

The Relationship between Diet Compliance and Blood Pressure of Hypertension Patients in Batoh Public Health Center, Lueng Bata District, Banda Aceh City

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Abstract

Hypertension is an abnormal increase in blood pressure in the arteries, and the increase continuously occurs over a period. People with hypertension must consider food factors (dietary compliance) because diet is one way to lower blood pressure. Patients with hypertension should adhere to a hypertension diet so that blood pressure becomes stable and further complications can be prevented. This study aims to determine the relationship between hypertension dietary compliance and blood pressure of hypertensive patients in Batoh Public Health Center, Lueng Bata District, Banda Aceh City. This descriptive-analytic research employed a cross-sectional design. The research sample was 37 women aged 45-60 years. They were selected using a non-probability technique with the purposive sampling technique. The research was conducted at the Batoh Public Health Center, Lueng Bata District, Banda Aceh City. The research data included hypertension diet compliance and blood pressure of hypertensive patients. The level of dietary compliance was determined using a questionnaire while the level of blood pressure was determined using a digital blood pressure measurement of Tensi One. The chi-square test was employed to analyze the relationship between diet compliance and blood pressure. This study has discovered that 64.9% of hypertensive patients have non-adherent diet compliance, and 78.4% of them have high blood pressure. These results denote a significant relationship between dietary compliance and blood pressure (p-value = 0.008).

Keywords: Blood Pressure, Diet Compliance, Hypertension

Introduction

High blood pressure is an abnormal increase in blood pressure in the arteries over a period of time. The World Health Organization (WHO) states that the normal limit for blood pressure is 140/90 mmHg, while hypertension refers to blood pressure of > 160/95 mmHg. Unfortunately, the WHO limits do not differentiate ages and genders (Udjiyanti, 2010).

WHO reports that in 2015, approximately 1.13 billion people in the world suffered from hypertension, meaning that 1 in 3 people in the world was diagnosed with hypertension. The number of hypertension sufferers continuously increases every year. It is estimated that the number of hypertension sufferers will reach 1.5 billion people in 2025. Moreover, it is estimated that 9.4 million people die from hypertension and other complications every year.

The Ministry of Health (2013) reports that hypertension is the third leading cause of death after stroke and tuberculosis, and the proportion of deaths reaches 6.7% of the death population of all ages in Indonesia. The 2013 Basic Health Research (Riskesdas) has discovered that the national prevalence of hypertension is 25.8%. There are approximately 15 million hypertension sufferers in Indonesia, but only 4% of them have controlled hypertension. Controlled hypertension refers to hypertension sufferers who know the treatment they undergo. On the other hand, 50% of hypertension sufferers in Indonesia do not realize that they are hypertensive so that they tend to suffer from hypertension.

In Aceh, hypertension is one of the non-communicable diseases. In 2013, the number of hypertension cases in Aceh was 21.5% (Riskesdas, 2013). The American Dietetic Association (ADA) explains that diet can lower blood pressure. ADA recommends a low-salt diet with the principles of the dietary approaches to stop hypertension (DASH) diet. A study by Hummer et al. (2012) in the United States has proven that a patient's blood pressure decreases from 155/79 mmHg to 138/72 mmHg after diet therapy.

Diet is a strategy to lower blood pressure. People with hypertension must consider dietary factors (dietary compliance). Patients with hypertension should adhere to a hypertension diet so that blood pressure becomes stable and further complications can be prevented. On the other hand, if people with hypertension do not comply with their diet, their blood pressure will continuously increase, and other complications can occur (Agrina, 2011).

A hypertension diet aims to lower blood pressure and maintain blood pressure. In addition, diet aims to reduce other risk factors, such as excess body weight, high levels of fat, cholesterol, and uric acid in the blood. People with hypertension are recommended to regulate their food menu to avoid and limit food that can increase blood cholesterol levels and blood pressure (Musayaroh, 2011).

Based on the research background, this study formulates a problem as follows "is there any relationship between dietary compliance and blood pressure of hypertensive patients in the Batoh Public Health Center, Lueng Bata District, Banda Aceh City?" This study aims to determine the relationship between diet compliance and blood pressure of hypertensive patients in Batoh Public Health Center, Lueng Bata District, Banda Aceh City.

Methods

This study employed a quantitative method to explain the relationship between variables. Data were primarily collected using an interview method. The type of this study was descriptive-analytic with a cross-sectional design.

Data Collection Techniques

Data were collected using a questionnaire to measure blood pressure and an interviewing to explore diet compliance. The research population was female hypertension patients aged 45-60 years in Batoh Public Health Center, Lueng Bata District, Banda Aceh City. Moreover, the sample of this study was 37 respondents. Sampling was conducted using a proportional sampling technique with the following formula.

$$n = N / (1 + N.(e)^2)$$

Description:

n = Number of samples

N = Total population

e = The statistical deviation from the sample to the population set at 0.1

The data were analyzed using the chi-square statistical test. This study employed a limit of the significance of $\alpha = 0.05$ or a confidence interval (CI) of 95%. The two variables are considered significantly related if the p-value is < 0.05 .

Results and Discussion

Results

Table 1. The Relationship between Dietary Compliance and Blood Pressure in Hypertensive Patients in Batoh Public Health Center, Lueng Bata District, Banda Aceh

Diet Compliance	Blood pressure						P Value
	Normal		High		Amount		
	n	%	n	%	N	%	
Obeded	6	46.2	7	53.8	13	100.0	0.008
Disobeyed	2	8.3	22	91.7	24	100.0	
Total	8	21.6	29	78.4	37	100.0	

Discussion

Relationships between Diet Compliance and Blood Pressure

Compliance is a change in behavior from disobeying rules to obeying rules (Green in Notoatmodjo, 2007). Blood pressure is the pressure of blood against the walls of the arteries when it is pumped from the heart to the tissues. Blood pressure is the force that blood exerts on the walls of blood vessels. This pressure varies according to the number of blood vessels involved and heart rates. This highest pressure occurs when the ventricle contracts (systolic pressure), and the lowest pressure occurs when the ventricle relaxes (diastolic pressure) (Depkes, 2008).

This study has revealed that most of the research sample (29 patients or 78.4%) have high blood pressure due to a compliance factor. If patients do not comply, their blood pressure will remain high. In addition, this study has proven a relationship between dietary compliance and blood pressure. The data on the compliance factor denote that most of the research samples, hypertension patients, have a category of a non-adherent level of hypertension diet and blood pressure. They neither are disciplined nor obey the orders, rules, and a predetermined diet program. In addition, they neither adhere to a low-salt diet nor apply a healthy lifestyle. Consequently, their hypertension is uncontrollable. In contrast, if they adhere to diet, their blood pressure can return to normal.

The results of this study are supported by Triwibowo et al. (YEAR) who examine hypertensive patients at the Internal Medicine Poly of Prof. Dr. Soekandar Mojokerto Hospital and has discovered a relationship between dietary compliance and blood pressure.

Conclusions and Suggestions

Conclusion

1. The data on dietary compliance show that of 37 hypertension patients, 24 of them (64.9%) are categorized as non-adherent.
2. The data on blood pressure show that of 37 hypertension patients, 29 of them (78.4%) suffer from a high hypertension category.
3. The statistical test analysis with the chi-square has proven a relationship between diet compliance and blood pressure of hypertension patients in Batoh Public Health Center, Lueng Bata District, Banda Aceh City (p-value < 0.05).

Suggestion

The results of this research still need some improvements. Thus, further research is expected to improve these shortages.

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