

RELATIONSHIP BETWEEN LIFESTYLE AND DIET WITH BLOOD PRESSURE OF OUTPATIENT HYPERTENSION PATIENTS AT RSUD Dr. M.M DUNDA LIMBOTO

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ABSTRACT

This study aims to determine the relationship between lifestyle and diet with a blood pressure of outpatient hypertension patients at Dr. M.M Dunda Limboto hospital using a descriptive approach, univariate, and bivariate data analysis using a frequency distribution table and SPSS data analysis with Chi-Square test.

Based on the results of the frequency distribution table shows that respondents with uncontrolled blood pressure are 44 respondents (64.7%) while those with controlled blood pressure are 24 respondents (35.3%). The results of this study indicate that there is a significant relationship between lifestyle and blood pressure of outpatient hypertension patients at Dr. M.M Dunda Limboto hospital with Chi-Square test results $p = 0.035$ ($p < 0.05$) based on the results of the frequency distribution of respondents who experienced high blood pressure with an unfavorable lifestyle as many as 42 respondents (68.9%). As for diet, there is no significant relationship between diet and blood pressure of outpatient hypertension patients at Dr. MM Dunda Limboto hospital with Chi-Square test results $p = 0.929$ ($p > 0.05$) with the percentage of respondents who have a less frequent diet of 29 respondents (42.4%) while the pattern of eating less frequently is 39 respondents (57.4%).

Keywords: Lifestyle, Diet, High Blood Pressure, Hypertension

INTRODUCTION

Data from WHO showed in 2015 that as many as 1.13 billion people in the world have experienced side effects of hypertension, which means that one in three people have been diagnosed with high blood pressure. Every year the number of hypertension increases, it is estimated that 1.5 billion people will suffer from hypertension in 2025 and it is estimated that 10.44 million people will suffer from hypertension and its

complications. [14].

The increase in blood pressure reaches 80% and occurs a lot in developing countries which is the biggest health problem, for Indonesia itself has a number of patients with hypertension as much as 25.8%, and there are 5 provinces that dominate the largest hypertension, namely the regions Bangka Belitung with a percentage of (30.9%), in South Kalimantan with a prevalence of (30.8%),

for East Kalimantan the percentage is (29.6%), for West Java the percentage is (29.4%) and the Gorontalo area the percentage is (29.4%), the spread of high blood pressure continues due to inappropriate treatment, which causes stroke, heart attack, or diabetes, kidney failure, and also vision problems. [4].

Increased hypertension from the last three years where in 2019 there were 17,465 cases of hypertension, in 2020 cases increased by 15,430 people and in 2021 also experienced a significant increase of 29,346 cases (Gorontalo Health Office, 2021) [1].

Cases of hypertension in RSUD Dr. MM Dunda Limboto according to data from the Medical Record for the last three years the number of cases in 2018 was 1,614 cases, and in 2019 there was a decrease to only 77 cases, and for 2020 there was an increase in cases with only 221 cases of hypertension occurring.

High blood pressure is a problem in the blood vessels that causes obstruction of the passage of oxygen and food supplements to the body in need [11].

Hypertension is the expansion of the pulse in the blood vessels, usually with hypertension have the condition without symptoms where high pressure strange in blood vessels causes increased risk of stroke, *aneurysms*, as well as damage *cardiovascular* [6].

Hypertension can be seen with the three kinds, namely blood pressure is not controlled on specific systolic blood, uncontrolled blood pressure on diastolic blood, and also uncontrolled mixed blood pressure. High systolic blood pressure is an increase in blood pressure without an increase in the diastolic load that often occurs in the elderly. Systolic tension is identified by the tension in the arteries when the heart contracts (pulse). Systolic strain is the most extreme tension in the veins which is reflected in the pulse which is read as the upper tension which is the

more prominent value [5].

Blood pressure is also influenced by work, because it will be higher during work and lower at rest, blood pressure in a day is also unique, anxiety often occurs at night.

