

## Relationship between Lifestyle and Stress with Hypertension among of Communities in Sigi Regency

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### ABSTRAC

**Introduction :** Hypertension is a condition where a person has increased blood pressure above normal or chronic. People can feel the serious impact of hypertension when complications have occurred. From the results of interviews with 3 respondents with hypertension, said that in everyday life, the diet that is applied is 3 times a day. As for the food they often consume eggs, salted fish, and coconut milk foods. As for the problem of stress, they don't fully understand about stress, it's just that they say they always have a lot of thoughts, irritability, headaches are caused by economic factors.

**Method:** This type of research is analytic research with a *cross sectional* approach. The sample in this study amounted to 37 people. Meanwhile, the sampling technique was *purposive sampling*.

**Results:** The results showed that there was a relationship between the style of living with hypertension with a value of  $p$  value = 0.041 ( $> 0.05$ ). There is a relationship between stress and hypertension value  $p$  value = 0.045 ( $> 0.05$ ). From these results, it is suggested that the health center be more active in educating the public about the factors that can trigger hypertension.

**Conclusion:** local health workers always provide education to the public about the factors that can trigger hypertension

**Keywords:** *Style of life; Stress; Hypertension.*

## Introduction

Hypertension is a condition where a person has increased blood pressure above normal or chronic. It is known that 9 out of 10 people who suffer from hypertension cannot be identified the cause of the disease. That is why hypertension is called the silent killer. A person only feels the serious impact of hypertension when complications have occurred. So it is only realized when it has caused organ disorders such as impaired heart function, coronary function, kidney function, cognitive dysfunction or stroke. Hypertension basically reduces the life expectancy of the sufferers (Triyanto, 2014 ).

Hypertension is a global health problem that requires attention because it can cause major death in developed and developing countries. According to the World Health Organization (WHO) in 2013, it shows that the prevalence of hypertension in developed countries is 35% and in developing countries is 40% of the adult population. In 2025 it is estimated that cases of hypertension, especially in developing countries, will experience an increase of 80% from 639 million cases in 2000, namely to 1.15 billion cases. This prediction is based on the number of hypertension sufferers and the current population growth.

Hypertension or high blood pressure is a medical condition characterized by increasing contraction of the arteries resulting in resistance to blood flow which increases blood pressure against the walls of the blood vessels. The heart has to work harder to pump blood through the narrow arteries. If this condition continues, blood vessels and heart will be damaged.

There are two causes of hypertension, namely primary hypertension (*essential*) where the exact cause of this hypertension is unknown, but there are known risk factors such as: genetics, age, gender, occupation, resistance to disease, lifestyle and stress and hypertension. secondary where the cause can already be identified. For signs and symptoms of hypertension, sufferers feel, namely: headaches, dizziness, heart beats faster and pounding, and a feeling of wanting to fall (Junaedi, 2013).

The prevalence of hypertension in Indonesia which is obtained through measurements at  $\geq 18$  years of age is 25.8%, the highest is in Bangka Belitung 30.9%, followed by South Kalimantan 30.8%, East Kalimantan 29.6% and West Java 24.9%. The prevalence of hypertension in Indonesia which is obtained through a

questionnaire diagnosed health workers is 9.4%, those diagnosed by health workers or currently taking medication are 9.5% (Risksedas, 2013).

Based on data from the Central Sulawesi Provincial Health Office, researchers obtained information and data that hypertension sufferers in 2017 reached 29.2% of cases. Meanwhile, in 2018 there was an increase in hypertension by 47.4% of cases. Based on data from Sigi district, the highest number of cases of 10 diseases is that hypertension is in third place (Central Sulawesi, 2018).

According to Muhammadun's (2010) research, the factors that influence hypertension are lifestyle such as eating an appropriate diet, including a daily diet that meets nutritional needs, the habit of consuming salt and fatty foods can increase the risk of developing hypertension. Not doing regular exercise, including quality (movement) and quantity in terms of the frequency and time spent exercising, smoking and consuming alcohol, as well as using drugs, insufficient rest that results in physical and mental disorders. Adequate rest is a basic human need to maintain health.

According to the results of research conducted by Prawesti (2014), another factor that can affect hypertension is stress. The results showed that more than 50% of respondents (55%) experienced stress and more than 50% of respondents (62%) experienced complications of hypertension. Stress will increase the resistance of peripheral blood vessels and cardiac output. In addition, stress can stimulate the sympathetic nervous system. Stress that is not managed properly can cause various kinds of diseases, one of which is hypertension. Research by Sihombing (2017) states that behavioral factors associated with hypertension are a history of diet (excessive salt consumption), excessive alcohol consumption, lack of physical activity, smoking habits, diabetes mellitus.

