wati, 2024). Hypertension is known as the "Silent Killer". Where the side effects can vary from person to person and are almost the same as indications for other infections. Side effects are migraines, vertigo, heart palpitations, weakness, blurred vision, ringing in the ears and nosebleeds (Marianawati et al., 2023). Hypertension can be a degenerative disease like diabetes mellitus, hypertension is also a non-communicable disease but is still a problem throughout the world (Betrix, 2022).

Hypertension is the main cause of premature death worldwide. This is why WHO set one of its global targets for non-communicable diseases: reducing the prevalence of hypertension from 2010 to 2030 (Lukitaningtyas & Cahyono, 2023). World Heart Organization (WHO), according the number of people suffering from hypertension will continue to increase along with population growth in 2025. It is estimated that around (29.2%) of the world's population will suffer from hypertension (Khoirunisa et al., 2023)

The death rate in Indonesia due to hypertension is 427,218 deaths from a prevalence of cases in Indonesia of 63,309,620 people (Alkhusari et al., 2023). In accordance with provincial data, it is detailed that in Indonesia there is one disease that attacks the elderly, namely hypertension which reaches 34.11% (Talango et al., 2024). Based on a report from the Ciamis District Health Service in 2023, it is known that the Cikoneng Community Health Center UPTD has a total of 1466 people with hypertension in the elderly (Supriadi et al., 2023).

According to (Cholifah & Sokhiatun, 2022), hypertension treatment is combined with a low cholesterol or high fiber diet and a low calorie diet for hypertensive patients who are overweight. People with high blood pressure should eat lots of fruit, vegetables and low-fat foods to lower their blood pressure. Many hypertension sufferers have uncontrolled blood pressure, so the percentage continues to increase. Therefore, good treatment is very necessary to control hypertension (Cahyanti et al., 2024). There are 2 types of hypertension treatment, namely pharmacological treatment (drugs) and non-pharmacological therapy (without drugs). Treatment with pharmacological methods is in the form of drugs derived from chemicals. Meanwhile, chemicals will cause side effects for the body if used long term (Hasanah, 2022).

Patients with hypertension may benefit from both non-pharmacological and pharmacological management interventions. Pharmacological control strategies involve administering anti-hypertension drugs such as amlodipine, while non-pharmacological strategies involve lifestyle modifications such as stopping smoking, reducing excessive alcohol intake, reducing salt and fat intake, losing weight, and increasing fruit and vegetable consumption (Asadha, 2021). Non-farmakologis therapy refers to therapy that uses natural ingredients without using any chemicals. One of them is tomatoes, a non-drug treatment for hypertension sufferers (Monita Dewi, 2021).

Because 100 grams of tomatoes contain 100 grams of calories, 1 gram of protein, 4.2 grams of carbohydrates, 5 mg of calcium, 360 mg of potassium, 0.5 mg of iron, 40 mg of vitamin C, 1500 IU of vitamin A, 06 mg of vitamin B, and 94 g of water, tomatoes have the potential to lower blood pressure. (Agustina, 2023). The Wilcoxon test shows that tomato juice has an effect on blood pressure in elderly hypertension sufferers, and a combination of blood pressure lowering drugs in the elderly (Habibyansyah, 2024)

Based on the explanation above, the author is interested in conducting a case study to determine the implementation of non-pharmacological therapy by administering tomato juice to reduce high blood pressure, which was assessed on May 31 2024 to June 3 2024.

Objective

This case study is to carry out nursing care for the elderly and see the effect of implementing tomato juice therapy to help lower blood pressure.

Method

Through the use of a nursing care approach starting from assessment, diagnosis, planning, implementation of actions, and comprehensive evaluation. This case study design uses descriptive analytical methods. Which is used to collect detailed data, combine it with information from various sources, and combine non-pharmacological therapeutic interventions with detailed explanations and analyzes regarding the characteristics of a phenomenon or problem, as well as making a comprehensive interpretation of the results obtained from the data collected by using limitations -certain limitations. The focus of the intervention provided is tomato juice as a treatment for hypertension in the elderly. In 2024, this research will be conducted in the Cikoneng Region. Elderly patients suffering from hypertension received tomato juice twice a day for three days during home visits as the research sample. Patients are advised to consume tomato juice.

Results

In June 2024, the nursing care provided to Mrs. J, 60 years old with cardiovascular system disorders, especially hypertension, in Village Hamlet RT 03 RW 01 Margaluyu Village, Cikoneng District, Ciamis Regency. The nursing approach used includes the stages of assessment, diagnosis, planning, implementation and evaluation.

The results of the patient's assessment showed objective data with blood pressure 160/110 mmHg, pulse 92x/minute, respiration 22x/minute and temperature 36°C. The patient looked confused and asked about his illness. Subjective data obtained by Mrs. J The patient complains of dizziness, heavy head, throbbing and stiff neck. It is known that patients do not regularly take their medication and also do not understand how to prevent and recur hypertension.

