JNK

JURNAL NERS DAN KEBIDANAN
(JOURNAL OF NERS AND MIDWIFERY)
http://jnk.phb.ac.id/index.php/jnk

The Correlation of Drinking Coffee and Incident of Hypertension in Maospati Magetan District

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Article Information

History Article:
Received, 07/10/2021
Accepted, 03/12/2021
Published, 15/04/2022

Keywords:
hypertension, habit of drinking coffee, coffe consumption

Abstract

Hypertension is a common disease in primary care. Hypertension is a cardiovascular disorder marked by elevated blood pressure caused by coffee consumption. Coffee is a favorite typical drink in Indonesia and is one of the causes of hypertension. This study aimed to analyze the relationship between consumption of coffee habits and the incidence of hypertension in the Tanjungsepreh village. The study used a cross-sectional approach. The data collection was obtained by participants filling out a questionnaire. The univariate analysis used descriptive statistics and bivariate analysis used the Spearman-rank test. There were 36 respondents with significant results, P-value = 0.039 and α = 0.05, which meant there was a correlation between consumption coffee habits and hypertension in humans.

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Email: yudisadiaz@gmail.com
P-ISSN : 2355-052X
E-ISSN : 2548-3811
DOI: 10.26699/jnk.v9i1.ART.p012-017

INTRODUCTION

Currently, many people think that when drinking coffee, the body will feel more relaxed and fresher and can increase the power of thought. Drinking too much coffee will indirectly impact health, namely an increase in blood pressure or hypertension. Coffee contains caffeine which is helpful for increasing alertness, eliminating sleepiness, and elevating mood (Wati, 2018). However, according to (Riyanti, Silviana and Santika, 2020) Consuming too much caffeine has adverse effects in the form of abnormal heartbeats, headaches, anxiety, tremors, restlessness, memory loss, insomnia, and causes stomach and digestive disorders. Hypertension is a circulatory system disorder characterized by an increase in blood pressure above normal, increasing the risk of heart disease, stroke, and kidney failure (Masyudi, 2018). A person can be said to be hypertensive if the measurement results of systolic blood pressure are>140 mmHg and diastolic >90 mmHg (Mahmudah *et al.*, 2015). Hypertension is often referred to as the silent killer disease so treatment is often too late (Sartik, Tjekyan and M.Zulkarnain, 2017).

According to the World Health Organization (WHO, 2018) which is summarized in the 2016 Global Health Estimated (GHE), hypertension sufferers reached 63.2% per 100,000 population in the world. Riskesdas 2018, the prevalence of hypertension in Indonesia is 658,201 people; the highest incidence of hypertension is in West Java with 121,153 people. East Java ranks second at 105,380 people (Kemenkes RI, 2018). The highest number of hypertension sufferers in Magetan Regency is 79,692 people (Dinas Kesehatan Kabupaten Magetan, 2018).

Factors that can cause hypertension are generally divided into two major groups: factors that cannot be changed, such as heredity (genetics), gender, and age. At the same time, the factors that can be changed are obesity, lack of exercise, excessive salt consumption, coffee consumption habits, smoking, alcohol consumption, stress, and others. (Rahmawati and Daniyati, 2016). According (Utama, Sari and Ningsih, 2021) in his research, hypertension is influenced by modifiable risk factors such as reducing excessive salt consumption, tobacco and alcohol consumption, obesity, abdominal obesity, stress, and one of them is coffee consumption. In contrast, the risk factors that cannot be modified are family history, age, and gender..

One of the risk factors that can cause hypertension is consuming coffee. Coffee can affect blood pressure because it contains polyphenols, potassium, and caffeine. Polyphenols and potassium lower blood pressure, while caffeine increases blood pressure. Caffeine can stimulate the adrenal glands to release more adrenaline, increasing blood pressure (Harianja, Nadapdap and Anto, 2021). Adrenaline works sympathetically, which affects the increase in heart rate and blood pressure. An increase in heart rate will exacerbate atherosclerosis which is able to cover the surface of blood vessels, causing blocked blood flow resulting in lack of blood flow and oxygen. Blood vessels will receive blood pressure higher than usual, and if it occurs continuously for a long time will cause hypertension (Tri Gesela Arum *et al.*, 2019).

