

Original Research

The Level of Knowledge of Lifestyle is Related to The Incidence of Hypertension in The Elderly in Beji Village, Sidoarum District, Sleman Regency

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ABSTRACT

Introduction: Hypertension is a condition of a person experiencing an increase in blood pressure above normal and is still a dangerous health problem in the elderly because if it is not controlled it will develop and cause dangerous complications. Hypertension can be caused by several factors such as age, stress, obesity, smoking, drinking alcoholic beverages, kidney disorders and so on.

Methods: This study uses quantitative methods with a correlational study design and a cross-sectional approach. The sample of this study amounted to 34 elderly people in Beji village, Sidoarum Sleman district. The sampling technique in this study was total sampling technique. Data collection techniques using questionnaires and blood pressure checks. The analysis technique used the chi-square test.

Results: In the Univariate analysis, it was found that the level of knowledge of lifestyle was not good in the elderly as many as 7 respondents (20.6%) with the incidence of hypertension as many as 17 respondents (50.0%). The results of the chi-square test obtained P value <0.05 (0.034) which means that there is a relationship between the level of knowledge about lifestyle and the incidence of hypertension in the elderly in beji village, sidoarum district, sleman regency.

Conclusion: It is very important to improve communication, consultation, and counseling about hypertension and how to prevent it through a healthy lifestyle in the elderly on a regular and sustainable basis. The elderly are expected to take action to prevent hypertension by gaining better knowledge about this problem through the media and by participating in health counseling activities held by the health department, especially the sidoarum health center.

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Introduction

Hypertension is the most common cause of cardiovascular disease and is also a major problem in developed and developing countries. People with hypertension also do not know if they have a history of hypertension and will soon be known if several complications occur. Hypertension occurs because it is influenced by many factors and can occur quickly and slowly. Hypertension can be caused by several factors such as age, stress, obesity, smoking, drinking alcoholic beverages, kidney disorders and so on. (Sulastrri et al. 2021). In Indonesia, there are an estimated 63,309,620 cases of hypertension, with a mortality rate of 427,218. The high number of hypertension cases in Indonesia is partly due to unhealthy lifestyles and lack of socialization among the general public. (Gianevan and Puspita 2024).

Hypertension in Yogyakarta is a serious health problem in recent years (MOH RI, 2019). Hypertension is always ranked first in the top ten highest diseases in DIY. Based on the percentage, in 2021 hypertension accounted for 76.9% of the top ten highest diseases affecting the population in DIY, Based on data from bappeda.jogjaprovo.go.id, the number of people with hypertension in the

Special Region of Yogyakarta (DIY) in 2024 is estimated to reach 146,975 people. While in Sleman people affected by hypertension as many as 6,596 patients in treatment, blood pressure under control 47.42%, uncontrolled blood pressure as much as 25.56% and not visiting as much as 27.02%.

Lifestyle is something that greatly affects the lives of the elderly because they have to adjust to the natural decline in the function of their sensory organs and limbs both physically, mentally and emotionally. Unhealthy lifestyles are one of the top ten causes of death and disability in the world. More than two million deaths each year are caused by lack of movement or physical activity so that an unhealthy lifestyle can cause hypertension, for example due to food, physical activity, stress, and smoking, and stress management are all factors that can cause hypertension. (Anas Dwi Yulinar Burhan et al. 2020)

Lifestyle greatly affects a person's physical and psychological condition. Changes in lifestyle and lack of healthy living behaviors such as poor diet, the proportion of rest that is not balanced with the activities carried out, lack of exercise, unhealthy habits such as smoking, drinking alcoholic beverages, consumption of certain drugs and stress are one of the causes of hypertension. Lack of physical activity is one of the main risk factors for non-communicable disease mortality. People who are less active have a 20% to 30% increased risk of death compared to people who are moderately active. Smoking is a health problem that increases blood pressure and pulse rate. Increased blood pressure is caused by nicotine which constricts blood vessels and forces the heart to work harder. (Sulastri et al. 2022)

Two factors that cause hypertension are genetic factors (heredity) and lifestyle. Genetic factors cannot be controlled, but lifestyle factors can be controlled by living a healthy lifestyle. When an unhealthy lifestyle is practiced, it can trigger hypertension. Unhealthy lifestyles include, lack of physical activity, eating fatty and salty foods excessively, drinking beverages containing caffeine, smoking, stress. (Raziansyah and Ridha Amalia 2022)

From the data on the incidence of hypertension, this study becomes relevant to understand the knowledge of hypertension and can help in controlling this condition because with adequate knowledge, a person will be more likely to regularly undergo health checks and adhere to recommended treatment. This study is expected to contribute to the world of education and health, as well as a reference for families in directing to overcome the incidence rate of hypertension in the right way.