This high blood pressure can clearly be influenced by lifestyle, there are several things that cause high blood pressure, including lack of attention to diet, lack of work or regular physical activity, lack of control of blood pressure, and a tendency to smoke [5].

Hypertension can occur due to lifestyle, diet, activity and others, which with a healthy lifestyle can control blood pressure in many ways such as losing weight for obese people, adjusting diet or diet by reducing consumption of foods high in fat and salt, physical exercise or exercise, reduce consumption of drinks that trigger blood pressure rises such as coffee and liquor, and smoking habits.

Lifestyle is an individual tendency that is carried out every day, for example the way an individual does daily exercise or a tendency that is often done every day. A healthy lifestyle is an important part of controlling high blood pressure by losing weight in obese people, dieting (how to stop high blood pressure), exercising for real, reducing coffee consumption, not smoking so as not to cause extreme high blood pressure. pressure. blood pressure, which is a trigger for high blood pressure. may be accompanied by dangerous complaints [9].

A person's lifestyle is a tendency that occurs every day because of changes according to the social climate each individual has their own way of life and behavior despite the fact that they have the same goals as from reasoning or thinking, working, live firmly, and cooperate with others [4].

There is a classification of lifestyle which is divided into several explanations, the first is the Traditional Lifestyle, where

the traditional picture of life such as earning enough to pay bills is the responsibility of a father, while the mother and children are entrusted to take care of the house and stay at home. However, nowadays many women accept the choice to fill in as evidence of their independent nature, of a more self-centered way of life that is an adjustment of self-esteem [1].

The second classification is a Conservative Lifestyle, this way of life holds the view that with the help of the media it can affect a person's way of life, for example a guardian who is no longer a good example for children today but really likes to read magazines which is an important example in choose.

The factors that form a lifestyle are the first attitude that becomes a perspective and a soul that is ready to react to something through an experience and has a direct impact on behavior, which is influenced by customs, tendencies, culture, and social climate.

The next factor is experience and perception, where experience can affect social perceptions in behavior, through individual learning will be able to gain insight, and the next factor is personality which is also the composition of individual characters and acting methods that determine social contrast in people.

The last factor that influences the formation of a lifestyle is the motivation of each individual behavior driven by the desire for security, which if the individual's intentions are very large it will form a lifestyle which in general will encourage an indulgent lifestyle.

Lifestyle is an individual tendency that is carried out every day, for example the way an individual does daily exercise or a tendency that is often done every day.

Apart from lifestyle, diet also affects a person's circulatory pressure, where dietary variables are a determining factor for hypertension, for example the amount of fat in the body due to excessive

consumption of meat such as hamburgers, goat and fish which contain fat and bad cholesterol. The entry of high salt, this is generally the Indonesian people are used to eating cheap food that has a high salt content. [7].

A healthy lifestyle is an important part of controlling high blood pressure in ways such as losing weight in obese people or dieting (how to stop high blood pressure), exercising significantly, reducing coffee consumption, not smoking so as not to cause extreme high blood pressure, Blood pressure which is a trigger for blood pressure can be high, perhaps because it is accompanied by complaints that cause risk. [9].

Diet is a fundamental factor to meet the healthy needs of individuals, it is believed that different eating patterns can further develop the quality of one's food which if the body requires a supplement it causes hunger and over time will make the body thinner and also helps in working. [11].

Diets in general can be influenced by two elements, specifically internal components, something in the individual's body and very long lasting, such as one's beliefs, as well as one's perspective, dietary tendencies, and organic changes. External variables, more precisely climate is factors from outside the body, including family, friends and socio-social standards.

The diversity of types of food in the daily diet that can burn basically must come from food sources that have energy substances, building materials, and regulatory substances [5].

By adopting a balanced diet can help us live healthier lives, and how to apply tailored nutrition by consuming five types of nutrients at every dinner. These five types of nutrients are staple or main foods, side dishes, vegetables, organic products, and minerals. [4].

