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EFFECTS OF WATER CONSUMPTION OF DRIED LEAF BLANKED BANANA LEAFERS (*Musa Paradisiaca L*) TO A DECREASE OF CHOLESTEROL CONDITIONS ON HYPERCOLESTEROLEMIA PATIENTS IN VILLAGE GALALA WORKING AREA UPTD.PUSKESMAS INTERIOR TREATMENT GALALA DISTRICT NORTH OBA REGENCY OF TIDORE ISLAND

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ABSTRACT

Hypercholesterolaemia is one of the disorders of blood fat levels in which cholesterol in the blood is more than 240 mg / dL. The content of beta sitosterol and vitamin E in dried banana leaf (*Moses Paradisiaca L*) that can emulsify fat as well as antioxidants are predicted to reduce cholesterol levels in patients with hypercholesterolaemia. This study aims to determine the Effects of Water Consumption Boiled Banana Leaf Stew (*Musa Paradisiaca L)* Against The Decrease Cholesterol Levels In Patients Hypercholesterolemia. Type of research used is research " *Quasy eskperiment design with Pre-post test control group"* . With a large sample of 10 respondents in Galala Village taking samples by *non probability sampling* type *of saturated sampling.* Based on the result of statistical test (SPSS), the significant value = 0,000 <0,05, or T value (30.334)> T table (2,776), the result of statistical test analysis (SPSS) showed that boiled water of dried banana leaf has an effect on decreased cholesterol levels, therefore in the experimental group Ho is rejected and Ha accepted (where sig

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<0.05). While in the control group obtained sig value = 0.302 so it has proved that Ho is accepted because the value of sig> 0,05. Boiled water of dried banana leaves can effectively reduce cholesterol levels in patients with hypercholesterolaemia. In addition to controlling cholesterol levels patients with hypercholesterolemia can make dried banana leaf as a traditional medicine that can lower cholesterol levels.

INTRODUCTION

High blood cholesterol levels can have serious consequences for individual health, the cholesterol category for borderline high (200-239 mg / dL) and High (≥240 mg / dL). A person with a blood cholesterol level above 200 mm / dl has a higher risk of health problems, and the higher the blood cholesterol the higher the risk of heart disease and blood vessels [(1)].

Cholesterol is a complex fat in every cell in the body. Cholesterol is classified as the first ingredient to form bile, cell walls, certain vitamins and hormones such as sex and others [(2)].

According to *World Health Organization* (WHO, 2015) data , hypercholesterolemia has caused the death toll to 2.6 million (4.5% of total deaths) [(3)] . Quoted from *International Journal Of Health Medicine And Current Research* ; According to WHO (*World Helth Organization,* 2011), deaths were caused by cardiovascular disease, especially heart attacks (7.3 billion) and stroke (6.2%). One of the major risk factors for cardiovascular disease is high cholesterol [(2)] . The highest prevalence of total cholesterol was European (54%) and American (48%). While the lowest prevalence is Africa (23%) and Southeast Asia (30%) (3) . A total of 37% of deaths in Indonesia are due to hypercholesterolemia risk factors, of which 35.9% of people aged 15 and older have total cholesterol values above normal [(4)] . Some provinces in Indonesia such as Nangroe Aceh, West Sumatra, Bangka Belitung and Riau Islands have a prevalence of increased cholesterol levels of ≥50% [(5)].

Data from the Provincial Health Office of North Maluku in 2016, reports of non-communicable diseases cases in patients aged 28 to> 60 years recorded in hospitals or other health facilities in each city / district in North Maluku Province, the highest were hypertensive patients (9,306 people), then Diabetes Mellitus (1,634 people), Coronary Heart Disease (97 people), and Stroke (75 people) [(6)].

Based on data from UPTD.Pekesmas Rawat Inap Galala Subdistrict Oba North Tidore Islands District from January to March 2017 people with hypercholesterolemia is as many as 290 people with age from 30 to> 60 years (monthly report UPTD.Pental Health Center Inap Galala Year 2017).

