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Research Article
Factors Associated with Diet Compliance with Hypertension Patients

Fitriyanti Patarru'[1], Mery Solon[2], Graciela Talebong[3], Hana Rannu[4]
[1]STIK Stella Maris Makassar, Program Studi Keperawatan, Indonesia
Jl. Maipa No. 19, Makassar
Email Corespondent:
patarrufitriyanti@yahoo.com

Abstract

Background: Hypertension or high blood pressure is a condition in which a person experiences an increase in blood pressure above normal for a long period. One of the efforts to prevent hypertension is to adhere to the recommended diet. There are several factors related to dietary compliance in patients with hypertension, two of which are family support and education level.
Objectives: The purpose of this study was to determine the relationship between family support and education level with dietary compliance in patients with hypertension.
Methods: This type of research is a quantitative study with an analytical observational design using a cross-sectional approach. Sampling in this study uses non-probability sampling with a total sampling approach and data collection using a questionnaire. This research was conducted in February 2022.
Results: The results of statistical tests using the chi-square test showed that the results for the family support factor were p = 0.001, and the results for the education level factor were p = 0.001. It can be concluded that there is a relationship between family support and education level with dietary compliance in patients with hypertension.
Conclusion: Factors related to hypertension diet compliance are factors of knowledge, family support, motivation, and desire from within to recover.

Keywords: hypertension, dietary compliance, family support

Introduction

Hypertension is defined as high blood pressure where the systolic value is > 140 mmHg and/or the diastolic value is 90 mmHg. Systolic represents the pressure in the blood vessels when the heart contracts or beats and diastolic represents the pressure in the blood

vessels when the heart is resting or relaxing.[1] Hypertension is a condition disease that chronic that can result in the emergence of disease complications disease that turns off from a vascular disease vascular failure heart up to cause death due to cardiac arrest.[2,3] Based on research conducted by WHO, it was found that hypertension affects 22% of the world's population and 36% of cases in Southeast Asia. The population in the Southeast Asian region in general, which is about 1/3 of adults have hypertension, and nearly 1.5 million deaths due to hypertension each year. Whereas specifically, hypertension is a non-communicable disease that globally causes about 53% of all stroke events and 47% causes coronary artery disease.[3]

Based on Health Research Data (Riskesdas) in 2018, the prevalence of hypertension was 34.1% in those aged 18 years, 8.36% based on doctor's diagnosis, and 8.84% in consumption of drugs. It can be interpreted that there is an increase in the prevalence of hypertension. Based on age, the prevalence of hypertension can be grouped into 3, namely the age group of 35-44 with a prevalence of hypertension of 5.73%, the age of 45-54 years of 45.32%, and the age of 55-64 years of 55.23%. In addition, the prevalence of hypertension in men is 31.34% and in women is 36.85% the prevalence in urban residents is 34.43% and in rural residents is 33.72%.[3] In 2018 in South Sulawesi, 7.22% of the population aged 18 years experienced hypertension with a hypertension prevalence of 31.68%. The South Sulawesi provincial health office stated that hypertension in the city of Makassar ranks 3rd out of 24 regencies/cities in South Sulawesi province and is the most common disease and cause of death with a prevalence of 27.61%, and 18.6% in the birth rate.[4] High sodium intake is one of the factors that influence the onset of hypertension which can increase blood plasma volume, cardiac output, and blood pressure. In addition, high sodium levels also reduce the diameter of the arteries, which makes the heart work harder to pump and push the increased volume of blood through tight spaces.[5] According to the Joint National Committee 8 (JNC 8) guidelines for hypertension management, hypertensive patients aged 60 years or older should be treated with a goal of high blood pressure less than 150/90 mmHg, and hypertensive patients 30 years to 59 years of age less than 140/90 mmHg. The same goals are recommended for adults less than 60 years of age who suffer from hypertension, diabetes and chronic kidney disease. Lifestyle changes can be used as initial treatment before starting antihypertensive drugs and as an adjunct to treatment in people already on drug therapy.[6]