The pattern of salt consumption has a major effect on high blood pressure, the

recommended sodium level is About 100 mmol (2.4 grams of sodium or 6 grams of salt) per day, excessive sodium consumption causes sodium to accumulate in the extracellular fluid, the intracellular fluid is aspirated in order to increase extracellular fluid volume for standardization. High blood pressure is caused by an increase in extracellular fluid which results in an increase in the amount of blood. [14].

One of the causes of high blood pressure is also in lifestyle changes, for example changes in diet that encourage fast food that is high in saturated fat, sodium, and also low in fiber, which achieves results as a factor in the advancement of degenerative diseases such as high blood. [2].

Junk food, fast food has large amounts of salt, which can increase the volume of blood in the body, and cause the heart to suck more blood, resulting in more severe hypertension. [2].

Excessive sodium intake can increase extracellular blood volume, which will affect the development of high blood pressure, mineral deficiency in eating food also causes an increase in sodium levels and causes a greater risk of high blood pressure. [3].

Unnecessary alcohol use causes constriction of the blood vessels, which is an indication of the compound, and excessive use of caffeine can make blood vessels contract and can make the body release more adrenaline, which can lead to an increase in heart rate. Because the increase in sodium intake causes fluid to be blocked and also increases blood volume, this event makes the heart work extra pumping a lot of blood while the space is getting narrower, which causes high blood pressure. [11].

The habit of smoking also affects a person's blood pressure. Cigarettes contain various artificial substances that paralyze the body's cohesion, including

carbon monoxide. And other engineered substances that enter the circulatory system can damage the body's system and cause arteriosclerosis and high blood pressure.

Excessive sodium intake can increase extracellular blood volume, which predisposes to the development of high blood pressure. Lack of minerals in food consumption causes an increase in sodium levels and causes a greater risk of high blood pressure (Junaedi et al, 2013)

Foods such as mutton, beef, or offal and others also cause high blood pressure because they contain fat or bad cholesterol. The level of fat obtained from the food consumed can clog blood vessels because of the large amount of fat added to the blood vessel divider. The current situation can stimulate the heart to draw more blood, and also cause an increase in circulatory pressure (Andi Besse Rawasiah et al, 2014).

The high rate of hypertension locally, especially in community groups in the Gorontalo area, we need to look at from top to bottom so that it can be seen what elements also affect hypertension, and it is useful to further develop assistance for the government in general welfare.

RESEARCH METHODS

The approach in this study uses a descriptive method, with the type of quantitative research being conducted from June 17 to August 17, 2021 with the research location at RSUD Dr. M, M Dunda Limboto, the population is all outpatient hypertension patients at RSUD Dr. M, M Dunda Limboto totaled 221 people, from the entire population, the number of samples was drawn using the Slovin formula, the number of samples was 68 respondents.

Data collection in this study used measurements for blood pressure, conducted interviews, and distributed questionnaires as a data collection tool, for

blood pressure measurements the data were obtained directly from health workers who conducted blood pressure checks, after which interviews were conducted where the researchers obtained data orally with individual *eye to eye* to obtain important information, interviews were conducted regarding the design of the meal using a questionnaire with FFQ type. [3].

Assessment of food utilization must determine eating habits and also describe the suitability of food ingredients and supplements at the club, family and individual levels.

Food repetition strategy means obtaining information from the repeated use of various staple ingredients or types of ready-to-eat foods seen in a certain time such as a few days, a week, a month or a long time. [8].

The food frequency questionnaire contains a list of foods, the frequency of use of basic necessities or the utilization of these food sources within a certain period. Comprehensively, the assessment of the use of food is divided into two, the strategy of the subjective, quantitative techniques, while ratings utilization of food based on the perception and the target client is separated into three levels, namely the level of the public, families, and individuals.

