

BACHELOR OF NURSING STUDY PROGRAM ABDI NUSANTARA HEALTH SCIENCE HIGH SCHOOL JAKARTA

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Introduction often shows no symptoms. The purpose of this study was to determine the relationship between diet and nutritional status with the incidence of hypertension. **Methods:** The research was conducted using a cross sectional approach. The sample collection technique uses a food frequency questionnaire and nutritional status uses a total sampling technique. **Research Results:** The analysis used in this study was univariate and bivariate and used the chi-square test. With a sample size of 50 respondents who met the inclusion and exclusion criteria. univariate results: respondents aged 46-55 years 40%, female sex 58%, last higher education (\geq SMA) 56%, it was concluded that there was a difference in the level of knowledge of hypertension before being given education and after being given education, the respondent's eating pattern was not good 72%, respondents with more nutrition 38%, respondents with hypertension 56%. Results of bivariate analysis: on the chi-square test eating pattern with p-value (0.000) <0.05 , and p-value nutritional status (0.004) <0.05 . **Conclusion:** from the results of the study it can be concluded that there is a significant relationship between diet and nutritional status with the incidence of hypertension.

Key words: Hypertention; Diet and Nutrition; Education

INTRODUCTION

Hypertension is an increase in arterial blood pressure in which the systolic blood pressure is more or equal to 140 mmHg or the diastolic blood pressure is more or equal to 90 mmHg or both. Hypertension is called the silent killer because it often shows no symptoms (Ministry of Health RI, 2018). Patients with hypertension accompanied by complications in target organs such as the heart, kidneys, brain and eyes if prevention is too late can reduce life expectancy due to weak function of these organs which results in disability and even death. In addition, hypertension will add to the economic burden which will also indirectly affect welfare at the household, regional and national levels (Oktaviarini et al., 2019). World Health Organization (WHO) data for 2019 shows that hypertension is a non-communicable disease which is one of the main causes of premature death in the world. The World Health Organization (WHO) estimates that currently the global prevalence of hypertension is 22% of the total world population. Hypertension sufferers who make efforts to control their blood pressure are only less than one-fifth (WHO, 2019).

The African Region Has the Highest Prevalence of Hypertension at 27%. Southeast Asia is in the 3rd highest position with a prevalence of 25% of the total population. WHO estimates

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that 1 in 5 women worldwide have hypertension. This number is greater than the male group, which is 1 in 4 (RI Ministry of Health, 2019).Hypertension Still a problem in Indonesia, Bekasi district is an area that has a high prevalence of hypertension. When viewed from the prevalence of sufferers, in 2013 Bekasi district had a prevalence of around 30.0% and increased to 32.8% in 2018 (Ministry of Health RI, 2013b), (Ministry of Health RI, 2019b) hypertension is included in the 10 highest disease patterns in Bekasi district health centers in 2018 and is also included in the 10 diseases that cause the highest deaths in 2011 (Bekasi District Health Office, 2019), (Kristina et al., 2019). In addition, this non-communicable disease is one of the causes of stroke which is none other than the disease that causes the number one death in Bekasi district (Kristina el al., 2019)

There are factors that can increase the risk of hypertension, including individual characteristics (age, gender, history of hypertension), diet (fat, sodium and potassium consumption habits), and lifestyle (smoking habits, alcohol consumption, stress, coffee consumption). , as well as physical activity). Therefore, one of the efforts that can be made to prevent hypertension is by making dietary adjustments such as a low-salt diet, managing obesity, and lifestyle modifications. Lifestyle changes can also be closely related to the knowledge of each individual to prevent hypertension. Another risk factor that can affect the occurrence of an increase in blood pressure is nutritional status. Nutritional status that can affect the rate of recurrence in hypertensive patients is overweight. The heavier the body mass, the more blood it needs to supply oxygen and food to the body's tissues. That is, the volume of blood circulating through the blood vessels increases so that it will put greater pressure on the artery walls (Yulianti & Maloedyn, 2006). Assessment of nutritional status through anthropometry can be used to assess overweight and obesity.