Increased blood pressure can be effectively modified through antihypertensive or intensive medication and lifestyle modifications such as a sodium restriction diet, alcohol moderation, and regular exercise. A healthy lifestyle can reduce high blood pressure without any indirect effects and improve overall cardiovascular health. The benefits of a sodium restriction diet, alcohol moderation, and regular exercise are suitable for lowering blood pressure which has been identified in individuals who have not entered the clinical care stage and are still at risk for developing hypertension and are necessary for those who have previously been diagnosed with hypertension. Thus lifestyle modification is highly recommended for hypertensive patients regardless of whether the hypertensive patient is taking antihypertensive drugs, or normotensive individuals, namely implementing a sodium restriction diet, alcohol moderation, and regular exercise.[7] It is very difficult for someone to adhere to their diet because adherence to a diet is influenced by several factors. Dietary compliance in patients with hypertension cannot be separated from factors such as age, occupation, family support, dietary patterns, and education level. Based on these factors, the role of family support is needed in motivating patients to undergo dietary compliance.[8] Based on the results of research conducted by Nita (2018), it was found that there was an influence on the level of dietary compliance with family support at the Payung Sekaki Health Center in 2017. Of the 49 respondents who were supported by their families, 39 respondents, or (48.1%) of them adhered to the diet. hypertension. Meanwhile, of the 32 respondents who did not get support from their families, 21% or 17 of them did not comply with the hypertension diet so that a p-value of 0.002 (p < 0.05) was obtained.[9]

Establishing a hypertension diet is very important because it can minimize the risk of complications compared to those who do not make dietary adjustments. The application of a good hypertension diet can normalize blood pressure, such as reducing foods that are high in salt and fatty foods. In fact, at this time there are still many hypertensive patients who are still not obedient in doing a hypertension diet. This shows that the health behavior of people with hypertension is still not right if they want hypertension to be controlled.[10] Based on the data above, the researcher wants to identify "Factors Associated with Dietary Compliance in Patients with Hypertension

Methods

This research is an analytical observational quantitative research with a cross sectional approach where the analysis of factors related to dietary compliance in patients with hypertension. The independent variables in this study are family support and education level, the dependent variable is dietary compliance. This study uses the Chi Square Test research design. The time of this research was carried out on February 9 to February 12, 2022. This research took place in Berdikari II Hamlet, Gowa Regency. The sample of this study was patients with hypertension who met the inclusion criteria of the researcher with a total sample of 40 people. Methods of data collection using questionnaires of family support and dietary compliance. Data analysis using SPSS 26 program is a statistical method used to analyze and interpret data analytically.

Results
Analysis Univariate
General Data Characteristics
Table 1. Frequency Distribution of Respondents by Age, Gender, and Occupational Diet Compliance in Berdikari II Hamlet, Mata Allo Village, Gowa Regency

Characteristics	Frequency (f)	Percentage (%)
Age (Years)		
40-59	22	55,0
60-90	18	45,0
Total	**40**	**100,0**
Gender		
Man	13	32,5
Woman	27	67,5
Total	**40**	**100,0**
Work		
Businessman	2	5,0
Laborer	7	17,5
Housewife	21	52,5
Government officials	2	5,0
Doesn't work	8	20,0
Total	**40**	**100,0**

Based on table 1 above, shows that the results of the research conducted on 40 respondents in Berdikari II Hamlet, Mata Allo Village, Gowa Regency, obtained the distribution of respondent data based on the age of patients with hypertension, the highest was in the age range of 40-59 years, namely 22 (55.0%) respondents. Furthermore, the distribution of data on hypertension sufferers was found to be mostly female, namely, 27 (67.5%) respondents and the distribution of data on hypertension patients based on

occupation was mostly in Housewife, namely 21 (52.5%) respondents.

