

The Relationship Between Food Consumption and Hypertension in the Elderly in the Working Area of the Sarimatondang Health Center, Simalungun Regency

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ABSTRACT

Hypertension is currently a risk factor for morbidity and mortality for Jansia. Or Riskesdas 2013 states that the prevalence of hypertension in Indonesia ranges from 25.8 % , with more disease incidence occurring in women (28.8%) and in the elderly. In North Sumatra, the prevalence of hypertension is also high, which is around 24.7 % based on the 2013 Riskesdas data. Data from the Sarimatondang Health Center states that the prevalence of hypertension in the elderly is around 21 people (8.8 %). The purpose of this study was to determine and analyze the relationship between food consumption and the incidence of hypertension in the elderly at the Sarimatondang Health Center in 2018. This type of research is an observational analytic with a cross-sectional study design. The population in this study were all elderly aged ≥ 60 years at the Sarimatondang Health Center, totaling 120 people, with a sample size of 55 respondents. This research was conducted at the Sarimatondang Health Center from 2018 to August. The results showed that the types of food to prevent hypertension that were often consumed by respondents were corn, fresh water fish, tempeh, tomatoes, bananas, green beans and the types of foods that triggered hypertension which were often consumed by respondents were pork, salted fish, and biscuits. The results also showed that the variables significantly related to the incidence of hypertension were fat ($p=0.025$), sodium ($p=0.039$) and fiber ($p=0.029$), while carbohydrates ($p=0.821$) and protein ($p=0.189$).) was not significantly associated with the incidence of hypertension. Advice that can be given to the community at the Sarimatondang Health Center in 2018, especially the elderly, is to reduce consumption of foods that are high in sodium or salt, high in fat, and also increase consumption of vegetables and fruit at affordable prices every day.

Keywords:

Hypertension, Elderly, Food Consumption

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1. INTRODUCTION

The government's success in national development has resulted in positive results in various fields, namely economic progress, environmental improvement, advances in medical science and technology as well as efforts to improve health which can increase life expectancy. One of the challenges in the field of population development in Indonesia is facing an opportunity caused by changes in the composition of the population according to age, which are called windows of opportunity in the 2030s. This condition is accompanied by a large population of productive age, a decrease in the number of children and an increase in the number of elderly people.

These problems can be overcome by having a reference for population development in the future, both from a public policy standpoint. In the form of Population Development Grand Design (GDPK) with various target achievements. The goal of this GDPK is to control the quantity of the national population for 2010-2035 so that a quality population is realized as the basic capital in development to achieve an Indonesian society that is independent,

advanced, just and prosperous. Being elderly is a process of slowly disappearing the network's ability to improve itself or replace themselves and maintain their normal structure and function. Deterioration of organ structure and function also occurs in the cardiovascular system, one of which is the arterial walls have thickened and stiffened due to arteriosclerosis so that blood is forced to pass through narrower vessels than usual and causes blood pressure to rise [1]-[2].

Hypertension in the elderly is mostly isolated systolic hypertension (HST). Increased systolic pressure causes a greater likelihood of stroke and myocardial infarction even though the diastolic pressure is within normal limits (isolated systolic hypertension). Isolated systolic hypertension is the most common form of hypertension in the elderly. In one study, hypertension occupied 87% of cases in people aged 50 to 59 years. The presence of hypertension, both HST and a combination of systolic and diastolic is a risk factor for morbidity and mortality for the elderly. Isolated Systolic Hypertension (HST) is clearly associated with the incidence of stroke, coronary heart disease, heart failure, heart size, kidney failure and reduction in kidney size [3].

Efforts to inhibit the changes that occur in the elderly can be done, namely adapting to the limitations that accompany the aging process and it is necessary to prepare a special menu for the elderly so that the needs of Bia in the elderly are optimally fulfilled. Proper intake of nutrients plays a role in creating optimal health for the elderly. Nutritional adequacy will be fulfilled if the elderly pay attention to a varied diet and balanced nutrition

Based on the description above, the authors are interested in conducting research on the relationship between food consumption and the incidence of hypertension in the elderly in the Working Area of the Sarimatondang Health Center, Sidamanik District, Simalungun Regency.

2. METHOD

Types of research

This research is an observational analytic research type with a cross sectional research design. This study aims to determine food consumption associated with the incidence of hypertension in the elderly in the Working Area of the Sarimatondang Public Health Center, Sidamanik District, Simalungun Regency.

Location and Time of Research

Research sites

This research was conducted in the Working Area of the Sarimatondang Health Center, Sidamanik District, Simalungun Regency.

Research time

This research will be conducted during August 2018.

Data analysis

Data analysis was carried out in stages which included univariate, bivariate,

1. Univariate analysis

Univariate analysis was performed to get an overview of each dependent variable and independent variable. The data will be presented in the form of a frequency distribution.

2. Bivaria analysis

Bivariate analysis is to determine whether there is a relationship between the independent variables (categorical) and the independent variables (categorical) by using the Kai Square Test or Chi Square.