Method

This type of research is quantitative research with a correlational study design and a cross-sectional approach. This approach was taken to analyze the relationship between the level of knowledge about lifestyle and the incidence of hypertension in the elderly in Beji village, Sidoarum district, Sleman regency., which amounted to 34 elderly people. The sample was taken using a total sampling technique of 34 elderly people. Data were collected using a questionnaire that had been tested for validity and reliability in previous studies.

The analysis in this study consists of univariate analysis and bivariate analysis. Univariate analysis in this study aims to determine the frequency distribution including age, gender and education level of respondents. This bivariate analysis was carried out using the chi-square test to determine the relationship between the two variables, namely the variable level of knowledge about lifestyle and the variable incidence of hypertension in the elderly whether it could determine whether there was an influence between them.

This study focuses on the relationship between the level of knowledge about lifestyle and the incidence of hypertension in the elderly. Independent variable: Level of knowledge about lifestyle, Dependent variable: Incidence of hypertension, Confounding variables: Age, Gender and Education.

Results

This study aims to determine the relationship between the level of knowledge about lifestyle and the incidence of hypertension in the elderly in Beji village, Sidoarum Sleman regency. Sampling in the study using non-probability sampling techniques with total sampling techniques with the criteria of male and female gender totaling 34 in Beji village.

Table 1. Frequency Distribution of Respondent Characteristics Based on Age

No	Age	Frequency (f)	Percentage (%)
1	60-69	21	61.8%
2	70-79	11	32.4%
3	> 80	2	5.9%
Total		34	100%

Based on table 1, it can be seen that the characteristics of respondents based on age show that most of them are 60-69 years old with 21 respondents (61.8%).

Table 2. Frequency Distribution of Respondent Characteristics Based on Gender

No	Gender	Frequency (f)	Percentage (%)
1	Male	14	41.2%
2	Female	20	58.8%
Total		34	100%

Based on table 2, it can be seen that the characteristics of respondents based on gender show that most of the respondents are female with a total of 20 respondents (58.8%) while men are 14 respondents (41.2%).

Table 3. Frequency Distribution of Respondent Characteristics Based on Education

No	Education	Frequency (f)	Percentage (%)
1	SD	11	32.4%
2	SMP	4	11.8%
3	TS	19	55.9%
Total		34	100%

Based on table 3, it can be seen that the characteristics of respondents based on education show that most of the respondents who are not in school are 19 respondents (55.9%) while a small proportion of respondents have a junior high school education level, namely 4 respondents (11.8%) and elementary school, namely 11 respondents (32.4%).

Table 4. Frequency Distribution of Respondent Characteristics Based on the level of knowledge about lifestyle

No	Level of knowledge about lifestyle	Frequency (f)	Percentage (%)
1	Good	27	79.4%
2	Not Good	7	20.6%
Total		34	100%

Based on table 4, it can be seen that the characteristics of respondents based on the level of knowledge about lifestyle show that respondents who have a good level of knowledge about lifestyle are 27 respondents (79.4%). While respondents who have a level of knowledge about lifestyle is not good amounted to 7 respondents (20.6%)

Table 5. Frequency Distribution of Respondent Characteristics Based on the Incidence of Hypertension

No	Incidence of Hypertension	Frequency (f)	Percentage (%)
1	Normal	17	50.0%
2	Hypertension	17	50.0%
Total		34	100%

Based on table 5, it can be seen that the characteristics of respondents based on the incidence of hypertension show that most respondents suffer from hypertension and not hypertension are equal in number, namely (50.0%).

Table 6. The relationship between the level of knowledge about lifestyle and the incidence of hypertension in the elderly in beji village, sidoarum district, sleman regency

No	Knowledge level about lifestyle	Incidence of Hypertension					
		Normal		Hypertension		Total	
		f	%	f	%	f	%
1	Good	16	59.3%	11	40.7%	27	100%
2	Not Good	1	14.3%	6	85.7%	7	100%
Total		17	50.0%	17	50.0%	34	100%

Based on table 6 shows that out of a total of 34 respondents, most of the respondents showed that the number of respondents who had a poor level of knowledge about lifestyle and experienced hypertension was 6 respondents (85.7%) and not hypertension was 1 respondent (14.3%), while respondents with a good level of knowledge about lifestyle and experienced hypertension were 11 respondents (40.7%) and not hypertension as many as 16 respondents (59.3%).

Based on the results of data analysis with the chi square test, the P value <0.05 (0.034) can be concluded that H_a is accepted and H_o is rejected, so the hypothesis shows that there is a relationship between the level of knowledge about lifestyle and the incidence of hypertension in the elderly in Padukuhan Beji village, Sidoarum district, Sleman Regency.