Nursing diagnosis

Based on the data above, the following diagnosis can be made:

Table 1 nursing diagnoses

Nursing diagnoses	Objectives and Results Criteria	Intervention
Knowledge deficit related to lack of exposure to information (D.0111)	After carrying out family visits for 4x 30 minutes, it is hoped that knowledge will increase, with the following outcome criteria: 1. The patient is able to understand a topic 2. Behavior corresponds to his increased knowledge	1. Provide materials and health education about giving tomato juice to people with hypertension 2. Schedule health education as agreed 3. Explain factors that can influence health

Nursing Implementation

Table 2 Blood pressure before and after intervention

	Systolic BP	Diastolic BP
Before	160	100
After	150	90

Nursing Evaluation

Table 3 nursing evaluation

Date and Time	Evaluation
Tuesday, June 03, 2024 13.00 WIB	<p>S: The patient felt that his condition was gradually improving, the symptoms of dizziness and stiff neck began to disappear after the 3rd visit of non-pharmacological tomato juice therapy.</p> <p>Oh: Vital sign Results: Q: 35°C P: 88x/minute R: 20 x/minute S: 150/90 MmHg</p> <p>A Problem partially resolved</p> <p>P: Encourage patients to consume tomato juice every day independently at home twice a day.</p>

Discussion

Nursing care provided to elderly Mrs. J with hypertension problems in the Cikoneng Community Health Center UPTD Working Area, specifically in the RT Village Hamlet. 03 RW. 01, Margaluyu Village, Cikoneng District, Ciamis Regency. The assessment was carried out from 31 May 2024 to 03 June 2024, using a case study approach starting from the assessment, determining nursing diagnoses, planning nursing actions, carrying out nursing actions and also carrying out nursing evaluation and documentation. The author will compare the theories that exist in the results of observations of actions in the field, with discussions found in the data collection stages in the nursing process.

Hypertension or often called high blood pressure is a disorder of the circulatory system that causes blood pressure to increase to above the normal limit of 140/90 mmHg. (Lukitaningtyas & Cahyono, 2023). Mrs. J has experienced hypertension based on the results of the assessment that has been carried out, Mrs. J has also experienced hypertension since the age of 50 years.

There is a gap between theory and field studies regarding nursing diagnoses for the elderly. In the theory review chapter there are two nursing diagnoses for the elderly that may appear. However, only one elderly nursing diagnosis found after conducting an assessment of hypertensive clients was a knowledge deficit nursing diagnosis (D.0111) related to lack of exposure to information.

To overcome this, the authors carried out an intervention in accordance with the Indonesian Nursing Intervention Standards, namely by using tomato juice as a non-pharmacological treatment to lower blood pressure.

Tomato juice is used as a treatment to lower blood pressure non-pharmacologically in patients for a period of three days. In this implementation, the author teaches patients education about the pattern of consuming tomato juice independently and recommends consuming tomato juice regularly to help stabilize blood pressure.

The author's analysis shows that consuming tomato juice as an additional supplement in hypertension therapy has been proven to reduce blood pressure significantly. Because 100 grams of tomatoes contain 100 grams of calories, 1 gram of protein, 4.2 grams of carbohydrates, 5 mg of calcium, 360 mg of potassium, 0.5 mg of iron, 40 mg of vitamin C, 1500 IU of vitamin A, 06 mg of vitamin B, and 94 g of water, tomatoes have the potential to lower blood pressure (Agustina, 2023).

Based on the results of the nursing evaluation, it was found that the patient's blood pressure experienced changes before and after consuming tomato juice twice a day for three days. The results of the author's nursing care showed a reduction in blood pressure from 160/100 MmHg to 150/90 MmHg. In accordance with Agustina's research, 2023 and Habibyansyah, 2024 The impact of giving tomato juice twice a day on reducing blood weight appears.

In the midst of this review, the author did not encounter any obstacles in providing comprehensive nursing care, due to the permission from the Cikoneng Community Health Center UPTD and the patient's willingness to receive nursing care services that had been planned to run well and correctly.

Conclusion

Application of non-pharmacological therapy by administering tomato juice has proven to be effective in reducing hypertension, based on the patient's subjective recognition. The patient felt that his condition was gradually improving, the symptoms of dizziness and stiff neck began to become less noticeable after the 3rd visit of non-pharmacological tomato juice therapy. And from objective data, namely the patient's blood pressure after being given tomato juice was 150/90 mmHg. This conclusion is based on the author's findings through nursing care.

It is hoped that this research can contribute scientific insight and knowledge for writers and readers in providing and arranging nursing care for hypertensive patients. This author's recommendation does not conflict with previous research, so it can be a useful reference for further research. Health workers, especially those who work in the community, can also advise patients to drink tomato juice to lower their blood pressure.

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