To determine the significance of the results of statistical calculations, a significance limit of 0.05 was used. Thus if the p value < 0.05 then the calculation results are statistically significant and if p - 0.05 then the results of the statistical calculations are not significant.

3. RESULTS AND DISCUSSION

Hypertension Incidence in the Elderly

In developed countries, currently there are only a few hypertension with controlled blood pressure (BP < 140, TDD < 90 mmHg), this is caused by treatment that is not optimal in the elderly [10]. Hypertension is a persistent increase in systolic and diastolic blood pressure. An increase in systolic pressure without being followed by an increase in diastolic pressure is called isolated systolic hypertension. Isolated systolic hypertension is generally found in old age, if this condition is found in young adults more. « linked to hyperkinetic circulation and it is predicted that in the future the diastolic pressure will also follow. Systolic hypertension is the heart beating too fast so that it can increase the systolic number, systolic pressure is related to: high pressure in the arteries when the heart contracts (heart rate) [17].

Food Consumption

Non-communicable diseases such as hypertension are strongly influenced by the food people consume every day. Food consumption in this case includes the type and frequency of food consumption to prevent and trigger hypertension and the level of consumption of carbohydrates, protein, fat, sodium, fiber.

Types and Frequency of Consumption of Foods to Prevent Hypertension

The type of staple food to prevent hypertension that is most often consumed by the elderly at the Sarimatondang Health Center is corn (5.5 %). According to several sources, the types of staple foods included in hypertension prevention foods are brown rice and corn. However, what is most often consumed is corn because corn is easier to get at the Sarimatondang Health Center than brown rice. The content contained in corn plants is very much starting from carbohydrates, fiber, vitamins, potassium, linoleic acid, folic acid, beta carotene, minerals, protein and others.

Types and Frequency of Consumption of Foods that Trigger Hypertension The type of food high in cholesterol that triggers hypertension that is often consumed by the elderly at the Sarimatondang Health Center is pork (60.0 %). Types of foods that contain high cholesterol in this study are mutton, beef, pork and shrimp. However, what is most often consumed by the elderly is pork which is usually obtained and consumed when there is a traditional party in the village. Not only during traditional parties, but also people process and cook at home for consumption. Beef, goat and pork are known as a source of bad cholesterol. The cholesterol content per 100 grams of meat is actually not that high, which is around 72 mg for beef and 7 mg for pork.

Carbohydrate Consumption Rate

Based on the cross-tabulation of carbohydrate consumption levels among respondents at the Sarimatondang Health Center, it can be seen that the majority of respondents have a low level of carbohydrate consumption (52.7 %). The lack of consumption of foods containing carbohydrates by the elderly in the village is because some elderly people only eat rice every day as a donation carbohydrates and rarely consume other carbohydrate foods.

Lack of carbohydrates can make the body not get the vitamins and minerals found in foods that contain carbohydrates, so that the immune system will be reduced. The result is an increase in the amount of food that is high in fat and cholesterol which can cause hypertension and even increase the risk of heart disease. The level of consumption of carbohydrates that tends to be excessive which is not balanced with the needs or users will increase glycogen storage in the body. Glucose in the body will affect the increased production of insulin and triglycerides in the blood vessels. When insulin levels increase, it will increase sodium reabsorption in the body to balance the fluid in the blood vessels. If this is left unchecked it will cause hypertension. Therefore, it is also necessary to limit the consumption of carbohydrates in addition to limiting the consumption of fat and sodium. The elderly should consume sufficient carbohydrates according to standards to avoid diseases that often occur in the elderly such as hypertension.

Protein Consumption Rate

Based on the cross-tabulation of the level of protein consumption among respondents at the Sarimatondang Health Center, it can be seen that the majority of respondents have a good level of protein consumption (45.5 %). Vegetable proteins that are often consumed are tempeh, tofu and green beans. In theory, vegetable protein contains the essential amino acids leucine, isoleucine, valine, tryptophan, ferulalanine, threonine, lysine and histidine, except for methionine. Essential amino acids can increase the process of active transport from the blood into muscle cells and other tissues and increase protein synthesis in muscle cells and liver cells by activating ribosomes and inhibiting the process of protein catabolism with the help of insulin. This has an effect on the cardiovascular system, namely it can increase peripheral blood flow and reduce peripheral resistance, resulting in an increase in cardiac output which affects a decrease in blood pressure.

Fat Consumption Rate

Based on the cross-tabulation of the level of fat consumption in the respondents, it can be seen that the majority of respondents have a higher level of fat consumption (58.2 %). The average level of fat consumption based on the % RDA is 141.9 %. Based on these results, it is known that the respondent's level of fat consumption far exceeds the nutritional adequacy recommended for consumption by their bodies. Limiting fat consumption is done so that blood cholesterol levels are not too high. High blood cholesterol levels can cause cholesterol deposits in the walls of blood vessels. If the accumulation of cholesterol deposits increases, it will clog the arteries and interfere with blood circulation. Thus, it will make the heart work harder and indirectly exacerbate hypertension [2].

