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EFFECTIVENESS OF CONSUMPTION OF SOY (GLYCINE MAX (L.) MERRILL) AND GINGER (ZINGIBER OFFICINALE ROSC.) TO REDUCE BLOOD PRESSURE IN HYPERTENSION IN LOUMADORO VILLAGE, RAO ISLAND DISTRICT MOROTAI DISTRICT YEAR 2021

Selvie Ticoalu[1], Masye Tokalese[2], Marselvia Sri Yuningsi Labuha[3]

Diploma III Kebidanan, Makariwo Halmahera College of Health Sciences (STIKMAH)[1]
Medika Mandiri Foundation Halmahera-Tobelo[2]

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Correspondence to Author:
Selvie Ticoalu

ABSTRACT

Background WHO (World Health Organization) states that hypertension affects 22% of the world's population, and reaches 36% of the incidence in Southeast Asia. Hypertension is also a cause of death with 23.7% of the total 1.7 million deaths in Indonesia. According to the 2018 basic health research survey, the prevalence of hypertension based on measurement results in the population aged 18 years was 34.1%, the highest was in South Kalimantan (44.1%), while the lowest was in Papua (22.2%). Hypertension occurs in the age group 31-44 years (31.6%), age 45-54 years (45.3%), age 55-64 years (55.2%). The prevalence of hypertension in Indonesia is 31.7%.

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Research Purpose This research is planned to be carried out in Loumadoro Village, Rao District, Morotai Regency. Meanwhile, the research time is planned for August – September 2021.

Research Methods This type of research is a quasi-experimental research with pretest and posttest control group design. The object of the study was patients with hypertension and the treatment given was the provision of soy milk and ginger with the final result of a change in blood pressure. the results were compared with a control group that was not treated. The sample is part of the population to be studied or part of the number of characteristics possessed by a population of , so the sample used is 6 people who have hypertension consisting of 3 people who are given treatment and 3 people who are not treated.

Result The results showed that the number of respondents 6 respondents (100%) who were given soy milk and ginger as many as 3 respondents (50%) and 3 respondents who experienced a decrease in blood pressure (50%), while those who did not consume soy milk and ginger were 3 respondents. (50%) and 1 respondent (16.7%) who experienced a decrease in blood pressure and 2 respondents who did not experience a decrease in blood pressure (33.3%).

Conclusion By statistical testing using the T test technique, p = 0.016 is smaller than = 0.05, this means Ho is rejected and Ha is accepted. Thus, there is an effect of giving soy milk and ginger to reduce blood pressure in respondents

Introduction

WHO (World Health Organization) states that hypertension affects 22% of the world's population, and reaches 36% of the incidence in Southeast Asia. Hypertension is also a cause of death with 23.7% of the total 1.7 million deaths in Indonesia.[2]

According to the 2018 basic health research survey, the prevalence of hypertension based on measurement results in the population aged 18 years was 34.1%, the highest was in South Kalimantan (44.1%), while the lowest was in Papua (22.2%). Hypertension occurs in the age group 31-44 years (31.6%), age 45-54 years (45.3%), age 55-64 years (55.2%).

The prevalence of hypertension in Indonesia is 31.7%, which means that almost 1 in 3 of the population aged 18 years and over suffers from hypertension. Various factors related to genetics and lifestyle such as lack of physical activity, intake of salty and fat-rich foods as well as smoking and drinking habits have played a role in the soaring rate of hypertension[1].

A. Ginger

The scientific name for ginger is Zingiber officinale Rosc. The word Zingiber comes from the Greek language which was first introduced by Dioscorides in 77 AD. This name was used by Carolus Linnaeus, a botanist from Sweden to give the Latin name ginger.

Classification of ginger

Ginger (Zingiber officinale Rosc.) Ginger plants in plant systematics (taxonomy) are included in the order Zingiberales, family Zingiberaceae, and genus Zingiber.

Kingdom : Plantae

Division: Spermatophyta

Subdivision : Angiosperms

Class : Monocotyledonae

Order: Zingiberales

Family: Zingiberaceae

Genus: Zingiber

Species: Zingiber officinale Rosc.

Table 2.1. The Nutritional content of ginger per 28 g

Nutritional Ginger (every 28 g)

Calories 22

Sodium 4 mg

Carbohydrates 5 mg

Vitamin C 1.4 mg

Vitamin E (alpha tocopherol) 0.1 mg

Niacin 0.2 mg

Folate 3.1 g

Choline 8.1 mg

Magnesium 12 mg

Potassium 116 mg

Copper 0.1 mg

Manganese 0.1 mg

Source, Kurniawati, 2010

B. Soy Milk (Glycine max (L.) Merrill)

Soy Milk Soybean (Glycine max (L.) Merrill) is one type of legume that can be used as a source of protein, asad

The content of soy milk and cow's milk per 100 grams is presented in Table 1.

