

THE RELATIONSHIP OF COFFEE CONSUMPTION WITH HYPERTENSION

Florentianus Tat¹⁾, Yoani Maria Vianney Bitu Aty^{CA)}, Sabina Hamu²⁾, Elisabeth Herwanti³⁾, Aben B.Y.Romana

Prodi Pendidikan Profesi Ners Poltekkes Kemenkes Kupang

Email: tatflorentianus@gmail.com

Prodi Pendidikan Profesi Ners Poltekkes Kemenkes Kupang

Email : vivi_aty@yahoo.co.id,

Mahasiswa Profei Ners Poltekkes Kemenkes Kupang

Email : sabinalanah@gmail.com

Prodi Pendidikan Profesi Ners Poltekkes Kemenkes Kupang

Email : elisabeth_herwanti@yahoo.com

Prodi Pendidikan Profesi Ners Poltekkes Kemenkes Kupang

Email : abenromana@gmail.com

ABSTRACT

Every year hypertension is the leading cause of death worldwide. The cause of this disease is due to modifiable factors and lifestyle. Currently, there are many people with hypertension in Kupang, ranking third out of the 10 most common diseases. The cause of kupang is the influence of lifestyle, namely consuming fatty foods such as pork, se'i (cured meat by smoking), excessive alcohol consumption, high sodium foods. Lack of exercise habits, excessive consumption of caffeine. The habit of drinking coffee is currently popular. There are many coffee shops in the city of Kupang. Coffee is a favorite drink besides alcohol. This research is quantitative with analytical descriptive design. The approach used is a cross sectional study. The number of samples is 37 people. Instrument in the form of a questionnaire. Analysis of the data used is descriptive analysis and test. The results obtained 93.3% of respondents consume packaged coffee or coffee that is processed in the factory. The habit of drinking coffee in people who suffer from hypertension is in the high category of 25 (67.6%). Most of the respondents suffer from moderate hypertension as many as 20 respondents (54.1%), mild hypertension as many as 14 (37.8%), and severe hypertension. as many as 3 respondents (8,1%). The results of the one sample t test obtained a p value of 0.00. It can be concluded that there is a significant relationship between the coffee drinking group and the incidence of hypertension. The habit of drinking coffee can cause hypertension, depending on the amount and content of caffeine consumed

Keywords: *Coffee, Hypertension*

1. INTRODUCTION

Health problems in developed and developing countries today are diseases of the heart and blood vessels (cardiovascular). Every year, this disease becomes the number one cause of death in the world. One of the cardiovascular diseases that often and most commonly occurs in the community is hypertension (P2PTM Kemenkes, 2019). Hypertension is a state of increased blood pressure on the walls of arterial blood vessels that interfere with a person's health yang mengganggu kesehatan seseorang (Rahayu,Nira, 2019). Data from the P2PTM of

the Ministry of Health of the Republic of Indonesia in 2019 is estimated that as many as 22% of the total world population experiences cases of hypertension in the world. People with hypertension, approximately 2/3 come from middle to lower economies. Every year, the number of people with hypertension continues to increase, in 2025 it is estimated that there will be 1.5 billion people who experience an increase in blood pressure beyond normal, every year 9.4 million people will die from hypertension and complications.

The results of Basic Health Research. in 2018 found that the prevalence of hypertension reached 34.11% in the population of >18 years (Republic of Indonesia, 2021). Hypertension is caused by 2 factors, namely the changeable and the irreversible. The irreversible factors that cause hypertension are age, gender, family history, genetics (risk factors that cannot be changed/controlled). Factors that can be changed are lifestyle such as smoking habits, obesity, lack of physical activity, stress, estrogen use, excessive salt consumption habits, consumption of salty foods, drinks containing caffeine, consumption of foods containing mono sodium glutamate such as vetsin, soy sauce, shrimp paste (Purwono et al., 2020).

Based on the health profile of Kupang City in 2018, hypertension ranked 3rd out of the ten most diseases, with the number of outpatient hypertension sufferers as many as 19,353 patients (11.1%), (Kupang City Health Office, 2018). In the initial data collection, the number of hypertension patients during 2020 at the Oepoi Health Center in Kupang City amounted to 304 people. The lifestyle of people with hypertension in Kupang city is to consume fatty foods such as pork, se'i (meat cured by smoking), alcohol consumption, foods high in sodium. Severely lacking exercise habits (Sunarto, Angelina R; Jutomo, Levi ;D ewi, 2011). In addition to the life habits mentioned above, it is also necessary to study the habit of drinking coffee with the incidence of hypertension in adulthood. The behavior of consuming coffee is currently a lifestyle and has become a popular culture among adults. Coffee can get rid of boredom, a person also really enjoys the aroma and taste of the drink when consuming this drink. The time to consume coffee is done when relaxing and gathering with others (Solikatun et al., 2018). The results of the initial survey, currently there are very many coffee shops in the city of Kupang. This shop will be open from afternoon to evening, which is certainly a good place to be able to gather together, while enjoying a cup of coffee. This drink has become popular with people in Kupang city in addition to alcohol. Currently, coffee produced and traded in Indonesia, including in Kupang City, is mostly robusta

coffee. This type of coffee has a higher caffeine content (2-3%) than arabica coffee (1-1.3%)(Kurniawaty, 2016)

