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THE EFFECT OF GIVING TOMATO JUICE IN REDUCING CHOLESTEROL LEVELS ON MENOPAUSE IN BPM NURUL UMAIRA TITI PAPAN, MEDAN DELI DISTRICT

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ABSTRACT

Cholesterol is a fatty substance in the blood that is needed by the body for the formation of cell walls. Excessive fat can cause coronary heart disease which occurs in the elderly, especially in women who have passed menopause due to a decrease in the activity of the hormones estrogen and progesterone which has an impact on increasing cholesterol levels in the body. One non-pharmacological treatment is to consume tomato juice. This Research Objective To determine the effect of giving tomato juice on reducing cholesterol levels in menopause at BPM Nurul Umaira Titipapan, Medan Deli District. The Research method is a Quasi-experimental design with a pre-post test design. The study was conducted in February-May 2021. The population of this study was menopause who did cholesterol checks at BPM Nurul Umaira Titi papan, Medan Deli District. The sample is 15 people, by Total sampling. The independent variable is menopause, the dependent variable is the cholesterol levels of menopause. The research instrument used an Observation Sheet. Processing of statistical test data Sample T-Test. Research results are showing the difference between pre and post-giving tomato juice obtained an average value of 4.667 with Std. Deviation 41,593 with 95% CI 1,367-28,700. The results of the Independent t-Test to determine the difference in the average value of blood cholesterol levels between the intervention group and the control group obtained a p-value of 0.001 ($p < 0.05$). meaning that there is an effect of giving tomato juice to lower blood cholesterol levels. Conclusion: It can be concluded that tomato juice can help lower blood cholesterol levels in menopause

Keywords: Menopause, Cholesterol Levels, Tomato juice

1. PRELIMINARY

Menopause is defined as the absence of menstruation for 12 consecutive months. Menopause is one of the stages of life through all women. Menopause is a transition

period of fertile period to old age. Age where women experience menopause varies. The age of menopause for women in Latin America is 43,8 to 53 years, 50,5 to 51,4 years in North America, and

50.1 to 52,8 years in Europe. Menopause in Asia is 42,1 to 49,5 years. Menopause in Indonesia is 49,98 years (Rosenthal, 2017).

Nearly 70-80% of women around the world experience menopausal syndrome. 60% of women in Europe, 57% in the US, 18% in Malaysia, and up to 10% in China, Indonesia and Japan. The difference, European and American women have higher estrogen levels than Asian women. Physiologically, women experience a period of decrease in estrogen activity and progesterone which causes menstrual cessation followed by various physical and psychological changes (Kumaningsih Is, 2018).

Psychological changes manifest as long-term symptoms such as depression, post-power syndrome, emptiness syndrome, and loneliness. In addition to causing psychological symptoms, it can also cause physical changes such as osteoporosis, coronary heart disease, weight gain, increased blood pressure, increased blood cholesterol, calcification of blood vessel walls (atherosclerosis), atrophic cystitis, and urethritis, cancer, Alzheimer's disease. 2004 in Mira TK and Erniati, 2018).

According to the World Health Organization (WHO), it is estimated that every year around 25 million women worldwide experience menopause, women aged 50 years and over are around 467 million and it is estimated that the number will increase from 500 million to more than 1,2 billion in 2030. Central Statistics (BPS), in Indonesia in 2016 the number of women aged 50 years and over reached 255 million and there was an increase to 268 million in 2020. According to the

2016-2020 population projection, the number of women over 50 years old was 20,9 million. . The number of women living in the age of Menopause in Indonesia is estimated at 30,3 million people in 2020.

According to Riskesdas in 2018, the number of people with high cholesterol at the age of 55-64 years was 5.245 people in Indonesia, and the number of people with high cholesterol in North Sumatra was 2.350 people. The proportion of total cholesterol levels in post-menopausal women is 19% higher than cholesterol levels in pre-menopausal women, and 54,3% higher than cholesterol levels in men, which according to the Healthy Women Study, almost every woman experiences an increase in cholesterol levels during menopause. In the 2 years since the last menstruation, the average total cholesterol increased by about 6,5% (Sugiarto, 2018).

The purpose of this study was to determine the effect of giving tomato juice on reducing cholesterol levels in menopause at BPM Nurul Umaira Titi Papan.

2. MATERIALS AND METHODS

Location and Research Design

This study uses a quasi-experimental research plan with a One Group Pretest Posttest approach. The sampling technique in this study is total sampling, where all the population is sampled. Data analysis used Univariate and Bivariate analysis using Shapiro Wilk test. Data collection uses Primary Data and Secondary Data.

3. RESULTS AND DISCUSSION

1. Univariate Analysis

Univariate statistics is an analysis that is carried out on one or more variables, but they are not related to each other and are analyzed separately (Noor Kholifah, 2018).