Family Support
Table 2. Frequency Distribution of Respondents Based on Family Support in Berdikari II Hamlet, Mata Allo Village, Gowa District

Family Support	Frequency (f)	Percentage (%)
Good	26	65.0
Not enough	16	35.0
Total	**40**	**100.0**

Based on table 2 above, the frequency distribution of respondents is based on family support in Berdikari II Hamlet, Mata Allo Village, Gowa Regency. From 40 respondents obtained family support data with good category as many as 26 (65.0%) and respondents with less category as many as 16 (35.0%) respondents

Level of Education
Table 3. Frequency Distribution of Respondents Based on Education Level in Berdikari II Hamlet, Mata Allo Village, Gowa District

Level of Education	Frequency (f)	Precentage (%)
Base	29	72.5
Intermediate	8	20.0
High	3	7.5
Total	**40**	**100.0**

Based on table 3 above, the distribution of respondents' frequency results is based on the level of education in Berdikari II Hamlet, Mata Allo Village, Gowa Regency. From 40 respondents, data was obtained from the level of knowledge with the basic category as many as 29 (72.5%) respondents, the middle category as many as 8 (20.0%) respondents, and the high category as many as 3 (7.5%) respondents.

Dietary Compliance
Table 4. Frequency Distribution of Respondents Based on Dietary Compliance in Berdikari II Hamlet, Mata Allo Village, Gowa District

Dietary Compliance	Frequency (f)	Percentage (%)
Obey	24	60.0
Not Obey	16	40.0
Total	**40**	**100.0**

Based on table 4 above, the distribution of the results of the frequency of respondents based on dietary compliance in Berdikari II Hamlet, Mata Allo Village, Gowa Regency. From 40 respondents, data obtained in the obedient category were 24 (60.0%) respondents and 16 (40.0%) respondents who were not compliant.

Analysis Bivariate
Relationship Between Family Support, Education Level, and Dietary Compliance in Hypertensive Patients
Table 5. Analysis of the Relationship between Family Support, education level, and Diet Compliance with Hypertension Patients in Berdikari II Hamlet, Mata Allo Village, Gowa Regency

	Dietary Compliance						P
	Obey		Not Obey		Total		
	n	%	n	%	n	%	
Family Support							
Good	21	52,5	5	12,5	26	65,0	
							0,001
Not enough	3	7,5	11	27,5	14	35,0	
Total	**24**	**60,0**	**16**	**40,0**	**40**	**100,0**	
Level Education							
Base	13	32,5	16	40,0	29	72,5	
							0,001
High	11	27,5	0	0,0	11	27,5	
Total	**24**	**60,0**	**16**	**40,0**	**40**	**100,0**	

Based on Table. 5, it was found that the respondents who had good family support and adhered to the diet were 21 respondents (52.5%). Meanwhile, based on the level of education, data obtained from respondents with basic education in the non-adherent category were 16 respondents (40.0%), and based on the results, the p-value = 0.001 means that there is a relationship between family support and education level with dietary compliance in patients with hypertension.

Discussion
The Relationship between Family Support and Dietary Compliance in Patients with Hypertension

Based on the research conducted to determine whether there is a relationship between family support and dietary compliance in patients with hypertension in Berdikari II Hamlet, then the chi-square statistical test read on continuity correction obtained p = 0.001 and = 0.05 so that p < So there is a relationship between family support and dietary compliance in patients with hypertension in Berdikari II Hamlet, Mata Allo Village, Gowa Regency. The results obtained were that 21 (52.5%) respondents had good family support and were obedient to their diet, and 11 (27.5%) respondents did not get support from their families and did not comply with their hypertension diet. Based on the results obtained from the research through the questionnaire, it can be concluded that most of the respondents received support from good families so that the respondents could comply with their hypertension diet. This result is supported by the theory put forward by Sari & Agusthia, (2020)[11] that family support is directly proportional to the patient's level of compliance with his hypertension diet. Because all the attitudes and attention and actions

given by the family greatly affect the patient's behavior in complying with his diet, family support is considered very important. If the family provides good encouragement, the patient's degree of compliance with his diet will be higher, and vice versa.