Option chronological order the use of the FFQ usually are broad, such as regular, sometimes, and never has been and generally also illustrated by the number of days that a more explicit in the span of a week-by-week or month-to-month.

where each of the variables that will be in Measuring instruments have different indicators and measurement methods and have the same measuring scale, the first variable to be studied is the age of the respondent, by means of measuring the categories given are category 1 for late teens (19-25), category 2 for early adulthood (26 -35), 3rd category for late adults (36-45), then 4th for early elderly (46-55) and the last 5 for late elderly (56-

75), with the measuring scale used is ordinal. [4].

The second variable is gender, the first category is for men and the second is for women who also have the same measuring scale, namely the ordinal measuring scale.

Next is the last education variable which consists of the category of education level, the first is SD with category 1, the second is junior high school, third is high school, and the fourth is S1 the scale used is ordinal.

The next variable is the occupation of the respondent in which the first category is 1 for Labor, 2 for IRT, 3 for Farmers, 4 for Fishermen, 5 for Civil Servants, 6 for Private Employees, 7 for Entrepreneurs, and the last is 8 for Traders, with a scale ordinal used in this study.

The next variable is lifestyle which will be given a score of 1 if >50% is given a good category, and 2 if <50% is given a bad category which also uses an ordinal scale.

The next category is eating patterns where this eating pattern uses the FFQ questionnaire and is given category 1 for frequent, and category 2 for not often and using the same scale, namely ordinal.

Furthermore, what was studied was the high blood pressure of the respondents with the instrument used was a sphygmomanometer, given the category of hypertension if > 140/90 MmHg, and not hypertension if < 140/90 MmHg, and also using an ordinal measurement scale.

The food frequency questionnaire contains lists of food, the frequency of use of basic necessities or the use of these food sources in a certain period. Comprehensively, the assessment of food utilization is divided into two, namely subjective strategies, quantitative techniques, while the assessment of food utilization based on perceptions and also the target client is separated into three levels, namely the public, family and individual levels.

The choice of time sequences used in FFQs is usually broad, for example regular, sometimes, and never which is generally also described by a more explicit number of days in a week-by-week or month-to-month timeframe.

The data analysis technique used is a univariate analysis technique with a frequency distribution table to represent each characteristic studied, both independent and dependent variables. The next technique used is bivariate analysis aimed at knowing the relationship between the dependent variable and the independent variable using *Chi Square*, and the p value <0.05.

RESEARCH RESULTS

Table 1 Characteristics of Respondents by Age, Gender, Education and Occupation of Outpatient Hypertensive Patients

Characteristics	Frequency	%
Age :		
1. Late adolescence (19-25)	1	1.5
2. Early adult (26-35)	6	8.8
3. Late adult (36-45)	24	35.3
4. Elderly Initial (46-55)	24	35.3
5. Late elderly (56 -75)	13	19.1
Total	68	100
Gender :		
1. Male	33	48.5
2. Female	35	51.5
Total	68	100
Last education:		
1 SD	35	51.5
2. SMP	22	32.4
3. SMA	4	5.9
4. S1	7	10.3
Total	68	100

Source: Primary Data 2021

In terms of age characteristics, it is known that the proportion of respondents with hypertension is dominated by late adulthood (36-45) and early age (36-45). 46-55), 24 respondents each with a proportion of 35.3%, and by gender, it was found that the incidence of arterial hypertension in women was 35 respondents with a proportion of 51.5%, and for education obtained the last elementary school graduate (SD) is the largest respondent who has hypertension, namely 35 respondents with a percentage of 51.5%, and judging from the work of the most respondents they are There are 25 respondents who are housewives or IRT with a percentage of 36.8%.

Table 2 Distribution of Respondents Frequency Based on Lifestyle of Outpatient

Characteristics	Frequency	%
Lifestyle:		
1. Not good	68	89.7
2. Good	7	10.3
Total	68	100

Source: Primary Data 2021

In the results of the frequency distribution table of respondents based on the lifestyle of Hypertensive Patients, it was found that the proportion of hypertensive patients with a bad lifestyle was a number of 61 respondents with a total percentage of 89.7% while respondents who have a good lifestyle category are 7 respondents with a total percentage of 10.3%.