At Sigi regency, the number of patients with hypertension in November 2016 as many as 176 people, while in December 2016, as many as 130 people, in 2017 an increase of 216 people. In 2018 there was an increase of 231 sufferers. In 2019 there was an increase of 332 sufferers. Meanwhile, from January to April 2020 there were 235 sufferers. Based on the results of a short interview conducted on 2 June 2020 with 3 respondents with hypertension, said that in everyday life the diet that is applied is 3 times a day. As for the food they often consume eggs, salted fish, and coconut milk foods. As for the problem of stress, they don't fully understand about stress, it's just that

they say they always have a lot of thoughts, irritability, headaches are caused by economic factors.

## Method

The type of research used is an analytic survey with a cross sectional approach, namely to explain the causal relationship between variables or to study the dynamics of the correlation between determinants that affect the occurrence of hypertension by observing or collecting data at once (Notoatmodjo, 2012). The research aims to determine whether there is a significant relationship between lifestyle and stress with hypertension in rural communities Sigi regency. This research was conducted on 23-25 October 2020. The number of samples in this study were 37 respondents using *purposive sampling*. The data collection tool used was a lifestyle and stress questionnaire by Ahmad Hanafi (2016).

## Result

The lifestyle of the respondents in this study were grouped into two categories, namely an unhealthy lifestyle and a healthy lifestyle. Lifestyle can be seen in the following table 1.

Table 1 Frequency Lifestyle of Respondents

No.	Lifestyle	Frequency	Percentage (%)
1	Not healthy	14	37.8
2	Healthy	23	62.2
<b>Total</b>		37	100.0

Source: Primary Data, 2020

Based on table 1, of the 37 respondents, 14 people (37.8%) had an unhealthy lifestyle and 23 respondents (62.2 %) had a healthy lifestyle.

Meanwhile, the respondents' stress in this study were grouped into two categories, namely stress and no stress. Stress can be seen in the following table 2.

Table 2 Stress Frequency of Respondents

No.	Stress	Frequency	Percentage (%)
1	Stress	17	45.9
2	No stress	20	54.1
<b>Total</b>		37	100.0

Source: Primary Data, 2020

Based on table 2 of the 37 respondents indicated that experiencing stress were 17 (45,9 %) and respondents who did not experience stress as many as 20 people (54,1%).

In this study, the chi-square test was used using a 2x2 table to determine the relationship between the independent variable (lifestyle) and the dependent variable (hypertension) with a significance value of 0.05.

Table 3 Relationship lifestyle with Hypertension

No.	Lifestyle	Hypertension						P Value
		Case		Control		Total		
		F	%	F	%	F	%	
1	Not healthy	2	14.3	12	85.7	14	100.0	0.041
2	Healthy	12	52.2	11	47.8	23	100.0	
	<b>Total</b>	14	37.8	23	62.2	37	100.0	

Source: Primary Data, 2020

Based on Table 3 shows that respondents who have a lifestyle is not healthy in the case group as much as 2 people (14.3%), while respondents who have a lifestyle is not healthy in the control group as many as 12 people (87.5%) and respondents lifestyle healthy in case group as many as 12 people (52.2%) while respondents who had a healthy lifestyle in the control group were 11 people (47.8%). From the bivariate analysis obtained  $p$  value = 0.041 ( $<0.05$ ), which means that there is a relationship between lifestyle and hypertension.

In this study, the *chi-square* test was used using a 2x2 table to determine the relationship between the independent variable (stress) and dependent variable (hypertension) with a significance value of 0.05.

Table 4 Relationship between Stress and Hypertension

Table 1: Relationship between Stress and Hypertension							
No.	Stress	Hypertension				P Value	
		Case		Control		Total	
		f	%		%	F	%
1	Stress	3	17.6	14	82.4	17	100.0
2	No stress	11	55.0	9	45.0	20	100.0
	<b>Total</b>	14	37.8	23	62.2	37	100.0

Source: Primary Data, 2020

Based on table 4, it is found that respondents who experienced stress in the case group were 3 people (17.6%), while respondents who experienced stress in the control group were 14 people (82.4%) while respondents who were not stressed in the case group were 11 people (55.0%) and respondents who are not stressed in the control group are 9 people (65.4%). From the bivariate analysis obtained  $p$  value = 0.045 ( $<0.05$ ), which means that there is a relationship between stress and the incidence of hypertension.

## Discussion

The research result was obtained that the respondents who have a lifestyle is not healthy and hypertensive many as 12 people (85.7%), while respondents who have a lifestyle is not healthy and do not have hypertension as much as 2 people (14.3%) and respondents lifestyle of healthy and experienced hypertension as many as 11 people (47.8%) while respondents who have a healthy lifestyle and do not experience hypertension as many as 12 people (52.2%).