This is in line with Amelia & Kurniawati, (2020)[9] regarding the relationship between support and the level of dietary compliance of hypertension patients at Payung Sekaki Health Center Pekanbaru, as many as 48.1% or 39 respondents with support from parents adhere to the diet. A total of 32 respondents who did not get help from their families did not comply with their hypertension diet with a percentage of 21% with 17 respondents. So that the p-value obtained is 0.002 (p <0.05), which means that there is a relationship between family support and dietary compliance of hypertension patients at Payung Sekaki Public Health Center Pekanbaru. Based on the results obtained, there are still 5 (12.5%) respondents who do not adhere to their diet even though they have good family support because one of them is a lack of motivation from within, such as the desire to recover.

The Relationship between Education Level and Dietary Compliance in Hypertensive Patients

Based on the research conducted to determine the relationship between the level of education with dietary compliance in patients with hypertension in Hamlet Berdikari II. Then in the chi-square statistical test which was read on Fisher's exact test, the value of p = 0.001 and = 0.05 so that p < means that there is a relationship between the level of education and dietary compliance in patients with hypertension in Berdikari II Hamlet, Mata Allo Village, Gowa Regency. interconnected. From the results obtained, there are 16 (40.0%) respondents who have low education and are not obedient to undergoing a hypertension diet, and there are also 11 (27.5%) respondents who have higher education and are obedient to their diet. Based on the results of data analysis from the respondent's questionnaire, it shows that most respondents have low/basic education, where the low level of education is a factor that can cause the respondent to be unable to adhere to his diet due to lack of knowledge and understanding of the disease. According to Yureya Nita, (2018) education aims to gain knowledge and experience, both physically and spiritually. Indirectly, the level of education affects blood pressure because it cannot be separated from a person's lifestyle such as smoking habits, alcohol consumption habits, excessive caffeine consumption, food intake, and physical activity.[12]

This is by Fera Susriwenti, (2018) that one's knowledge can affect one's behavior in managing a good and healthy lifestyle. Factors that can affect a person's compliance are age and experience.[13] A person's age influences the mindset and captures the power of an individual, especially in the elderly where the ability to receive and remember something is degraded. Individuals with a history of hypertension will have sufficient knowledge about hypertension, and the experience of the closest people will be a support for patients in controlling their blood pressure. According to Jusuf & Liputo, (2021) in patients with hypertension, the education level affects the level of dietary compliance. Because the level of understanding in carrying out their diet and receiving information about the disease they are suffering from is influenced by their level of education.[14] According to Rachman, (2018) hypertension sufferers do not comply, especially people with low education due to the lack of knowledge in understanding the types of food that are allowed to be consumed and not consumed. So that this results in non-compliance with the hypertension diet, especially in the habit of consuming dairy foods such as consuming coconut milk vegetables, oily foods such as fish and fried side dishes every day, eating salty foods, and using excess salt and other flavoring ingredients every day.[15] Based on the results that have been obtained, it turns out that there are 13 (32.5%) respondents who are obedient to their diet even though their education level is low/basic due to a willingness in themselves to recover because they have a desire to recover, the individual tries to find information either through social media, electronic devices, and those closest to them.

Conclusion

Family support is needed, especially in paying attention to the type of food consumed by people with hypertension, accompanying them to health services to control blood pressure, helping to pay for treatment, and reminding them to take medication so that patients feel cared for by their families and enthusiastic about their diet. obedient in carrying out a hypertension diet by increasing knowledge of seeking information through various media, family, and closest people about hypertension.

Conflict of Interest Declaration

The researcher states that this research is aimed at developing nursing science and this research is free from any conflicts of interest, both individual and organizational.

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