Table 3. Frequency Distribution of Respondents Based on Dietary Patterns of Outpatients

Characteristics	Frequency	%
Eating Pattern:		

1. Often	29	42.6
2. Not often	39	57.4
Total	68	100

Source: Primary Data 2021

From the results of the frequency distribution table of respondents based on the diet of hypertensive patients, it was found that the proportion of hypertensive patients with frequent eating patterns was 29 respondents with a total percentage of 42.4%, while the pattern of eating is not often a total of 39 respondents with a total percentage of 57.4%.

Table 4 Distribution of Respondents Frequency Based on Blood Pressure Examination Results of Outpatients

Characteristics	Frequency	%
Blood Pressure:		
1. Uncontrolled	44	64.7
2. Controlled	24	35.3
Total	68	100

Source: Primary Data 2021

From the results of the patient's blood pressure frequency table, it was found that out of 68 patients who were respondents, 44 respondents had low blood pressure. controlled with a total percentage of 64.7%, while respondents who have controlled blood pressure are 24 respondents with a total percentage of 35.3%.

Table 5 Relationship between Lifestyle and Blood Pressure of Outpatients

Lifestyle	Hypertension Incidence				Total	
	Hypertension		No Hypertension		f	%
	f	%	f	%		
Good	2	28.6	5	71.54	7	100
Not	42	68.9	19	31.1	61	100

Good					
Total	44	64.7	24	35.3	68 100
P Value : 0.035					

Source: Primary Data 2021.

The results of the cross tabulation between lifestyle and blood pressure of hypertensive patients can be seen that hypertensive patients have a bad lifestyle, namely 42 people with a percentage of 68.9%, and then the analysis test is carried out *Chi Square*. The obtained *P value* of 0.035 is 0.05 which means that there is a relationship between lifestyle and blood pressure in outpatient hypertension patients at RSUD Dr. MM Dunda Limboto.

Table 6 Diet of Outpatient

Name Food	Often		Not	
	>2x / 4 days	6x / 1 week	3x / week	Never
Rice Red	0	1	8	59
Nasi Kuning	1	3	16	48
Syrup /beverages	1	3	6	58
Sugar-sweetened	1	3	8	56
Beef	1	3	25	38
Chicken	2	1	3	62
Goat meat	8	2	28	30
Chicken eggs	11	2	18	37
Tofu/tempe	3	1	14	50
Nuts	2	0	10	56
Full cream milk	1	1	3	63
Vegetable oil	1	0	3	64
Offal	0	1	9	58
Cheese	1	1	25	41
Butter	4	1	34	29
Coconut milk				

<i>Fast food</i>	1	3	8	56
<i>Soft drink</i>	4	2	13	49
Fried food	6	3	30	29

Source: Primary Data 2021

In the results in this table, it is found that respondents who often consume brown rice are 1 and never 59 people, respondents who very often consume yellow rice are 1 and never eat yellow rice 48 respondents, and respondents who also consume syrup or sweet drinks with a very frequent diet are 1 respondent and for those who never consume are 58 respondents, protein sources consist of beef with a very frequent diet of 1 respondents and never as many as 56 respondents.

In addition, there are respondents who eat chicken meat with a very frequent diet as many as 1 respondent and never as many as 38 respondents, for goat meat respondents and those who consume it very often are 2 respondents and never eat it are 62 respondents, for chicken eggs very often 8 respondents and never consumed 30 respondents, for tofu and tempeh which very often consumed 11 respondents and never consumed 37 respondents, nuts with very frequent diet were 3 respondents and never 50 respondents, sources of fat such as full cream milk, the diet is very frequent as many as 2 respondents and never 56 respondents.

