

## EFFECTIVENESS OF STAR FRUIT IN REDUCING ACUTE PAIN IN HYPERTENSION

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### Abstract

*Hypertension is systolic blood pressure >140 mmHg and diastolic blood pressure >90 mmHg or if the respondent uses anti-hypertension medication. Hypertension is one of the most common cardiovascular diseases and is most commonly suffered by people, especially in the West Kalibaru area. The aim of this research is to see the effect of star fruit juice on respondents who experience hypertension with acute pain in the Kalibaru area, as well as to see the effectiveness of star fruit juice in lowering blood pressure. The research method used is a descriptive method in the form of case studies and experimental studies carried out on respondents suffering from hypertension in the West Kalibaru area, specifically on Rt 12 Rw 05, Kalibaru Village, Cilincing District. The action given is providing non-pharmacological therapy to reduce pain by giving star fruit juice and warm compresses. The results of research from 10 respondents who experienced acute pain due to hypertension by giving star fruit juice and warm compresses were that there was a decrease in blood pressure and also the intensity of pain after being given star fruit juice and warm compresses. This can happen because of the willingness of the respondents and also support from the family to follow the advice given in carrying out non-pharmacological techniques.*

**Key words:** Hypertension, Acute Pain, Star fruit

### 1. INTRODUCTION

Hypertension is one of the most common cardiovascular diseases and is most commonly suffered by society. Hypertension is also called the silent killer because it often occurs without any complaints, so sufferers do not know they have hypertension and only find out after complications occur. Many people tend to think that hypertension is not a dangerous disease, so many people do not go to the nearest health facility for regular check-ups or regularly take medication even though they already know that they have a history of hypertension. This is characterized by the public's opinion that the signs and symptoms of hypertension are similar to other diseases such as dizziness, headaches, dizzy eyes, so that most sufferers do not realize that it is hypertension.

At this time, World Health Organization (WHO) estimates that the global prevalence of hypertension is 22% of the world's total population. Of the number of sufferers, only less than a fifth make efforts to control their blood pressure. Data from WHO estimates that there are 1.13 billion people with hypertension worldwide, two-thirds of cases are in countries with lower middle income. The number of cases will continue to increase every year and in 2025, it is estimated that it will reach 1.5 billion cases, and the death rate due to hypertension and its complications is estimated to reach 9.4 million people every year.

The role of the family in caring for family members who suffer from hypertension is very necessary to overcome nursing problems in individuals who suffer from hypertension. Hypertension sufferers who receive support and attention from their families tend to be able to overcome the common problem of hypertension, namely compliance with taking medication. If the family pays attention to the client's lifestyle such as smoking habits, consuming foods high in sodium, physical activity, hypertension treatment will tend to be easy to carry out with optimal results, in contrast to sufferers who do not receive support from the family.

## 2. METHODOLOGY

The design used in preparing this research is descriptive in the form of an experimental case study with the aim of exploring the problem of nursing care for families with hypertension. The approach used is a nursing care approach which includes assessment, diagnosis, planning, action and evaluation of nursing in the West Kalibaru 7 Cilincing, North of Jakarta area. 10 respondents are taken with the same medical diagnosis and nursing problem. The location used in this research is West Kalibaru 7 Cilincing, North of Jakarta. The data collection technique carried out is using the interview method using the format of assessment, observation, documentation studies by looking at the results of physical examination data, and experimental studies carried out by providing intervention by giving star fruit juice to respondents who suffer from hypertension with acute pain. The validity of the data carried out by researchers is intended to prove the quality of the data or information obtained in the research so as to produce data with high validity. In addition, data validity is carried out by extending the observation or action time, additional sources of information using data triangulation in data collection. The data analysis process evaluated the extent of the success of the nursing actions that have been taken in reducing acute pain in hypertension by administering starfruit juice. Research ethics uses informed consent, anonymity and confidentiality.

## 3. RESULTS

From the results of blood pressure measurements carried out of ten (10) respondents, it showed that giving star fruit to patients with hypertension given for 5 days could influence the reduction of blood pressure, this shows that the content in star fruit contains several minerals and electrolytes, such as potassium, phosphorus, zinc and iron. The potassium contain(s) in sweet starfruit (*Averrhoa carambola linn*) functions as a diuretic so that fluid sodium excretion increases, which can help lower blood pressure. Potassium is also useful for inhibiting renin in the angiotensin system so that angiotensinogen cannot form angiotensin I. Apart from containing potassium, sweet starfruit also contains catechin flavonoids which can cause anti-hypertensive effects.