Table 1. Distribution of Age, Job, Income per month at menopause at BPM Nurul Umaira Titi, Medan Deli district

No	Age	(f)	(%)
1	49 Years old	5	33,3
2	50 Years old	6	40,0
3	51 Years old	4	26,7
No	Job	f	(%)
1	Work	2	13,3
2	Don't work	13	86,7
No	Income	f	(%)
1	Rp. 1.000.000	3	20,0
2	Rp. > 1.000.000	12	80,0
Total		15	100,0

Table 1. Shows that of the 15 respondents studied, the majority of respondents aged 50 years were 6 people (40,0%) and as many as 4 people (26,7%) were minority 51 years old, while the majority who did not work were 13 people (86,7%) and 2 people (13,3%) minority work and for a month's income the majority are 12 people (80,0%) with an income of Rp.> 1.000.000 and a minority with an income of Rp. 1.000.000 as many as 3 people (20, 0%).

Table 2. Distribution of Average Cholesterol Levels Before and After Giving Tomato Juice

No	Giving Tomato Juice	Normal		Threshold		Height	
		f	%	f	%	f	%
1	Before	4	26,7	9	60,0	2	13,2
2	After	13	86,7	2	13,3	0	0

Table 2. Shows that of the 15 respondents cholesterol levels before giving normal tomato juice were 4 people (26,7%), the threshold level was 9 people (60,0%), as many as 2 people (13,2%) high levels while cholesterol levels after being given tomato juice as many as 13 people (86,7%) normal levels, normal threshold levels as many as 2 people (13,3%).

2. Bivariate Analysis

The difference in giving tomato juice before and after the average value was 4.667, Std. Deviations 41,593. Std. Error Mean 10,739 with 95% CI = 1.367-28,700 with p value = 0.001. From the results of the Paired Sample T Test above, it can be concluded that there is an effect of giving tomato juice on reducing cholesterol levels.

4. DISCUSSION

Based on the cause, cholesterol can be classified as caused by genetic factors, age, gender and secondary hypercholesterolemia which is caused by dietary habits of saturated fat, lack of physical activity, obesity and nephrotic syndrome. If not treated, this cholesterol will be at high risk for coronary heart disease (CHD), stroke, primary arteries (PAP), type 2 diabetes, hypertension, and can even cause death. Foods that are high in saturated fat can cause arteriosclerosis, so it's best if you eat foods that contain saturated fat and

balance it with foods that contain lots of fiber and antioxidants. Fruits and vegetables contain lots of fiber which is good for the body (Found and Erdman, 2019).

Cholesterol levels can be treated using two methods, namely pharmacological and non-pharmacological therapy. Pharmacological therapy is commonly used in patients with hypercholesterolemia, one of which is nicotinic acid (nasin) where this drug has side effects in some people such as nausea and abdominal pain, increasing uric acid levels. Non-pharmacological therapy can be by consuming vegetables and fruits that are high in fiber and antioxidants. Several types of fruit that contain high antioxidants are tomatoes, papaya, soursop, carrots, oranges, mangoes, etc. (Dwijayanthi, 2018).

Tomato is a type of vegetable that contains many antioxidant compounds, including carotenoids, vitamin E, vitamin C, and lycopene. Lycopene is a carotenoid that is needed by the body and has a very strong antioxidant (Sumardiono, 2019). Tomatoes are one of the foods that are high in fiber, tomatoes (*Lycopersicon esculentum*) in the form of juice are easier to absorb and digest by the body. With one glass of tomato juice consumed in a day can reduce bad cholesterol from the body significantly. According to research published in the journal *Maturitas*, cooked tomatoes such as pasta have almost the same properties as cholesterol-lowering chemicals, with about 60 grams of tomato paste consumed or one-eighth of tomato juice per day

is sufficient to obtain these benefits (Apriyanti, 2018).

The results of research conducted by Cici (2017), found differences in cholesterol levels before and after being given tomato juice on the intervention of the effect of giving tomato juice on blood cholesterol levels in adults (45-55) years old in Tarok Kab. Sijunjung, which clinically showed a significant decrease in cholesterol levels from pre-test to post-test. The results of the analysis used an unpaired t-test where the p value = 0.003.

The results of research by Ratna Indah Sari Dewi (2018), found that clinically, cholesterol levels from pre-test to post-test got a significant decrease in the study of the effect of giving tomato juice on cholesterol levels for 7 days. The results of the analysis used an unpaired t test where the p value = 0.003.

The results of Honesty Diana Morika's research (2020), stated that consuming 25 mg of lycopene every day can reduce bad cholesterol by about 10%. These results are equivalent to the effects of low doses of statins (drugs to lower blood cholesterol). Lycopene 25 mg can be obtained from 50 grams of tomato sauce, 100 grams of whole tomatoes or 300 ml of tomato juice. vitamin E, lycopene, flavanoids, In addition to containing vitamin C, tomatoes also have high fiber. Researchers conducted tomato juice therapy for 7 days by blending tomatoes with 200 grams of water without any other additions. Blended tomatoes are tomatoes that are ripe and that are not rotten.

5. CONCLUSION

Based on the results and discussion of research on the Effect of Giving Tomato Juice on Reducing Cholesterol Levels in Menopause at BPM Nurul Umaira Titi Papan, Medan Deli District, it can be concluded that there is an effect of giving tomato juice on reducing cholesterol levels.

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