Conclusion

1. Level of Knowledge about Lifestyle in the Elderly

The level of knowledge about lifestyle in the elderly is known that almost half of the respondents have a level of knowledge about lifestyle shows that of the 34 elderly respondents, the majority have a good level of knowledge about healthy lifestyles, as many as 27 respondents (79.4%). While the rest, namely 7 respondents (20.6%) have an unfavorable level of knowledge. Analysis of the questionnaire showed that most of the questions that had the highest score were 21, for question items covering the level of knowledge about physical activity, diet, coffee consumption and smoking habits. The habit of consuming food sources of caffeine causes an increase in the secretion of ketocalamins, namely adenosine, serotonin, and dopamine. The increase in adenosine secretion affects the work of the central nervous system and causes an acceleration of heart rate, as well as blood vasodilation, so that someone who has a habit of consuming caffeine-source foods tends to have higher blood pressure when compared to those who rarely or not at all consume caffeine-source foods. (Sutarjana 2021)

These results are supported by research (Kurnia and Ramadhanti 2022) found that 30.2% of elderly people suffering from hypertension in Nagarasari Village have smoking habits, the elderly suffering from hypertension mostly do not do physical activity by 68.3%, the elderly suffering from hypertension consume the most salty / salt foods by 57.1% and the elderly suffering from hypertension who have the habit of consuming caffeine / coffee by 44.4%.

However, the prevalence of hypertension remained high at (50.0%), which means half of the respondents had high blood pressure. This shows that although most of the elderly have good knowledge, there are still other factors such as age, stress, old habits, or comorbidities that affect the incidence of hypertension.

According to (Tiarmawati Sembiringa, Yandri Ratu Sepehb 2023) Various factors that play a role in hypertension, one of which is a modern lifestyle such as changes in food consumption patterns in the elderly with a tendency to choose foods that have a high composition of salt content, high calories, high fat, low fiber and so on and behavioral habits lack of exercise or physical activity such as just sitting lazily at home, not doing activities such as cleaning the house and not wanting to do regular exercise such as walking every morning around the house. The habit of smoking and drinking coffee every day is also stated as a factor that contributes to hypertension.

In the physical activity questionnaire question (52.9%) the elderly always do physical activities such as walking, cycling, gymnastics etc., while (44.1%) the elderly rarely do physical activities. The number of respondents who have not answered this question is due to the respondent's lack of knowledge about good physical activity that can prevent disease, according to the elderly people who often exercise and move can also suffer from hypertension the same as people who only move in the house as usual.

In the knowledge questionnaire question about coffee consumption, it shows that (29.4%) of the elderly sometimes drink coffee while (25.6%) of the elderly always drink coffee. According to the elderly, coffee does not cause hypertension but can treat dizziness and does not cause drowsiness, so they can move well. This shows that of the 34 respondents studied, most consume coffee, indicating that they do not know about the effects or consequences of consuming coffee for the elderly with hypertension.

In addition, the education level of respondents, the majority of whom had no school education (55.9%), would also have an impact on the information obtained by respondents previously due to the lack of information sources about hypertension. In addition, in the elderly, their organ functions degenerate, including a decrease in cognitive function, which makes it more difficult for them to receive information, so their knowledge is reduced.

2. Incidence of Hypertension in the Elderly

Based on the results of the study, it can be seen that of the total respondents as many as 34 respondents, most of the respondents who experienced hypertension and not hypertension were equal in number, namely (50.0%). the highest systolic pressure reached 180 mmHg, while the highest diastolic pressure was 100 mmHg. According to (Ministry of Health, 2025) an individual is said to have hypertension if his blood pressure is consistently 140/90 mmHg or higher. The results of the research analysis showed that of the 17 respondents (50.0%) the elderly who suffered from hypertension were aged 60 -> 80 years.

This is in line with research conducted by (Dewi 2022) which states that there is a significant relationship between lifestyle and the incidence of hypertension where 41 (77.4%) respondents experience hypertension and an unhealthy lifestyle totaling 36 people (81.8%) and the results of this study are also in line with research conducted (Damanik and Sitompul 2020) on the relationship between lifestyle and hypertension in the elderly that the elderly who experience hypertension are categorized as grade 1 hypertension as many as 22 respondents (73.3%) and grade 2 hypertension as many as 8 respondents (26.7%). The results of this study indicate that many elderly people suffer from hypertension with different blood pressure values, but are still categorized as hypertension.

Factors that influence the occurrence of hypertension are divided into two groups, namely factors that can be changed and those that cannot be changed. Unchangeable factors such as gender, age, and genetics. While factors that can be changed such as knowledge, physical activity and diet. For hypertension to occur, it is necessary for the role of these risk factors together (common underlying risk factor), in other words, one risk factor alone is not enough to cause hypertension (Jessica Ludowika Itlay 2024).