The researchers' assumption is that the increase in blood pressure depends on a person's lifestyle, so it is recommended to avoid or regulate a lifestyle that can cause hypertension such as managing a healthy diet, adequate physical activity, adequate rest, stopping or reducing smoking and stopping or reduce the habit of drinking alcoholic beverages. The results of this study were also conducted on the physical activity lifestyle of these respondents. Assessing routine exercise habits and time spent in each sport showed that there was almost no significant difference between respondents who had sufficient physical activity habits. This can be proven by the results of the questionnaire answered in statement number 5 that many of them do not have sports habits. In research carried out on lifestyle on dietary patterns, this can be proven by the results of the questionnaire answered in statements number 6, 7 and number 11 by respondents that they often consume foods that are coconut milk, contain a lot of salt and are excessively fatty and rarely consume fruits.

Adequate physical exercise (exercise) can reduce the risk of cardiovascular disease and all causes of mortality, including hypertension. The salt, especially the sodium content in it, contributes to an increase in blood pressure. Consumption of sodium will activate the vasopressor mechanism in the central nervous system and stimulate water retention which results in an increase in blood pressure. Then there is a correlation with the consumption of saturated fat with the incidence of hypertension. consumption of foods high in fat, especially saturated fat, is not healthy for the heart because it can increase LDL cholesterol (*Low Density Lipoprotein*).

The results of the research by Febby (2009) stated that based on the results of statistical tests between lifestyle and hypertension, it was found that there was a significant relationship with the correlation coefficient value of 0.584 indicating that the strength of the correlation was strong. The results of this study showed that respondents

who experienced stress and had hypertension were 14 people (70.0%), while respondents who were stressed and did not have hypertension were 3 people (17.6%) while respondents who were not stressed and experienced hypertension were 9 people (45.0 %) and respondents who are not stressed and do not experience hypertension are 11 people (55.0%).

The assumption of this research determinant of stress is in accordance with the results of the questionnaire they answered in statements number 7 and 8 that more respondents when they work tired quickly, often feel pain in the head due to too much thought burden and the least say that they get angry easily when get into a problem and easily forget something that's on their mind. The relationship between stress and hypertension is thought to be through the sympathetic nerves which can increase blood pressure intermittently. If stress lasts for a long time it can lead to a persistent increase in blood pressure, in the end a person can develop hypertension (Suyono, 2009).

Stress will increase the resistance of peripheral blood vessels and cardiac output. In addition, stress will stimulate the sympathetic nervous system. Stress that is not managed properly can cause various diseases, one of which is hypertension (Hahn & Payne, 2009). The results of Sulistiyowati's (2009) research entitled Determinants related to hypertension in Botton village with the Chi-Square test obtained a value of 4,314 with a significance level of  $p_v$  of 0.001 ( $0.001 < 0.05$ ) so there is a relationship between stress and incidence of hypertension.

Based on the results of the study, it shows that of the 30 respondents stated that family support for respondents, more families are supportive than those who are less supportive. According to the assumptions of the respondents, the researchers stated that the family is supportive in terms of emotional support, namely that the family still accepts and likes to talk about the respondent's disease and the respondent feels that the family has paid attention to the respondent since suffering from leprosy. Meanwhile, in terms of the lack of family support, the respondent felt that the family made the respondent feel worried about their illness and that the family did not give the respondent less encouragement to maintain their health. Family emotional support is very important to encourage people with leprosy in dealing with their illness, such as: attention, love, encouragement and motivation so that sufferers feel that they are still accepted in the family even with their disease conditions.

## Conclusion

Based on the results of research and discussion conducted by researchers it can be concluded that there is a relationship between lifestyle and hypertension and also there is a relationship between stress and hypertension in rural communities at Sigi regency. It is recommended that local health workers always provide education to the public about the factors that can trigger hypertension.

## Reference

- Junaedi, Iskandar (2013) *Hypertension Kandas Thanks to Herbs*. Jakarta: Publisher Media (Imprit Agro Media Pustaka).
- Mansjoer A. (2010) *Kapita Selekta Kedokteran Edisi 4*. Jakarta: Media Aesculapius.
- Muhammadun, (2010) *Living with Hypertension*. Jogjakarta: In-Books
- Notoatmodjo, (2010) *Health Research Methods*. Jakarta: Rineka Cipta.
- Price, S, Lorraine, M. (2012) *Patofisiologi, Konsep Klinis Proses-Proses Penyakit. Volume 1. Edisi 6*. Jakarta: EGC.