Control of hypertension can be done by changing lifestyles including diet (reducing salt consumption, consumption of fat), increasing physical activity (hypertension gymnastics, jogging and others), not smoking, increasing healthy lifestyle, providing healthy food and accelerating nutritional improvement, increasing prevention and early detection of disease, improvement of environmental quality and promotion of healthy living education. It is hoped that the results of this study can add to library materials and can be a guide for students to obtain more complete information so as to facilitate students in providing health explanations to the wider community about hypertension. The purpose of this study was to determine the relationship between diet and nutritional status with the incidence of hypertension.

METHODS

This study used a quantitative research design with a cross sectional approach. With a sample of 50 respondents. The tools used to collect data were the FFQ questionnaire and nutritional status, tensimeter, microtoise and bathroom scale and digital scales. The analysis used in this study was univariate analysis which included age, sex, recent education, diet, nutritional status and incidence of hypertension. Meanwhile, bivariate analysis in this study was used to determine the relationship between diet and nutritional status with the incidence of hypertension in the outpatient ward of the Happy Public

RESULTS

Univariate Analysis Results

1. Characteristics of Respondents by Age

Table 1. Distribution of respondent characteristics based on age in the happy outpatient clinic in 2023

Age (Year)	Frequency	Percentage (%)
Late teens (17-25 th)	2	4%
Early adulthood (26-35 th)	1	2%
Late adulthood (36-45 th)	5	10%
Early seniors (46-55 th)	20	40%
Final senior (56-65 th)	16	32%
Old human > 65 th	6	12%
Total	50	100%

Based on Table 1. above, shows that the frequency of respondents based on age category in the Happy Health Center Outpatient Room is mostly 46-55 years old (early elderly) a total of 20 respondents (40%), aged 56-65 years (late elderly) a total of 16 respondents (32%) , age > 65 years (seniors) 6 respondents (12%), ages 36-45 years (late adults) 5 respondents (10%), ages 17-25 years (late teens) 2 respondents (4%) and aged 26-35 years (early adulthood) a number of 1 respondent (2%).

2. Characteristics of Respondents Based on Gender

Table 2. Distribution of respondent characteristics based on gender in the happy outpatient clinic in 2023

Sex	Frequency	Percentage (%)
Male	21	42%
Female	29	58 %
Total	50	100 %

In Table 2. above, shows that the frequency of respondents is based on gender, 29 female respondents (58%) and 21 male respondents (42%).

3. Characteristics of Respondents Based on Education Level

Table 3. Distribution of respondent characteristics based on education level in the happy health center outpatient ward in 2023

Level of education	Frequency	Percentage (%)
lower (\leq SMP)	22	44%
high (\geq SMA)	28	56%
Total	50	100%

Based on Table 3. above, shows that the frequency of respondents based on recent education is most educated \geq SMA numbering 28 respondents (56%), and Education \leq SMP numbering 22 respondents (44%).

4. Characteristics of Respondents Based on Independent Variables

Table 4. Distribution of respondent characteristics based on eating patterns in the Out patient ward of the Happy Public Health Center in 2023

Dietary habit	Frequency	Percentage (%)
Not good if the average score is 15-50	36	72%
Good if the average score is 0-14	14	28%
Total	50	100%

Based on Table 5 above, it shows that the frequency of respondents Based on eating patterns, unhealthy eating patterns are the highest with a total of 36 respondents (72%) and good eating patterns with 14 respondents (28%).

Table 5. Distribution of respondents' characteristics based on nutritional status in the happy outpatient clinic in 2023

Nutritional Gizi	Frequency	Percentage (%)
Over (IMT>25)	19	38%
Normal (IMT=18,5-25)	17	34%
Not Enough (IMT<18,5)	14	28%
Total	50	100%

Based on Table 5 above, it shows that the frequency of respondents Based on nutritional status, overnutrition status was 19 respondents (38%), normal nutritional status was 17 respondents (34%), and undernutrition status was 14 respondents (28.0%).

5. Characteristics of Respondents Based on the dependent variable

The dependent variable in this study is the incidence of hypertension.

