

Level of Community Knowledge about Caffeine and Salt Consumption in Patients with Hypertension

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ABSTRACT

One of the causes of hypertension in the community is the uncontrolled consumption of food and drink in their lives. Consumption of caffeine can increase heart rate and blood pressure, and consumption of less salt can cause low sodium levels in cells. The purpose of the study was to determine the level of knowledge about caffeine and salt consumption among patients with hypertension. This research design uses the descriptive research method. The population in this study was all patients with hypertension, amounting to 45 people. The total number of samples in this study was 45, using the total sampling technique. This research was carried out from August 2 to August 7, 2021. The analysis was carried out using a computerized process through univariate analysis. Based on the results of the study, it was found that the level of knowledge about caffeine and salt consumption in hypertensive patients among respondents who were in the “good” category was higher, with as many as 19 respondents (42.2%), 9 respondents (20.0%) in the “less” category, and 17 respondents (37.8%) in the sufficient category.

Keywords: Knowledge, Caffeine, Salt, Hypertension

INTRODUCTION

Public health is one of the main assets in the framework of the growth and life of the nation. To realize the highest degree of health for the community, integrated and comprehensive health efforts are organized in the form of public health efforts. One of the efforts to improve health status is through improving the state of environmental health. Environmental health is an important factor in social life and is even one of the determinants of the welfare of the population. A healthy environment is needed not only to improve the degree of public health but also for the comfort of people’s lives.

Coffee is one of the most popular drinks and is favoured by all groups, including young adults. On the other hand, coffee is often associated with a number of risk factors for coronary heart disease, including increasing blood pressure and blood cholesterol levels because coffee contains polyphenols, potassium and caffeine. Caffeine is said to be the cause of various diseases, especially hypertension, but there are still many people, such as young adults, who do not know about it such as young adults who do not know that even if they already know about it, they will still consider the drink is an an obligatory drink that must be enjoyed every day (Zhang et al., 2011).

According to data from the World Health Organization (WHO) in 2020, hypertension is a major health problem worldwide because of its high prevalence and association with an increased risk of cardiovascular disease. About 1.13 billion people in the world suffer from hypertension. This means that 1 in 3 people in

the world are diagnosed with hypertension, only 36.8% of whom take medication. The number of people with hypertension in the world continues to increase every year; it is estimated that by 2025, there will be 1.5 billion people affected by hypertension. It is also estimated that every year, 9.4 million people die from hypertension and complications.

Based on data from the 2018 Basic Health Research (Riskesdas), hypertension is at the highest level of the 5 non-communicable diseases in Indonesia, with a prevalence of 31.7% in 2007, then decreasing in 2013 to 25.8%, and in 2018 showing that the prevalence of hypertension has increased nationally to 34.1%. Based on these figures, the highest incidence of hypertension is in South Kalimantan (44.1%), and the lowest is in Papua (22.2%).

Based on data from the Aceh Provincial Health Office in 2020, the prevalence of hypertension in Aceh Province reached 21%. As for gender, it shows a prevalence of 22.8% for male gender and 28.8% for female gender, while the prevalence of hypertension according to age, age 75 and over, is ranked the highest at 63.8% and the lowest at the age of 15–24 at 8.7% (Aceh Provincial Health Office, 2020). Then data obtained from the Bireuen Regency Office in 2020 showed that the number of people with hypertension according to gender was 26,373 people, consisting of 9,112 men and 17,261 women. According to the report of the Kuala Health Center, Bireuen Regency in 2020, that hypertensive patients who seek outpatient treatment at the Health Center are on average > 40 years old with the number of hypertensive patients according to gender as many as 736 people consisting of 267 men and 469 women.

One of the causes of hypertension in society is the uncontrolled consumption of food and beverages in their lives. Coffee contains many antioxidants that can inhibit diseases caused by oxidative damage. However, on the other hand, coffee is beneficial for reducing the risk of stroke, Parkinson's disease, preventing cancer, improving cognitive function, treating the liver, improving physical work, and opening blood circulation. But on the other hand, coffee has a negative impact because it contains caffeine, which is not good for your health. The effect of caffeine depends on the amount consumed and the person's health condition (Firman, 2017).