### Univariate Analysis

**Table 1: Average Blood Pressure of Hypertension Patients Before Treatment (Pre-test)**

| Variabel                                  | Mean   | SD     | Min-Max | CI 95% |
|---|--------|--------|---------|--------|
| Systolic blood pressure before treatment  | 158,62 | 137,92 | 130-237 | 85,48  |
| Diastolic blood pressure before treatment | 110,74 | 97,70  | 89-162  | 60,56  |

Table 1 Explained that before (pre-test) the intervention of giving sweet starfruit juice (*Averrhoa carambola* Linn) the average blood pressure of respondents was 158.62/85.48 mmHg with a standard deviation of 137.92. The minimum systolic blood pressure was 137.92 mmHg, the maximum was 97.70 mmHg and the minimum diastolic pressure was 89 mmHg, the maximum was 162 mmHg. At a 95% confidence interval, it was believed that the average systolic blood pressure of hypertensive patients before giving sweet starfruit juice (*Averrhoa carambola* Linn) was between 130-237 mmHg and diastolic blood pressure between 89-162 mmHg

**Table 2. Average Blood Pressure of Hypertension Patients after Treatment (Post Test)**

| Variabel                                  | Mean | SD       | Min-Max | CI 95% |
|---|------|----------|---------|--------|
| Systolic blood pressure before treatment  | 144  | 125,1055 | 105-210 | 77,54  |
| Diastolic blood pressure before treatment | 102  | 68,59547 | 82-136  | 42,52  |

Table 2 Explained that after treatment (post-test) the average blood pressure of respondents was 125.1005/68.59547 mmHg with a standard deviation of 105-210. The minimum systolic blood pressure was 82-136 mmHg, the maximum 105-210 mmHg and the minimum diastolic pressure was 82 mmHg, the maximum 136 mmHg. At a 95% confidence interval, it was believed that the average systolic blood pressure of hypertensive patients after being given sweet starfruit juice (*Averrhoa carambola* Linn) was between 77.54 mmHg and diastolic blood pressure between 42.52 mmHg.

### 3.1. Nursing care for patients with Hypertension

#### 3.1.1. Assessment

Assessment process was carried out on all respondents starting from respondent identity data such as name, age, gender, ethnicity, religion, marital status, education and employment, genogram, family type, socio-economic status, family recreational activities, family development stage, nuclear family history and previous family history. Then an environmental assessment was carried out to obtain data that supports the respondent's problems. The results of the physical examination obtained data that blood pressure increased, respondents often experienced pain in the head and neck felt very sore. What the respondents did when they were feeling pain, they preferred to lie down in bed and rub their heads with wind oil to reduce the pain was feeling

#### 3.1.2. Nursing Diagnosis

From the results of the assessment conducted on the respondents, the nursing diagnoses obtained were Acute Pain (D.0077) related to the family's inability to recognize health problems, Ineffective family health management (D.0115) related to the family's inability to care for family members suffering from Hypertension. and Non-Compliance (D.0114) related to the family inability to utilize health facilities.

#### 3.1.3. Nursing Intervention

General nursing planning has been made, adjusted and a time of 5x24 hours has been set to make it easier to do evaluations. Apart from that, it was also appropriate to the timing of providing nursing care.

### **3.1.4. Nursing Implementation**

In general, the implementation of priority nursing actions for the nursing diagnosis raised is Acute Pain (D.0077) related to the family's inability to recognize health problems can be implemented according to the plan that has been prepared, then adjusted to the conditions of the respondents in the field. Where in the implementation, the researcher collaboratd with the family as a support system for respondents in doing nursing actions. Supporting factors for the implementation of nursing were good cooperation between respondents, respondents' families in carrying out nursing actions and also an adequate home environment.

### **3.1.5. Nursing Evaluation**

The evaluation conducted was based on the respondent condition and made according to the problems in the evaluation, namely by using SOAP (Subjective, Objective, Analysis, and Planning). After giving star fruit for 5 consecutive days in the morning and evening, a significant decreased in blood pressure and the pain scale decreased. Respondents had already understood the disease they were suffering from so they could provide care such as preparing warm water and towels to compress to reduce the pain felt. Supporting factors for nursing evaluation that respondents were very cooperative, with increased knowledge about hypertension care with acute pain by giving star fruit routinely and disiciplined so that it could reduce pain and lower blood pressure.

## **4. CONCLUSION**

Hypertension is a condition of high blood pressure, characterized by systolic pressure of more than 140 mmHg and diastolic pressure of more than 90 mmHg. It is able to occur due to the workload of the heart which working faster to pump blood throughout the body so that it can flow oxygen and nutrients throughout the body. This can be known through regular blood pressure checks using a tensiometer/sphygmomanometer, either manual or digital.

From the data obtained, each respondent had a different hypertension classification. In respondent I, based on the results of blood pressure measurements, the blood pressure results were  $>200$ mmHg which could be classified according to the theory as Very Severe Hypertension (stage 4). While in respondent II, it could be classified as Mild Hypertension (stage 1) and for respondent III, it could be classified as Moderate Hypertension (stage 2).

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