Table 1. The content of soy milk and cow's milk per 100 grams.

Cow's Milk Soy Milk Components

Calories (kcal) 41.00 61.00

Protein (g) 3.50 3.20

Fat (g) 2.50 3.50

Carbohydrates (g) 5.00 4.30

Phosphorus (g) 45.00 60.0

Vitamin A (SI) 200.00 130.00

Vitamin B (mg) 0.08 0.03

Water (g) 87.00 88.33

Types of research

This type of research is a quasi-experimental research with pretest and posttest control group design. The object of the study was patients with hypertension and the treatment given was the provision of soy milk and ginger with the final result of a change in blood pressure. the results were compared with a control group that was not treated.[14]

Population and Sample

1. Population

Population is a group of subjects who become the object or target of research. The population in this study were all patients with hypertension in Loumadoro Village, Rao District, Morotai Regency as many as 6 people.

2. Sample

The sample is part of the population to be studied or part of the number of characteristics possessed by a population of 14, so the sample used is 6 people who have hypertension consisting of 3 people who are given treatment and 3 people who are not treated

After doing research on 6 respondents, before being given treatment and after being given treatment, namely giving soy milk and ginger with the results of

Univariate Analysis

The purpose of this analysis is to explain / describe the characteristics of the variables studied according to their respective types of data in the form of frequency distribution tables and percentages.

Table 1. Distribution of respondents by gender in Loumadoro Village, Pulau Rao District, Morotai Regency in 2021

NO	Responden	Total	
		n	%
1	Male	2	33,3
2	Female	4	66,7
	Total	6	100

The results of the study are in table 1. It shows that from 6 respondents there are 2 respondents (33.3%) who are male respondents and 4 respondents (66.7%) are female respondents.

Table 2. Distribution of Respondents Based on Consuming Soy Milk and Ginger in Loumadoro Village, Pulau Rao District, Morotai Regency in 2021

NO	Consuming Milk Soy and Ginger	Total	
		n	%
1	YES	3	50
2	NO	3	50
	Total	6	100

The results of the study are in table 2. It shows that of the 6 respondents who consumed soy milk and ginger as many as 3 respondents (50%) and 3 respondents (50%) who did not consume soy milk and ginger.

Table 3. Distribution of respondents based on who experienced hypertension in pregnancy in Loumadoro Village, Pulau Rao District, Morotai Regency in 2021

NO	HIPERTENSION	Total	
		n	%
1	YES	6	100
2	NO	0	0
	Total	6	100

The results of the study are in table 3. It shows that from 6 respondents who have hypertension as many as 6 respondents (100%) and 0 respondents who do not have hypertension (0%)

Bivariate Analysis

Bivariate analysis was carried out to determine the effect of the independent variable and the

dependent variable using the T test. The effect of soy milk and ginger before and after administration of capsules is described as follows:

Table 4. Effect of giving soy milk and ginger before and after on respondents with hypertension

Kelompok	**Tekanan Darah**				**Jumlah**		***α 0.05***
	Turun		Tetap				
	N	%	n	%	N	%	
Diberikan	3	50	0	0	3	50	*p =*
Tidak diberikan	1	16,7	2	33,3	3	50	*0.016*
Jumlah	4	66,7	2	33,3	6	100,0	

Table 4. shows that the number of respondents 6 respondents (100%) who were given soy milk and ginger were 3 respondents (50%) and those who experienced a decrease in blood pressure were 3 respondents (50%), while those who did not consume soy milk and ginger were 3 respondents (50%) and who experienced a decrease in blood pressure were 1 respondent (16.7%) and those who did not experience a decrease in blood pressure were 2 respondents (33.3%).

By statistical testing using the T test technique, p = 0.016 is smaller than = 0.05, this means Ho is rejected and Ha is accepted. Thus, there is an effect of giving soy milk and ginger to reduce blood pressure in respondents

Discussion

The results showed that the number of respondents 6 respondents (100%) who were given soy milk and ginger as many as 3 respondents (50%) and 3 respondents who experienced a decrease in blood pressure (50%), while those who did not consume soy milk and ginger were 3 respondents. (50%) and 1 respondent (16.7%) who experienced a decrease in blood pressure and 2 respondents who did not experience a decrease in blood pressure (33.3%).

By statistical testing using the T test technique, p = 0.016 is smaller than = 0.05, this means Ho is rejected and Ha is accepted. Thus, there is an effect of giving soy milk and ginger to reduce blood pressure in respondents

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