Based on the foregoing, researchers need to study the effect of coffee on the incidence of hypertension in adulthood at the Oepoi Health Center in Kupang City. The purpose of this study was to determine the relationship between coffee drinking habits and increased blood pressure at Oepoi Health Center, Kupang City

2. RESEARCH METHODS

This is a quantitative study with an analytical descriptive design. The pendekatan used is a *cross-sectional* study. This research was conducted in the working area of the Oepoi health center in Kupang City. The total population in this study was 74 who had hypertension. Sampling in this study used *purposive sampling*. Inclusion criteria for people with hypertension without complications, under 65 years old, respondents consumed coffee. The number of samples that fit the inclusion criteria was 37 people. The instrument in this study used a questionnaire consisting of 11 questions about coffee consumption habits.

The dependent variable is hypertension and independent is the habit of drinking coffee. Data collection is carried out through interview methods and blood pressure measurements. Blood pressure measurement is carried out directly to the respondents. Data analysis was carried out descriptively to explain the distribution of age frequency, gender, education, occupation. The frequency of coffee drinking habits and also the level of hypertension experienced by the respondents. To test the effect of coffee drinking habits with an increase in blood pressure, a statistical analysis test was carried out, namely a t-test with a significance value of < 0.05.

3. RESULT

Table 1. characteristics of respondents by age in the working area of the Oepoi Health Center

Age	F	%
27-33 years	2	5,4
34-43 years	12	32,4
44-53 years	8	21,6
54-63 years	15	40,5
Total	37	100
Gender	F	%
Man	20	54,1
Woman	17	45,9
Total	37	100
Work	F	%
IRT	11	29,7
Traders/farmers	2	5,4
Civil Servants/Self-Employed/Private Sector	22	59,5
Nurse	1	2,7
Pensioner	1	2,7
Total	37	100

The results showed that most of the 54-63 years old were 15 people (40.5%) and 27-33 years old as many as 2 respondents (5.4%). Most of the respondents were male as many as 20 respondents (54.1%). Most of the respondents have jobs as civil servants/self-employed/private sector as many as 22 people (59.5%), and the least is pensioners, namely 1 person (2.1%).

Table 2. Distribution of coffee doses for people with hypertension in the working area of the Oepoi Health Center

Coffee Grounds > 1 cennelt in 1 cup/cup	F	%
Yes	6	16,2
Not	31	83,8
Total	37	100

The results showed that 83.8% of respondents used a dose of 1 tablespoon of coffee grounds for each glass/cup.

Table 3. Distribution of the amount of coffee drunk by people with hypertension in the work area of the Oepoi Health Center

Drink Coffee > 2 cups / day	F	%
Yes	1	2,7
Not	36	93,3
Total	37	100

The results of the study found that 93% of respondents consumed 2 cups of coffee every day.

Table 4. Distribution of types of coffee drunk by people with hypertension in the working area of the Oepoi Health Center

Traditional Coffee Grounds	F	%
Yes	1	2,7
Not	36	93,3
Total	37	100

The results of the study found that 93.3% of respondents consumed packaged coffee or coffee that was processed in the factory.

Table 5. Distribution of long time consuming coffee for people with hypertension in the work area of the Oepoi Health Center

Drink Coffee > 1 year	F	%
Yes	6	16,2
Not	31	83,8
Total	37	100

The results of the study found that 83.3% of respondents consumed coffee for less than one year

Table 6. The habit of drinking coffee sufferers in the community in the working area of the Oepoi Health Center in Kupang City July 2021

The habit of drinking coffee	F	%
Keep	12	32,4
Tall	25	67,6
Total	37	100

The results of penelitian found that the habit of drinking coffee in people suffering from hypertension was in the high category of 25 (67.6%).

Table 7. Hypertension category in the working area of Puskesmas Oepi, Kupang City

Blood pressure	F	%
Mild hypertension (140-159/90-99 mmHg)	14	37,8
Moderate hypertension (160-179/100-109mmHg)	20	54,1
Severe hypertension (180-209/110-119mmHg)	3	8,1
Total	37	100

Based on Table 4.1.3 based on blood pressure levels, respondents suffered the most from moderate hypertension as many as 20 respondents (54.1%), mild hypertension as many as 14 (37.8%), and severe hypertension as many as 3 respondents (8.1%). The results of the *one sample t test* obtained a p value of 0.00, it can be concluded that there is a significant influence between the coffee drinking group on the incidence of hypertension.