Then vegetable oil, eating patterns very often and often 1 respondent and never 63 respondents, for offal with very frequent and never eating patterns, for cheese the frequent diet was 1 respondent and never 58 respondents, butter eating patterns very often and often 1 respondent each and never 41 respondents, coconut milk for very frequent eating patterns 4 and not often 34 respondents, *fast food* eating very often 1 respondent and never 56 respondents, for *soft Drinks* with a very frequent diet are 4 respondents and never

49 respondents, and fried foods with a very frequent diet are 6 respondents and never 29 respondents.

Table 7 Relationship between diet and blood pressure in outpatients

Eating Pattern	Hypertension Incidence				Total	
	Uncontrolled		Controlled		f	%
	f	%	f	%		
Often	21	72.4	8	27.6	29	100
Not Often	23	50.0	16	41.0	39	100
Total	44	64.7	24	35.3	68	100
P Value : 0.929						

Source : Primary Data 2021

From the results of the cross tabulation between diet and blood pressure of hypertensive patients, it can be seen that the highest percentage of respondents who do not often consume foods that trigger high blood pressure are 23 respondents with a percentage of 50.0%, an analysis test was carried out *Chi Square* obtained a *P value* of 0.929, i.e. 0.05, which means that there is no relationship between diet and blood pressure in outpatient hypertension patients at RSUD Dr. MM Dunda Limboto.

DISCUSSION

A. Characteristics of Respondents

In the age characteristics, it can be seen that hypertension often occurs in late adulthood and old age in this study with 24 respondents each with a level of 35.3%.

Circulatory pressure also increases with age, in general, there is a risk that a person will experience high blood pressure at the age of 40 years, although this may occur at a young age due to several factors, with increasing age causes various physiological changes that affect peripheral opposition and action. In addition, with age the blood vessels begin to thicken due to the

buildup of collagen in the muscle layer, so that over time the blood vessels become limited.

For gender characteristics, the results of the study are seen to be in line with the theory that uncontrolled blood pressure is more prone to occur in women than men, which is generally observed to occur in IRT (housewives).

Other results stated about the relationship between food intake and the incidence of hypertension in the elderly, which in general, for women in the phase *premenopausal* more protected from diseases such as cardiovascular because it is protected from the chemical estrogen that plays a role in increasing *high-density lipoprotein* (HDL) levels, because it can prevent *atherosclerosis*.

In this review it can be said that some of the women surveyed are in late adulthood or early age, so a high risk of high blood pressure can be assumed because they gradually continue to lose the *estrogen* chemical that can protect against attacks against disease *cardiovascular*.

The latest educational characteristics were obtained that for education it is known that the majority of respondents are elementary school graduates (SD) with a total of 35 respondents with a percentage of 51.5%. This is due to the reduced knowledge gained about the lifestyle that should be for hypertensive patients. [10].

Education is an effort to convey the goal so that humans develop positive understanding, attitudes, and actions, basically educational efforts are intended in a positive way, namely changing human nature in a positive direction by reducing negative socio-cultural factors and behavior.

There are respondents with a higher education level having a higher

frequency, namely 7 respondents with a percentage of 10.3% compared to respondents with higher education, even 4 respondents with a percentage of 5.9%. This also proves that education does not fully guarantee that health can continue to be maintained even though he has received knowledge in health matters, not all of which can be applied in daily life, it returns to each of them in living their lifestyle and eating patterns according to the disease. suffered [8].

In the next characteristic, the work is obtained based on the results of the study showing that the profession as a housewife (IRT) is the respondent who experiences the most uncontrolled high blood pressure, one of the contributing factors is gender, women with age entering old age or late adulthood are more susceptible to cardiovascular disease due to lack of protection from the hormone *estrogen*. In addition, with the profession as a housewife (IRT) with busy housework, most of them cannot do sports, have irregular eating patterns and are easily stressed.

B. The Relationship of Lifestyle with Blood Pressure of Outpatient Hypertensive Patients

Judging from the results of bivariate data on the variables studied using the SPSS test, it shows that there is a relationship between lifestyle and blood pressure of outpatient hypertension patients at Dunda Limboto Hospital with the results of data processing obtained p value = 0.035 ($p < 0.05$), it is very visible that from the results of each respondent in their daily life, most respondents have a tendency to smoke and do not often do physical activity and often experience stress.

