

The Relationship Between Diet and The Incidence of Hypertension at The Buduran Sidoarjo Health Center

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ABSTRACT

Hypertension or high blood pressure is an increase in systolic blood pressure of more than 140 mmHg and diastolic blood pressure of more than 90 mmHg at two measurements with an interval of five minutes in a state of adequate rest / calm (Ministry of Health RI, 2020). The incidence of hypertension at the Buduran Sidoarjo Health Center ranks 3rd with the number of patients served, which is 51.2% around 27,638. So researchers are interested in researching the incidence of hypertension. Objective: to determine the relationship between diet and the incidence of hypertension. Method: Quantitative analytical researcher design by using *a cross sectional* approach and using the chi-square test. The number of respondents was 40. This research will be conducted in February – March 2023. Dietary measurement with questionnaires and blood pressure measurement using *a sphygmomanometer*. Results: Some respondents had a poor or poor diet with the results of 23 people (57.5 %), and had blood pressure hypertension grade 1 with an average systolic of 140-159 mmHg and diastolic 90-99 mmHg with the results of 23 people (57.5%). Analysis: Analysis in this scientific paper using the chi-square correlation statistical test obtained the result $p = 0.091$. This means that p is less than 0.10, so there is a relationship between diet and the incidence of hypertension at the Buduran Sidoarjo Health Center. Discussion: The majority of patients with hypertension have a poor or poor diet, it is also caused by other factors such as the age of the majority of the elderly, the gender of the majority of men, the last education of the majority of junior high school, and the work of the majority of housewives.

Keywords: Diet, Hipertensi

INTRODUCTION

According to WHO (World Health Organization) Hypertension is a non-communicable disease that is often found in the community and results in high morbidity. This disease can trigger various other chronic diseases so that treatment must be done immediately before complications and other adverse consequences occur. Hypertension can occur in anyone, both men and women. The risk of developing hypertension will increase at the age of 60 years and over because blood naturally tends to increase with age. Hypertension can attack almost all groups of people around the world and will continue to grow from year to year. Hypertension is still a health problem in the elderly group (Roza Agustin, 2019).

According to the World Health Organization (WHO), 2019 shows almost half of heart attack cases are driven by high blood pressure. Based on WHO data in Non-Communicable Disease Country Profiles, the prevalence of hypertension in the world as a whole reaches 55% in the elderly. Meanwhile, in Asia it is estimated that 40% of

people suffer from hypertension. Indonesia is a country with a greater prevalence of hypertension when compared to other Asian countries such as Bangladesh, Korea, Nepal, and Thailand. Indonesia has a fairly high number, which is 15% of Indonesia's 230 million population, prevalence of hypertension in Indonesia as large as 36.3%.

Based on existing theories, the causes of hypertension can be divided into 2, namely essential hypertension (primary) and secondary hypertension (Joint National Committee on Prevention Detection, Evaluation, and Treatment of High Pressure, 2019). The elderly is someone who has entered the age of 60 and over (Wiliyanarti, Pipit Festi Kurniawati, Lusinta Dwi Marini, 2019). One of the most often experienced by the elderly is hypertension. In the elderly, the condition of the body will decrease and many complaints occur. The elderly are more susceptible to disease, because with increasing age it will experience a decrease in organ function. The dietary needs of the elderly are not balanced so that

the elderly can experience a decrease in physical condition (Adam, 2019).

Diet is an important factor that determines blood pressure in the elderly. Diet in hypertensive elderly must be maintained properly, good food consumed by the elderly who suffer from hypertension is eating foods that do not contain much high sodium, one of which is (table salt). Efforts to reduce the rise in blood pressure can be done by pharmacological or drug and non-pharmacological means or regulating the diet schedule of the elderly. A good diet for people with hypertension is to avoid foods that are high in saturated fat, foods processed using sodium salt, preserved foods, ready meals and multiply high-fiber foods such as fruits and vegetables that contain potassium and calcium. Based on the background above and the description of the problem, the author is interested in researching more about "Descriptive Study of Diet of the Elderly with Hypertensive Disease at the Kepadangan Health Center".

METHOD

This study uses a quantitative approach with a *cross-sectional* design that aims to determine the relationship between diet and the incidence of hypertension in patients at Puskesmas Buduran Sidoarjo. The *cross-sectional* design was chosen because it allows researchers to observe the independent and dependent variables simultaneously at one time, so that the relationship between the two can be analysed without the need to intervene directly on the research subject.

The population in this study were all hypertensive patients registered at the Buduran Sidoarjo Health Centre from February to March 2023. The study sample was 40 people selected using *random sampling* technique, which is a random sampling method without regard to certain strata or groups, so that each member of the population has the same opportunity to be selected as a respondent. This technique aims to avoid bias in the selection of subjects and increase the external validity of the research results.

Data collection was conducted through two main methods. Firstly, dietary measurement was conducted using a pre-validated structured questionnaire to assess the quality of food intake based on the frequency and type of food consumed. This questionnaire covers aspects of salt consumption, saturated fat, processed foods, and fruit and vegetable consumption. Based on the results of the questionnaire score, the diet was classified into three categories: poor, adequate, and

good. Second, blood pressure measurements were taken using a calibrated digital tensimeter (sphygmomanometer). Measurements were taken twice at five-minute intervals under resting conditions to ensure accuracy and consistency of results. The measurement results were classified into the categories of grade 1 hypertension and grade 2 hypertension according to the guidelines of the Joint National Committee (JNC 8), namely grade 1 hypertension if the systolic pressure is in the range of 140-159 mmHg and diastolic 90-99 mmHg, and grade 2 hypertension if the systolic pressure is ≥ 160 mmHg and diastolic ≥ 100 mmHg.