The level of education of respondents in the results of this study showed that most respondents who did not go to school experienced hypertension (55.9%). A low level of education will indirectly affect the occurrence of hypertension. Health education is one of the efforts that can be done to prevent hypertension. Methods commonly used in health education include movies, pamphlets, leaflets and lectures.

Health education can increase knowledge because in health education there is learning which is a communication process. In a communication process always shows three main components, namely the message sender component (speaker), the message receiver component (student), and the message component itself such as material about hypertension. Increasing one's knowledge is also influenced by several factors, the first of which is internal factors, for example in terms of the children's interest in what the researcher conveyed because interest is a tendency or high desire for something. Interest makes a person try and pursue something and ultimately gain deeper knowledge (Sukri et al. 2024).

3. Relationship between Level of Knowledge about Lifestyle and Incidence of Hypertension in the Elderly

Based on the results of data analysis with the chi square test, it shows that there is a relationship between the level of knowledge about lifestyle and the incidence of hypertension in the elderly in beji village, sidoarum sleman district, obtained a P value <0.05 (0.034). The study showed that the level of knowledge about lifestyle was good but most of the respondents suffered from hypertension and not hypertension by the same amount (50.0%)

Although the level of knowledge about the lifestyle of the elderly is good, this shows that not only the level of knowledge that causes hypertension, but many factors cause hypertension. According to (Purnama Ria Sihombing et al. 2023) Sociodemographic, environmental and behavioral factors, racial and ethnic differences tend to be the main contributors to the average blood pressure and prevalence of hypertension. In addition, several modifiable risk factors, such as high sodium intake, low potassium intake, alcohol consumption, obesity, lack of exercise, and unhealthy eating habits, are associated with an increased risk of hypertension.

This study is in line with the research conducted by (Islami and Harif Fadhillah 2021) research obtained the level of knowledge with the incidence of hypertension P Value $0.01 <0.05$, there is a significant relationship between the relationship between lifestyle and the incidence of hypertension P Value = $0.01 <0.05$ with the results of most respondents in the category of respondents having an unhealthy lifestyle hypertension amounted to 36 people (81.8%) and respondents who had an unhealthy lifestyle with normal blood pressure amounted to 8 people (18.2%). While respondents who have a healthy lifestyle have hypertension totaling 16 people (41.0%) and respondents who have a healthy lifestyle with normal blood pressure totaling 23 people (59.0%).

Knowledge can improve the prevention of stroke with hypertension treatment. Knowledge is a fundamental need in an effort to improve the prevention behavior of hypertension complications. Lack of knowledge about hypertension complications can affect the behavior of preventing hypertension complications caused by changes in life style, consuming foods that are high in fat, smoking and excessive anxiety (Sulastri et al. 2021)

An unhealthy lifestyle can be a risk factor for hypertension, such as low physical activity, stress and smoking. Lack of physical activity puts you at risk of increased body fat, weight gain, and too high blood pressure. People who are less active tend to have a faster heart rate. The heart muscle has to work harder each time it contracts. A hard-working heart muscle increases blood pressure. Chemicals contained in cigarettes can damage artery walls and create plaque buildup in blood vessels, as a result the heart will work harder due to the narrowing of blood vessels. Therefore, lifestyle modification is the main thing in controlling high blood pressure. (Rosliana 2023)

This research is also in line with (Saragih and Yunia 2023) the results of the study obtained a p value = 0.00. means p value <0.05 , then there is a relationship between lifestyle and the incidence of hypertension in the elderly with the results that of the 23 elderly people who have an unhealthy lifestyle, 22 people (84.6%) experience the incidence of hypertension “occurs”, and the incidence of hypertension “does not occur” as many as 1 person (10.0%), while of the 13 elderly people who have a healthy lifestyle with the incidence of hypertension “occurs” as many as 4 people (15.4%), and the incidence of hypertension does not occur, namely 9 people (90.0%).

According to the researcher, although the respondents had a good level of knowledge, the awareness of the community to control blood pressure was still far from expected. This is likely due to increased blood pressure not showing symptoms, in addition to a lack of knowledge about the risk factors for increased blood pressure, Increased blood pressure in addition to being influenced by heredity, is closely related to behavior and lifestyle.

Knowledge about hypertension owned by people with hypertension is very necessary, especially knowledge about how to manage the disease in order to achieve optimal health status. with proper handling, high blood pressure can be controlled and the risk of recurrence can be reduced. Combined with lifestyle changes and anti-hypertensive drugs, blood pressure can usually be maintained in a range that does not damage the heart and other organs (Herawati et al. 2022).

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