Table 6. Distribution of respondent characteristics based on the incidence of hypertension in the happy outpatient clinic in 2023

Incidence of hypertension	Frequency	Percentage (%)
hypertension (> 140 mmhg / >90 mmhg)	28	56%
Without hypertension (<140 mmhg/< 90 mmhg)	22	44%
Total	50	100%

Based on Table 6 above, it shows that the frequency of respondents Based on the incidence of hypertension, hypertension was 28 respondents (56%) and not hypertension was 22 respondents (44%).

Results of Bivariate Analysis

1. The Relationship between Diet and Hypertension

Table 7. The Relationship between Diet and Hypertension In the Happy Health Center Outpatient Room in 2023

No	Diet	Incidence of hypertension	total	P value
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		hypertension		Without hypertension				0.000
		n	%	n	%	N	%	
1	Tidak baik	26	52%	10	20%	36	72%	0.000
2	Baik	2	4%	12	24%	14	18%	
Total		28	56%	22	44%	50	100%	

Unhealthy eating pattern, 26 respondents (52%) suffer from hypertension and 10 respondents (20%) do not suffer from hypertension. While respondents who have a good diet who suffer from hypertension are as many as 2 respondents (4%), and those who do not have hypertension are as many as 12 respondents (24%). The results of the Chi Square analysis test obtained a Continuity Correction P-value = 0.000 (P-value < α 0.05), so it can be concluded that there is a significant relationship between adherence to the incidence of hypertension in the Happy Public Health Center outpatient room in 2023.

2. Relationship between nutritional status and hypertension

Table 8. The Relationship between Nutritional Status and the Incidence of Hypertension in the Outpatient Room of the Happy Health Center in 2023

No	Nutritional status	Incidence of hypertension				total		P value
		hypertension		Without hypertension				
		N	%	n	%	n	%	
1	Over	16	32%	3	6%	19	38%	0.004
2	Normal	8	16%	9	18%	17	34%	
3	Not Enough	4	8%	10	20%	14	18%	
Total		28	56%	22	44%	50	100%	

Based on Table 8 above, the results of the analysis of the relationship between nutritional status and the incidence of hypertension in the outpatient ward of the Happy Public Health Center in 2023, show that 16 respondents (32%) with excess nutritional status suffer from hypertension and 3 respondents (6%) do not suffer from hypertension. . Meanwhile, 8 respondents (16%) who had normal nutritional status who suffered from hypertension, and 9 respondents (18%) who did not have hypertension. And respondents with poor nutritional status who suffered from hypertension were 4 respondents (8%), and those who did not suffer from hypertension were 10 respondents (20%). The results of the Chi Square analysis test obtained a Continuity Correction P-value = 0.004 (P-value < α 0.05), so it can be concluded that there is a significant relationship between nutritional status and the incidence of hypertension in the outpatient ward of the Happy Public Health Center in 2023.

DISCUSSION

1. Univariate analysis

1. Characteristics of Respondents by Age

Table 5 shows that the characteristics of the 50 respondents based on age group were found that the most respondents were aged 46-55 years (early elderly) of 20 respondents

(40%). The older a person is, the more at risk of developing hypertension. As explained by (Khomsan, 2003) that age is one of the factors that affect blood pressure. Age is related to blood pressure (hypertension). The older a person is, the more at risk of developing hypertension or high blood pressure. Hasurungan's study in Rahajeng and Tuminah (2009) found that in the elderly compared to ages 55-59 years to 60-64 years there was an increased risk of hypertension by 2.18 times, aged 65-69 years 2.45 times and aged > 70 years 2.97 times. This happens because at that age the large arteries lose their flexibility and become stiff because of that blood in every heartbeat is forced to pass through narrower blood vessels than usual and causes blood pressure to rise (Sigarlaki, 2006)

2. Characteristics of Respondents Based on Gender

In Table 2 it shows that the characteristics of the 50 respondents based on gender were obtained, that among female respondents there were 29 respondents (58%). and men, 21 respondents (42%). Based on the results of Wahyuni and Eksanoto's research (2013), women tend to suffer from hypertension than men. In that study, 27.5% of women had hypertension, while only 5.8% of men had it. Women will experience an increased risk of high blood pressure (hypertension) after menopause, which is over 45 years of age. Women who are not yet menopausal are protected by the hormone estrogen which plays a role in increasing levels of High Density Lipoprotein (HDL). Low HDL cholesterol levels and high LDL cholesterol (Low Density Lipoprotein) affect the process of atherosclerosis (Anggraini et al, 2009). Atherosclerosis is hardening of the arteries caused by blockages in the arteries (Nurahmi, 2006).