One cup of coffee contains 75-200 mg of caffeine, which can increase blood pressure by 5-10 mmHg (Lestari, Netty and Widyarni, 2020). The slightest effect of coffee on blood pressure will have an impact on health (Kurniawaty, Nabila and Insan, 2016).

Based on previous research conducted by (Rahmawati and Daniyati, 2016) said that there is a very strong relationship between coffee drinking habits and Hypertension Levels in the Work Area of the Fisheries Health Center in Gresik Regency. Based on the above phenomenon, it is necessary to promote socialization to the public about consuming coffee with sufficient levels of coffee drinking and drinking coffee so that blood pressure can be controlled. It is also necessary to increase public awareness and make changes in lifestyle for the better (Mullo, Langi and Asrifuddin, 2018). Another way that can be done is by consuming fruits and vegetables, which are sources of fiber that can help lower high blood pressure (Bertalina, 2016). This study aims to identify the relationship between hypertension and coffee consumption habits.

METHOD

The type of study used correlational with a cross-sectional design. The study was conducted in Tanjungsepreh Village, Maospati, Magetan District in April - June 2020. The population in this study was all hypertensive patients in

Tanjungsepreh Village. The sample was hypertension sufferers in Tanjungsepreh Village who met the inclusion and exclusion criteria that had been calculated and obtained as many as 36 respondents. In this study, in determining the sample the researchers used purposive sampling. The inclusion criteria was respondents who can read and write, are willing to be respondents and respondents who have the habit of drinking coffee.

The independent variable in this study was the habit of coffee consumption while the dependent variable was hypertension incident. Data on coffee drinking habits had been collected by filling out a questionnaire and data on hypertension was collected using a sphygmomanometer. Data on coffee drinking habits was an activity of drinking a beverage that comes from coffee grounds mixed with sugar and then brewed with hot water. The measurement of coffee drinking habits had an alternative answer using an ordinal scale. Each answer had a value ranging from 1 to 15 for questions ranging from mild to severe. Data Hypertension showed an increase in blood pressure > 140/90 mmHg. Hypertension data was categorized using a nominal scale.

RESULT

Table 1: Characteristics of Research Subjects

Distribution of Respondents by Gender in Patients with Hypertension in Tanjungsepreh Village			
No	Gender	Respondent	Percent (%)
1	Male	16	44,4
2	Female	20	55,5
	Total	36	100
Distribution of Respondents Based on Age in Patients with Hypertension in Tanjungsepreh Village			
No	Age	Respondent	Percent (%)
1	30-40	1	2,8
2	41-50	12	33,3
3	51-60	20	55,6
4	60-70	3	8,3
	Total	36	100
Distribution of Respondents Based on Coffee Drinking Habits in Tanjungsepreh Village			
No	Coffee Drinking Habits	Respondent	Percent(%)
1	Light	1	2,8
2	Average	34	94,4
3	Heavy	1	2,8
	Total	36	100

Based on the table above shows that the characteristics of the respondents as many as 20 respondents (55.5%) are female and 16 respondents (44.4%) are male. The age of the most respondents at the age of 51-60 years amounted to 20 respondents (55.6%) and at least the age of 30-40 years amounted to 1 respondent (2.8%). It is known that the habit of drinking coffee in Tanjungsepreh Village has the most moderate coffee drinking habits with a total of 34 respondents (94.4%) and at least 1 respondent (2.8%) with the habit of drinking light coffee.

Table 2: Spearman-rank Test Results of Coffee Drinking Habits with Hypertension Incidence in Tanjungsepreh Village

Coffee Drinking Habits	Hypertension		Total	P *Value*
	Hypertension	Not Hypertension		
Light	0	1	1	*0,039*
Average	32	2	34	

Heavy	1	0	1
Total	33	3	36

The results of the Spearman-rank test show the value of = 0.039 and = 0.05. So, H0 is rejected and Ha is accepted, which means that there is a relationship between coffee drinking habits and the incidence of hypertension in Tanjungsepreh Village.