When consuming caffeine, you must have knowledge of how much is allowed to be consumed each day. Caffeine in the human body works by triggering the production of the hormone adrenaline, which comes from adinose receptors in nerve cells, resulting in increased blood pressure. The effect of caffeine consumption can be felt within 5–30 minutes and lasts up to 12 hours. The effect will continue in the blood for about 12 hours (Indriyani, 2009).

Salt is one of the strategic conditions because, in addition to being a human need, it is also used as an industrial raw material. For the needs of human consumption, salt has been used as a means of fortification of iodine substances into iodized consumption salt in the context of replacing Iodine Deficiency Disorders (IDD). Salt is one of the sources of sodium and chloride, both of which are needed for human metabolism (Burhanuddin, 2018).

Iodine deficiency disorder (IDD) is one of the most serious problems for the survival and quality of human resources. The recommended salt consumption for each person is about 6 g, or 1 teaspoon, daily. The way of consuming salt is usually as table salt with the addition of iodized salt in cooking (Yanti & Prameswari, 2015).

As conducted by Bistara & Kartini (2018) in his research with the title *The Relationship between Coffee Consumption Habits and Blood Pressure in Young Adults*. The results of the Spearman Rho statistical test $p=0.465$ ($\alpha=0.05$), showed that H_1 was rejected, so it can be concluded that there is a relationship between the habit of consuming coffee and blood pressure in young adults in Demak Jaya, Tembok Dukuh village, Bubutan sub-district, Surabaya. Furthermore, the results of research conducted by Purwono (2020), with the

title Salt Consumption Patterns with Hypertension Events in the Elderly. The results obtained showed that 54.9% of respondents consumed high amounts of salt, and 60.8% of respondents experienced severe hypertension. There is a relationship between salt consumption patterns and the incidence of hypertension in the elderly in the Gadingrejo Health Center Region, with a P value = 0.010 and OR value = 5.704.

Increasing prevalence of hypertension brought on by an unhealthy lifestyle, including overindulging in salt and caffeine. Fast food is extensively consumed by the general public and has a high salt content and low dietary fiber. Patients' attitudes about managing their hypertension will be influenced by their level of knowledge. There is a substantial risk of consequences with untreated hypertension.

The results of an initial survey that researchers have conducted by conducting interviews with 10 hypertensive patients, found that 7 people did not know that consuming caffeine and salt could cause hypertension. While the other 3 people were found to have good knowledge about the side effects or dangers of consuming excessive caffeine and salt.

Based on the background and related research above, the problem formulation in this study is how the level of knowledge about caffeine and salt consumption in hypertensive patients. The aim of this study is to determine the level of knowledge about caffeine and salt consumption among hypertension sufferers.

METHOD

This type of research is called descriptive research. Population is a generalization area consisting of objects or subjects that have certain qualities and characteristics set by researchers to be studied, and then conclusions can be drawn (synthesis) (Masturoh, 2018). The population in the study was all hypertensive patients in Gampong Blang Panjoe, Kuta Blang District, and Bireuen Regency, totaling 45 people. The sample is part of the number and characteristics possessed by the population that are actually studied, and conclusions are drawn (Masturoh, 2018). The sampling technique in this study is total sampling, which is a sampling technique where the number of samples is the same as the population. The number of samples in this study were all from hypertensive patients in Gampong Blang Panjoe, Kuta Blang District, and Bireuen Regency, totaling 45 people.

The research instrument used in this study is a questionnaire modified by the researcher. The instruments in this study are as follows:

- **Respondent Identity**

The respondent's identity consists of the respondent's initials, age, gender, occupation, and education.

- **Community Knowledge**

The questionnaire used for the knowledge of hypertension sufferers is in the form of 15 questions using the Guttman scale. For each statement, the author gives a score. If you answer "True" is given a value of 1, and if you answer "False" you are given a value of 0. The criteria for assessing public knowledge are:

- Good, if the respondent can answer correctly (76–100%) of all questions given.
- Fair, if the respondent can answer correctly (56–75%) of all the questions given.
- Less, if the respondent can answer correctly (56–75%) of all the questions given.