Data analysis used the chi-square statistical test to test the relationship between diet and the degree of hypertension. This test was chosen because it is suitable for analysing the relationship between two categorical variables. The significance value was determined at the 90% confidence level ($\alpha = 0.10$) given the exploratory nature of this study. Analyses were conducted using the latest version of SPSS statistical software to ensure accuracy of results and ease of interpretation.

RESULT

Table 1 Frequency distribution based on diet in Hypertensive patients at Buduran Sidoarjo Health Center in March 2023.

No	Score Categories	Frequency	Percentage
1	Less	23	57,5%
2	Enough	12	30,0%
3	Good	5	12,5%
Sum		40	100%

Table 1 can be seen that from 40 hypertensive respondents at the Buduran Sidoarjo Health Center, with less categories of 20 people (50%), with sufficient categories of 8 people (20%), and with good categories of 12 people (30%). From the table above, it shows that most respondents with less diet.

Table 2 Frequency distribution based on blood pressure in Hypertensive patients at Buduran Sidoarjo Health Center in March 2023.

No	Sistol	Frequency	Percentage
1	Grade 1 hypertension	23	57,5%
2	Hypertension 2nd degree	17	42,5%
Sum		40	100%

From table 2, it can be seen that from 40 hypertensive respondents at the Buduran Sidoarjo Health Center, the incidence of hypertension with

the category of grade 1 hypertension is 23 people (65%) and degree 2 hypertension is 17 people (17%). From the table above, it shows that respondents at the Buduran Sidoarjo health center suffer from grade 1 hypertension.

Table 3 Cross-tabulation of the relationship between diet and the incidence of hypertension at the Buduran Sidoarjo Health Center in March 2023

Pola Eat	Hypertension					
	HT Grade I		HT Grade II		Total	
	F	%	F	%	F	%
Good	2	5,0 %	3	7,5 %	5	12,5 %
Enough	10	25,0 %	2	5,0 %	12	30,0 %
Less	11	27,5 %	1	30,0 %	23	57,5 %
Total	23	57,5 %	17	42,5 %	40	100%
Uji chi-square rho = 0,091						

Based on table 3 shows the analysis with the chi-square correlation statistical test, a significant value of $p = 0.091$ means that p is less than 0.10, then H_0 is rejected. So it can be known that there is a relationship between diet and the incidence of hypertension at the Buduran Sidoarjo Health Center.

DISCUSSION

Diet of Hypertensive Patients at Puseksmas Buduran Sidoarjo

From table 1, it can be seen that of the 40 hypertensive respondents at the Buduran Sidoarjo Health Center, with less categories of 23 people (57.5%), with sufficient categories of 12 people (30%), and with good categories of 5 people (12.5%). From the table above, it shows that most respondents with less diet. According to researchers, this is because the majority of respondents have low education so that many people have less knowledge, many respondents do not work or even choose to become housewives so that it also affects economic factors in society, low economy is very influential in choosing food for daily life.

Incidence of Hypertension at Buduran Sidoarjo Health Center

From table 2, it can be seen that of the 40 hypertensive respondents at the Buduran Sidoarjo Health Center, the incidence of hypertension with the category of grade 1 hypertension is 23 people (57.5%) and degree 2 hypertension is 17 people (42.5%). From the table above, it shows that

respondents at the Buduran Sidoarjo health center suffer from grade 1 hypertension. Blood pressure results showed that the majority of respondents at the Buduran Sidoarjo Health Center were systolic 140-159 mmHg and diastolic 90-99 mmHg, where the category was included in grade 1 hypertension. According to researchers, this is caused by one of them, namely the existence of a poor diet, and the majority of age, namely the elderly, and the majority of respondents have low education so that many people have less knowledge, lack of rest because some male respondents are workers, from there it can be taken that hypertension can arise.

The relationship of diet with the incidence of hypertension

Based on the analysis using the *chi square* correlation statistical test, a significant value of $p = 0.091$ was obtained, meaning a value of $p < 0.10$. So it was produced that there was a relationship between diet and the incidence of hypertension at the Buduran Sidoarjo Health Center. From the study, it was found that in the Buduran Sidoarjo health center area, respondents with poor or less diet tended to have a higher hypertension status. According to researchers, diet is very important. If the diet is not regulated properly, it will affect human health. Because many respondents who cannot control their diet such as liking salty, fatty, and fast food from there can cause hypertension. The results of this study show a relationship between diet and hypertension status so that there is a significant relationship between diet and hypertension status

CONCLUSION

The results of this study indicate that there is a relationship between dietary patterns and the incidence of hypertension in patients at Puskesmas Buduran Sidoarjo. Most respondents with poor diet tended to experience grade one hypertension. This finding confirms the important role of diet as a significant risk factor in the development of hypertension, especially in the elderly. An unbalanced diet, high in salt, saturated fat, and fast food consumption can trigger an increase in blood pressure.

SUGGESTION

Future research is recommended to include a larger sample size and cover a wider area to improve the generalisability of the results. In addition, longitudinal studies are needed to evaluate the impact of changes in dietary patterns on blood pressure in the long term. Interventions based on nutrition

education and regular monitoring of blood pressure can also be studied further to reduce the prevalence of hypertension in the community.

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