3. Characteristics of the last Education Respondents

In Table 4 it shows that the characteristics of 50 based on education obtained that the most recent education was education \geq SMA a number of 28 respondents (56%). Education is a process of growing all abilities and behaviors through teaching, so education needs to consider age and its relationship to the learning process. The results of the 2007 Riskesdas in the Indonesian Ministry of Health (2008) stated that hypertension (high blood pressure) tends to be high at low levels of education and decreases with increasing education. The high risk of developing hypertension with low education may be due to a lack of knowledge in someone with low education about health and it is difficult or slow to receive information (counseling) provided by officers so that it has an impact on healthy behavior/lifestyle (Anggara and Prayitno, 2013).

4. Characteristics of Respondents Independent Variables

The independent variables in this study were diet and nutritional status Table 5 shows that the characteristics of 50 based on diet, it was found that there were many people with bad eating patterns who suffered from hypertension as many as 36 respondents (72%). Diet is a way or behavior of a person in choosing food ingredients to be consumed every day, which includes the type of food, the amount of food and the frequency of food with specific purposes such as maintaining health, nutritional status and helping to cure disease (Ministry of Health, 2019). Table 5.6 shows that the characteristics of 50 based on nutritional status obtained more nutritional status in the number of 19 respondents (38%). The results of the identification of statements related to nutritional status indicate that the respondent assumes that eating a lot can make the body healthy, regardless of nutritional intake and the nutrients contained therein.

2. Bivariate analysis

1. Relationship between diet and hypertension

Based on Table 7, it can be shown the relationship between eating patterns and the incidence of hypertension in the Happy Health Center outpatient room in 2023, showing that the majority of respondents with bad eating patterns were as many as 36 respondents (72%) with P-value = 0.000. P value < α (0.05), therefore, it can be concluded that there is a significant relationship between diet and the incidence of hypertension in the outpatient ward of the Happy Health Center in 2023.

According to the researchers' assumptions, lifestyle in society is one of the factors in the occurrence of hypertension. These lifestyle changes include excessive physical activity, stress, changes in eating patterns that are not good/unhealthy and lack of rest. The type of modern food that is currently often consumed is a major contributor to the occurrence of hypertension.

2. Relationship between nutritional status and hypertension

Based on Table 8, it can be shown that the relationship between nutritional status and the incidence of hypertension in the Happy Health Center outpatient room in 2023 shows that the most respondents with nutritional status are 19 respondents (38%) with a P-value of 0.004, P-value < α (0.05). Therefore, it can be concluded that there is a significant relationship between nutritional status and the incidence of hypertension in the outpatient ward of the Happy Health Center in 2023.

The Ministry of Health of the Republic of Indonesia explained that excess nutrition is related to lifestyle and excessive consumption patterns from a young age, even from childhood. In addition, metabolic processes decrease with age and if not balanced with increased physical activity or increased food consumption, it will result in too many calories. Excess will be converted into fat, causing obesity. This shows that overweight nutritional status must also remain a concern because it can trigger degenerative diseases (Amila, nurul utami, 2020)

CONCLUSION

Based on the results of the research that has been done, it can be concluded that out of 50 respondents it shows that the highest frequency is bad eating patterns with a total of 36 respondents (72%), and more nutritional status with a total of 19 respondents (38%). There is a significant relationship between diet and the incidence of hypertension P-value = 0.000 (P-value < α 0.05). And also. There is a significant relationship between nutritional status and the incidence of hypertension with P-value = 0.004 (P-value < α 0.05). And the description of the characteristics of respondents based on the variable incidence of hypertension shows the highest frequency in respondents with hypertension.

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