Manual data processing is rarely done, but it can still be done in situations where data processing applications cannot be used. The stages of manual data analysis are as follows:

- **Checking data (Editing)**

Researchers select or re-check the completeness of filling out the questionnaire from the existing questions so that no questionnaires are wasted. The questionnaires were sorted according to the respondent's number on the questionnaire paper. This process is to see if all data has been filled in according to the instructions and there are no errors in filling out the questionnaire during the research.

- **Coding**

After all the data in the questionnaire was complete, the researcher coded all the respondents' answers or information. Researchers code answers with certain numbers or codes so that it is easier and simpler when data processing is carried out. For each statement the author makes an assessment score, if you answer "Correct" is given a value of 1 and if you answer "Wrong" is given a value of 0.

- **Data entry process (Processing)**

In this process, the researcher enters the data into the master table. All data was entered carefully until the last respondent number. This data entry is done by filling in the columns or boxes in the master table according to each answer. For each statement the author makes an assessment score, if you answer "Correct" is given a value of 1 and if you answer "Wrong" is given a value of 0.

- **Tabulating**

The researcher rearranged the questionnaire sheets according to the code and was given a score after checking so that it was easier to present in the master table. Researchers rearranged the questionnaire sheets according to the code and were given a value after checking to make it easier to present into the master table.

Data analysis in this study, namely univariate analysis which aims to explain or describe each research variable.

RESULT AND DISCUSSION

3.1 Univariate Analysis

3.1.1 Characteristics of Respondents

Table 1. Frequency Distribution of Respondents' Demographic Characteristics (n=45).

No	Characteristics of Respondents	Frequency (f)	Percentages (%)
1	Age		
	26-35 years	15	33,3
	36-45 years	9	20,0
	46-55 years	21	46,7
	Total	45	100
2	Gender		
	Man	25	55,6

No	Characteristics of Respondents	Frequency (f)	Percentages (%)
	Women	20	44,4
	Total	45	100
3	Education		
	Primary school	2	4,4
	Secondary School	12	26,7
	High School	19	42,2
	Diploma	3	6,7
	College	9	20,0
	Total	45	100
4	Work		
	Farmer	7	15,6
	Civil servants	4	8,9
	Trader/self-employed	11	24,4
	Laborer	10	22,2
	Not working	13	28,9
	Total	45	100
5	Public Knowledge about Caffeine and Salt Consumption in Hypertension Patients		
	Good	19	42,2
	Enough	17	37,8
	Less	9	20,0
	Total	45	100

Based on Table 1 above, the data obtained showed that respondents aged 46–55 years were 21 (46.7%). The majority of respondents were male, totaling 25 (55.6%). Also seen from education, the majority of respondents were in high school education, totaling 19 respondents (42.2%), and there are 13 respondents (28.9%) who are unemployed. This study also found that knowledge about caffeine and salt consumption in hypertensive patients among respondents who were in the “good” category was higher, with as many as 19 respondents (42.2%).

DISCUSSION

Coffee contains potassium and polyphenols that can lower blood pressure, in addition to having ingredients that can increase blood pressure. Instant coffee is the coffee consumed by respondents. Soluble polyphenols (antioxidants) are contained in instant coffee which has high water fibre. Polyphenols inhibit atherogenesis and improve vascular function. In addition to polyphenols, the content is quite high in coffee is known to be potassium. Potassium inhibits the release of renin which functions to to lower systolic and diastolic blood pressure resulting in an increase in the excretion of water and sodium. The release of renin causes a decrease in cardiac output cardiac output, peripheral pressure and plasma volume, so that blood pressure will drop.

Polyphenols and potassium can balance the effects of caffeine. As for the efforts of individuals in reducing the habit of drinking coffee is by exercising regularly and replacing regularly and replacing the habit of drinking coffee with other drinks. If the habit of drinking coffee continues to be done, it is possible that it will trigger possibility it will trigger the occurrence of hypertension or increased blood pressure because one of the substances from coffee can trigger an increase in blood pressure in the body is caffeine. Caffeine can make blood pressure increases and the heart pounding.