DISCUSSION

In this study, it was found that the respondents had a habit of drinking coffee for more than 25 years. This research is supported by the results of research conducted by (Saputra, Parjo and Nurfianti, 2016) which says that someone who has a habit of drinking coffee for 1-9 years has a risk of hypertension. The longer a person has the habit of drinking coffee, the body will have a tolerance for caffeine that enters his body.

In this study, respondents also had a habit of drinking coffee with the amount of 1-3 cups of coffee per day more at risk of increasing blood pressure. This is in line with research conducted by (Kurniawaty, Nabila and Insan, 2016) that people who have a habit of drinking coffee a day 1-2 cups per day can increase the risk of hypertension by 4.12 times higher than subjects who do not have the habit of drinking coffee.

Respondents in this study consumed the most types of black or brewed coffee which could increase the risk of hypertension. This is the same as research conducted by (Fahmi Arwangga, Raka Astiti Asih and Sudiarta, 2016) which said that the caffeine content of pure coffee was higher than mixed coffee. The type of coffee can also affect caffeine levels, in Indonesia itself the most well-known types of coffee include Arabica coffee and Robusta coffee. Where Arabica coffee has a lower caffeine content than Robusta coffee (Rahmawati, Wirasti and Rejeki, 2021)

Based on the results of this study, the results of the spearman-rank calculation were obtained, namely the value of p = 0.039 with <0.05. So H0 is rejected and Ha is accepted, which means that there is a relationship between coffee drinking habits and the incidence of hypertension in Tanjungsepreh Village. This is in line with research conducted by (Kurniawaty, Nabila and Insan, 2016) which says that there is a relationship between the habit of drinking coffee and increasing the risk of hypertension, but it depends on the frequency of daily consumption. Another study conducted by (Firmansyah and Rustam, 2017) said that there was a relationship between coffee consumption and blood pressure in hypertension patients at Pembina Palembang Health Center in 2016 (p-value = 0.020). Therefore, having the habit of drinking coffee can increase the risk of hypertension, depending on the frequency of drinking coffee.

In contrast to the research conducted (Wahyuni, Yusuf and Magga, 2020) with the chi square test, the p value = 1000, greater than 0.05, which means that there is no effect of coffee consumption on blood pressure conducted on students at the Muhammadiyah University of Parepare. This is because there are several components, namely polyphenols as antioxidants and potassium which lowers blood pressure which can balance the effect on blood pressure. Similar to research conducted by (Bistara and Kartini, 2018) which concluded that there was no relationship between coffee consumption habits and blood pressure in young adults where p = 0.465 with = 0.05. This proves that respondents who have the habit of consuming coffee do not affect blood pressure excessively but cause blood pressure to rise in a short time then return to normal.

CONCLUSION

The following conclusions can be drawn: There is a relationship between coffee drinking habits and the incidence of hypertension, based on the number of how many respondents drink coffee, how often do they drink coffee and since when do respondents have a habit of drinking coffee and from 36 respondents have a habit of drinking coffee which is classified as moderate as many as 34 respondents or (94.4%).

SUGGESTION

Therefore, researchers provide advice for respondents, it is hoped that respondents understand that having the habit of drinking coffee can increase the risk of hypertension. Therefore, it is better to reduce the consumption of drinking coffee in order to reduce the risk of the incidence of hypertension and further

improve their health. For the Nursing Academy institution, Ngawi Regency Government, it is hoped that this research can be used to develop knowledge, especially those related to the habit of drinking coffee on the incidence of hypertension. For further researchers, this research is expected to motivate further researchers to develop this research so that it is more perfect and useful for all parties.

ACKNOWLEDGMENT

This study was funded by Akademi Keperawatan Pemerintah Kabupaten Ngawi. The authors declared that they have mentioned everyone who made a contribution to the work in this study.

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