4. DISCUSSION

The results of this study showed that people with hypertension in the working area of the Oepoi Health Center in Kupang city have a high habit of drinking coffee with a frequency of 2 times / day, a dose of 1 tablespoon for each cup. The coffee consumed by a large ian is factory processed coffee. Research conducted by Rahmawati found that people with hypertension often consume coffee (Rahmawati & Daniyati, 2016). Patients who consume coffee are at risk of uncontrolled blood pressure compared to patients who do not consume coffee. Caffeine contained in one cup of coffee stimulates the vasomotor center and myocardium to increase blood pressure. People who consume 1-6 cups per day experience high blood pressure (Firmansyah & Rustam, 2017). People who drink coffee tend to have degree II hypertension. The habit of drinking coffee is carried out after meals (Udiarto & Astuti, 2019). The results of this study explained that one of the factors causing hypertension is due to consuming coffee

that contains caffeine. People with hypertension generally consume coffee more than 2 times, and there have been doing this habit for more than a year. Coffee increases addiction, a cup of coffee is not enough to consume, so as much as you tend to drink more coffee, this will cause adrenal fatigue. People who consume coffee are at risk of hypertension (Warni et al., 2020).

Alarge percentage of respondents had moderate hypertension and were aged 34-43 years. tends to occur in men rather than women. The group also has a risk of rising blood pressure due to an unhealthy lifestyle. Men often gather together over coffee, which is done almost every day. Men who always consume coffee have severe hypertension (Rahmawati & Daniyati, 2016).. The incidence of hypertension will continue to increase due to the increasing age of a person. Increasing age causes elastin to be damaged and collagen to multiply so that blood vessels get thicker. At the age of 35-50 years, the only reason is the consumption of coffee which is more than 1 cup / day (Ratnasari, 2015).. Most of the respondents were office-goers, private and self-employed. The habit of consuming coffee and smoking is a habit carried out by workers while resting. Workers lack physical activity which is the trigger for hypertension (Ratnasari, 2015).

The incidence of hypertension can occur due to a person's lifestyle that tends to be at risk, one of which is by consuming coffee in large quantities. High Caffeine levels will improve the work of sympathetic nerves which can increase blood pressure.

The results of the study found that there was an influence of coffee drinking habits on the incidence of hypertension. Irregular coffee consumption is associated with an increase in blood pressure and may increase the risk of arterial hypertension (Surma & Oparil, 2021). People with the habit of drinking coffee a day 1-2 cups per day increase the risk of hypertension by 4.12 times higher than those who do not drink coffee. Drinking coffee is dangerous for hypertension because the content of caffeine compounds results in increased blood pressure (Kurniawaty, 2016).

However, there are some different opinions where the habit of drinking moderate coffee 1- 3 cups / day is at low risk of increasing blood

pressure (Surma & Oparil, 2021). People who consumed 3 cups of coffee/day showed systolic blood pressure within 24 hours higher. Coffee consumption habits were associated with uncontrolled blood pressure in 27 hypertensive elderly population (Lopez-Garcia et al., 2016). Coffee consumption of 1-2 cups per day will result in a risk of hypertension as much as 4.12 times higher compared to those who are not used to drinking coffee. Research conducted by Rahmawati found that there is a relationship between the incidence of hypertension and consuming coffee 1-2 cups per day (Rahmawati & Daniyati, 2016). Lestari et al disagreed about the impact of coffee consumption on hypertension, where the habit of drinking coffee did not affect the severity of hypertension in 213 respondents in the work area of the Puskesmas Ban in Cirebon city. It is explained that people with hypertension who consume coffee have adapted to the mechanism of regulating blood pressure (Lestari et al., 2020).

Various factors trigger the occurrence of hypertension, one of which is consuming excessive coffee. If m inum coffee 3-6 cups per day experience higher blood pressure compared to those who consume coffee 1-3 cups per day (Ayu mertiani, 2012). Caffeine causes the heart to work faster. One cup of coffee contains 75-400 mg of caffeine. If you drink more than four cups of coffee a day systolic blood pressure will increase by about 10 mmHg and diastolic blood pressure by about 8 mmHg. A glass of coffee has a high potential to increase blood pressure by 5-10 mmHg so that the risk of hypertension increases 3-4 times (Republic of Indonesia, 2021). The type of coffee consumed also affects the increase in blood pressure, besides that the more often you consume coffee, eating will aggravate the increase in blood pressure (Rahmawati & Daniyati, 2016). Drinking coffee can harm people with hypertension because caffeine compounds can accelerate the increase in blood pressure. Caffeine can take over adenosine receptors in nerve cells which will trigger the production of the hormone adrenaline and cause an increase in blood pressure. Kafein increases blood pressure (BP) through the activation of sympathetic activity and also has the antagonistic properties of the endogenous adenosine, so it can cause vasoconstriction and

increased peripheral vascular resistance (Kurniawaty, 2016). The habit of drinking coffee increases the risk of hypertension, but depends on the frequency and amount of daily consumption.

5. CONCLUSIONS

People with hypertension at Puskesmas Oepoi mostly consume coffee for less than one year. Coffee that is drunk is coffee that is processed in a factory and bought at a coffee shop / shop. It was found that there was a relationship between the habit of drinking coffee and the incidence of hypertension at the Oepoi Health Center in Kupang City. It is necessary to study about other factors that cause hypertension besides the influence of consuming coffee containing caffeine.

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