Sodium Consumption Rate

Based on the cross tabulation of the sodium consumption level of the respondents, it can be seen that the majority of respondents have a higher sodium consumption level (50.9 %). Types of food that contain sodium are widely consumed by respondents. In the processing and cooking of foodstuffs, salt is also used in excess of existing standards and according to taste. Most of the elderly at the Sarimatondang Health Center often eat foods that are high in sodium, such as salted fish and dried anchovies because the prices are affordable and easy to obtain.

Fiber Consumption Rate

Based on the cross tabulation of the level of fiber consumption in the respondents, it can be seen that the majority of respondents have a low level of fiber consumption (50.9 %). Soluble fiber is consumed by many respondents, although some still do not meet the recommended standards. Most of the elderly at the Sarimatondang Health Center often eat vegetables such as tomatoes and spinach to meet their daily fiber needs. However, the people in this village, especially the elderly, rarely eat fruit, so the source of fiber from this type of fruit is still lacking. Most of the respondents more often only consumed fruits such as bananas and papayas. Soluble fiber can reduce cholesterol absorption in digestion by binding to bile (which contains cholesterol) and dietary cholesterol so that it can be excreted by the body. Soluble fiber includes pectin (found in vegetables and fruit, especially in guavas, apples and carrots), gum (obtained from the essence of acacia trees), mukilase (found in types of grains), and algal (found in algae and seaweed). [2].

Relationship between Food Consumption and Hypertension in the Elderly in the Work Area of the Sarimatondang Health Center

Food consumption in this case includes the level of consumption of carbohydrates, protein, fat, sodium and fiber, namely the average daily consumption of carbohydrates, fat, sodium and fiber which is obtained from the conversion of all the food consumed by the respondent per day, which at Deng's age uses 2x24 hour food recall method, and compared with the % AKG value.

Correlation between Carbohydrate Consumption Rate and Hypertension Incidence | in the elderly

Based on the results of the analysis using the chi square test on the relationship between the level of carbohydrate consumption and the incidence of hypertension in the elderly, the results were obtained ($P = 0.821$) $> \alpha$, so it can be concluded that the variable level of carbohydrate consumption is proven to have no relationship with the incidence of hypertension in respondents in the Work Area of the Sarimatondang Health Center, Simalungun Regency. Based on the results of the % RDA for the average level of carbohydrate consumption, it can be seen that the total consumption of respondents far exceeds the existing standard. If this is not matched by energy output, the remaining carbohydrate calories in the body will be stored as fat. Accumulation of fat in the body, especially in the abdomen will make it worse risk of complications from hypertension.

The Relationship between the Level of Protein Consumption and the Incidence of Hypertension in the Elderly

Based on the results of the analysis using the chi square test on the relationship between the level of protein consumption and the incidence of hypertension in the elderly, the result was ($p = 0.189$) $> \alpha$, so it can be concluded that the protein consumption level variable is proven to have no relationship with the incidence of hypertension in respondents in the Sarimatondang Health Center Work Area Simalungun Regency.

Correlation between the level of fat consumption and the incidence of hypertension in the elderly

Based on the results of the analysis using the chi square test on the relationship between the level of fat consumption and the incidence of hypertension in the elderly, the results were ($p=0.025$) $< \alpha$, so it can be concluded that the variable level of fat consumption is proven to have a relationship with the incidence of hypertension in respondents in the Work Area of the Sarimatondang Health Center, Regency Simalungun. Based on the results of the % RDA for the average level of fat consumption, it can be seen that the total consumption of respondents far exceeds the existing standards. Fat is needed by the body as a protective and building agent. However, if excessive consumption will increase the occurrence of plaque in blood vessels, which will further lead to hypertension.

4. CONCLUSION

1. Most of the respondents are female. Most of the respondents did not have a family history of hypertension and most of the respondents had high blood pressure or hypertension.
2. Types of food to prevent hypertension that are often consumed by respondents are: types of staple foods are corn, types of animal side dishes are freshwater fish, types of vegetable Ia are tempeh, types of vegetable foods are tomatoes, types of fruit foods are bananas and types of legumes are green beans.
3. Types of foods that trigger hypertension that are often consumed by respondents are: types of foods high in cholesterol are pork, types of preserved foods are salted fish and types of foods high in sodium are biscuits.
4. The carbohydrate consumption level of most of the respondents was in the less category, the protein consumption level of some respondents was good, the fat consumption level of some respondents was more, the respondent's sodium consumption level was more and the respondent's fiber consumption level was less based on the Nutrition Adequacy Rate.
5. There are 3 (three) levels of nutrient consumption that are significantly related to the incidence of hypertension, namely: the variables of fat, sodium and fiber, while the variables of carbohydrates and protein are not significantly related to the incidence of hypertension.

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