Hypertension is firmly influenced by an unhealthy lifestyle, namely not doing physical activity, eating

unhealthy foods, and not controlling blood pressure which is also a tendency to smoke [2].

In this study it was seen that the number of respondents with a total of 68 people found that respondents with bad lifestyles were 61 respondents with correct answers <50% and 7 respondents with correct answers >50%, and from the results of the questionnaire it was found that respondents who had a smoking habit were 36 respondents with a frequency of more than 3 times a day. Furthermore, the respondents who had complaints of insomnia, anxiety and irritability were 50 respondents, then 64 respondents who did not do sports and only 4 respondents who did exercise.

C. Relationship between Diet and Blood Pressure in Outpatient Hypertensive Patients

In the dietary pattern variable using the FFQ, the results showed that respondents who had frequent eating patterns were 29 respondents with a percentage of 42.6% and while for respondents who had infrequent eating habits were 39 respondents with bad eating habits with a total of percentage. as much as 57.4%.

The results using the statistical test *chi square* $p = 0.929$ ($p > 0.05$) which means that there is no relationship between diet and blood pressure of outpatient hypertension patients at Dunda Limboto Hospital, based on the results of the FFQ that has been filled in by respondents that the frequency of eating foods that trigger hypertension is less, namely for syrup/sweet drinks from 68 respondents who have never consumed it, 58 respondents, 56 respondents who consume beef, and 56 respondents who consume goat meat. 62 respondents, and who consume *fast food* as much as 56

respondents, who consume *soft drinks* as much as 49 respondents, for those who eat offal food as many as 64 respondents, on cheese foods as many as 58 respondents, and 41 respondents who consume butter, this proves that the consumption of foods that trigger hypertension is very little.

There are several factors that shape a person's diet, namely economic factors, cultural education, religion and the environment, from the results of data processing shows that respondents with education owned are elementary schools (SD) and have the highest percentage of 35.5%, which is This proves that most of the respondents lack knowledge of good eating patterns, so that the consumption of food diversity is also still very lacking (Sulistyoningsih, 2011).

Based on interviews conducted with respondents that most of the respondents consume beef, mutton and chicken only when attending weddings or family events. In addition, age also affects the consumption of these foods, it is known that most of the respondents who participated in this study had entered the early elderly age with a frequency of 24 respondents and the percentage was 35.5% so that the lack of meat consumption was due to decreased dental and oral function.

However, when viewed from the percentage of blood pressure, respondents with high blood pressure are more and compared to respondents with normal blood pressure, this can prove that there are other factors that cause uncontrolled blood pressure even though the results of statistical tests on diet are not related to the patient's blood pressure. hypertension outpatient Dr. MM Dunda Limboto Hospital.

It can be seen that of the 68 respondents who experienced stress (anxiety, insomnia, and irritability) with a total of 50 respondents, so that although the results of the statistical test of eating patterns were not related to the blood pressure of outpatient hypertension patients at Dunda Limboto Hospital, there were other factors that caused the frequency of respondents who have high blood pressure that is $> 140/90$ MmHg more than the frequency of respondents with blood pressure $< 140/90$ MmHg.

CONCLUSION

Based on the results of the statistical test *chi-square* the relationship between lifestyle and diet with blood pressure in outpatients with hypertension at Dunda Limboto Hospital can be concluded that:

1. There is a relationship between lifestyle and blood pressure of outpatient hypertension patients at Dunda Limboto Hospital with the results of the statistical test *chi-square* $p = 0.035$ ($p < 0.05$).
2. There is no relationship between diet and blood pressure of outpatient hypertension patients at Dunda Limboto Hospital with the results of the statistical test *chi square* $p = 0.929$ ($p > 0.05$)

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