Lack of salt consumption can cause low sodium levels in cells, so that the function of sodium to retain fluid in cells is disrupted, and the body can become dehydrated and lose appetite. Excess salt consumption will increase the amount of sodium in the cells and disturb the fluid balance. The entry of fluid into cells will shrink the diameter of arterial blood vessels so that the heart has to pump blood more strongly, which results in increased blood pressure. Increased blood pressure affects the work of the heart, which in turn increases the risk of heart attack and stroke (Purwono, 2020).

Based on research conducted by Aminuddin et al (2019) it was found that respondents in the study consumed coffee in the frequent category, namely > 1 time per day. The people in the study think that consuming coffee is one way to get rid of drowsiness or headaches. They assume that not consuming coffee makes the head dizzy. The results of the study also assume that the behavior of respondents in consuming coffee is due to a lack of knowledge and public awareness.

Research conducted by Bistara and Kartini (2018) targeted young adult respondents who have a habit of consuming coffee. Based on this research, it is stated that the risk of increasing blood pressure can increase with age due to atherosclerosis, which can support an increase in total peripheral blood vessels to increase afterload heart function, making the heart work harder and causing the occurrence of high blood pressure or hypertension. This shows that the increase in blood pressure is not only caused by consuming coffee. However, it can also be caused by other factors, such as age. As age progresses, blood pressure increases. Thus making the rate of hypertension among the elderly even higher.

This is in line with the theory that reveals that the older a person gets, the greater the risk of developing hypertension, which is due to the fact that in old age, large arteries lose flexibility so that they become stiff. Then the blood is forced to go through narrower blood vessels than usual, resulting in an increase in blood pressure (Hartanti & Mifbakhuddin, 2015).

Consuming coffee has become a culture in the Acehese community. So that it becomes a habit in society. So for people who already suffer from hypertension, they cannot get rid of this habit. They must continue to consume coffee, even in small amounts. According to the results of interviews obtained by many respondents who said that the habit of consuming coffee has become an obligation for some people, some respondents said that when they did not consume coffee, they would feel dizzy or even less enthusiastic about their activities.

Acehese people are also known for spending a lot of free time in coffee shops. Coffee shops in Aceh have a meaning, identity, and history that are different from coffee shops in other areas. Coffee shops were formed because of their role as social interaction spaces or gathering places for the people of Aceh. Coffee shops have become an identity that symbolizes the values of friendship and kinship in Acehese society. This character gives spirit to the coffee shop, making people interested in spending time there (Putra & Ekomadyo, 2015). Based on these research results, it was found that 13 respondents did not have jobs. This condition makes them spend more of their free time in coffee shops to make friends and find work opportunities. This condition ultimately increases their coffee consumption habits.

Based on a study conducted by Santoso et al (2023) it was explained that there is no relationship between consuming coffee and high blood pressure, or hypertension. The majority of selected articles state that there is no relationship between coffee consumption and the incidence of hypertension; some studies conclude that there is an effect of coffee consumption on hypertension with certain respondent characteristics; and there are several factors supporting the influence of coffee consumption with heredity, age, lifestyle, nutritional consumption, daily activities, and also the frequency of coffee consumption.

According to the researcher's assumption, a good level of knowledge in the consumption of caffeine and salt in hypertensive patients is due to the majority of respondents' education in high school, which amounted to 19 respondents (42.2%). The higher the level of education of respondents, the higher the level of knowledge in consuming caffeine and salt in hypertensive patients. Based on the results of the study, it can be concluded that knowledge of caffeine and salt consumption in people with hypertension is in the good category for as many as 19 respondents (42.2%).

CONCLUSION

Based on the results of the study, it was found that the level of knowledge about caffeine and salt consumption in hypertensive patients among respondents who were in the "good" category was higher, with as many as 19 respondents (42.2%), 9 respondents (20.0%) in the "less" category, and 17 respondents (37.8%) in the sufficient category.

Research on the level of knowledge about caffeine and salt consumption in hypertensive patients with a good category of 42%. And respondents with a moderate level of knowledge were 37.8%. Only 9% of respondents' understanding of coffee consumption affects blood pressure. So it can be concluded that there is no relationship between consuming coffee and blood pressure in early adulthood. The limitation of this study is because there is no measurement of caffeine levels contained in coffee consumed by respondents so that the results obtained by coffee do not affect blood pressure.

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