In addition to medical treatment, traditional medicine can also be done to prevent and lower high cholesterol levels. In addition, traditional medicine is also economical and easy to obtain [(6)] . Traditional medicine is proven to be naturally safe and beneficial and can be combined with conventional treatment as a complement to conventional health care or substitute therapy when conventional therapy can not be administered [(4)] . One of the plants under study is banana plants [(7)] .

Dried dried banana leaf (*Moses Paradisiaca L*) is part of a banana cepatu plant that has many benefits. Banana leaves are wide, oval and elongate, with leaf bone [(8)] . One of the compounds contained in dried banana leaves (*Musa Paradisiaca L*) is Beta Sitosterol. Beta sitosterol, one of the ingredients in the sterol fraction has the ability to emulsify fat and reduce the level of cholesterol in the body [(9)] .

METHODS

The type of research used in this study is research that is the type of research that produces findings that can be achieved (obtained) using statistical procedures or other ways of quantification [(29)] . Where the researcher tried to find the *influence of consumption of boiled water of dried banana leaf to the decrease of cholesterol level in patients* with *hypercholesterolemia* by using *Quasy Experiment Design Design Control Group design,* there are two groups in this research that is *experiment group* and *control group* which each group selected at random or random by using *pre test of* t and *post test control group.*

Both groups were *pre-tested* first , then treated and only *the experimental group* received treatment, while *the control group was* not given treatment. After that the two groups performed *post test* again, the purpose of this study to see the difference of the results of both groups and look for the influence *of boiled water of dried banana leaf* to the treated group.

The research design is described as follows:

Table 1. Research Design

Group	Pre test	Treatment	Post test
Experiment	O 1	X	O 3
Control	O 2	-	O 4

Information :

O_1 = Results of measurement of cholesterol levels before consuming dried banana leaves in the experimental group.

O_2 = Results of cholesterol measurement in the control group.

X = Intervention of dry banana leaf banana.

O_3 = Results of cholesterol measurement after consuming dried banana leaves in the experimental intervention group.

O_4 = Results of cholesterol measurement in the control group.

Place of Research

Place of this research will be done in Galala Village Work Area UPTD.Puskesmas Rawat Inap Galala Subdistrict Oba North Tidore Kepulauan Regency.

Research Time

The study was conducted for 3 (Three) months, starting from 20 April to July 2017 **.**

Population

Population is the total amount consisting of objects or subjects that have certain characteristics and qualities set by researchers to be examined and then drawn conclusions. [28] .

Population in this research is hypercholesterolemia patient in Galala Village Work Area UPTD.Puskesmas Rawat Inap Galala Subdistrict Oba North Regency Tidore Kepulauan with amount 290 people.

Sample

The sample is part of a number of characteristics possessed by the population used for the researcher [28] . The sample size was obtained from the population based on the patients who will undergo the intervention procedure consuming *boiled water dried banana leaves* in the village of Galala Work Area UPTD.Puskesmas Rawat Inap Galala Subdistrict Oba North Tidore Kepulauan Regency. In this research the sampling technique used is using *non probability sampling* method by using saturated sampling that is this sampling technique take all member of population become sample. This is done when the population is relatively small, less than 30 people, or research that wants to make generalizations with a very small error. Another term saturated sample is the census, in which all members of the population are sampled [29] .

RESULTS

This research was conducted on 20 April - July 2017 in Galala Village Working Area UPTD.Pekesmas Rawat Inap Galala Subdistrict Oba North Tidore Kepulauan Regency. The sample size was obtained from the population based on the patients who will undergo the intervention procedure consuming *boiled water dried banana leaves* in the village of Galala Work Area UPTD.Puskesmas Rawat Inap Galala Subdistrict Oba North Tidore Kepulauan Regency.

This research uses quantitative research with *Quasy Experiment Design Design Group* design research . There are two groups in this research that is *experiment group* and *control group* which each group is chosen randomly or randomly using *pre* t and *post test design control group.*

Gender is one factor that can influence the increase of cholesterol level, result of research to 10 respondents found that most of respondent suffering from hypercholesterolemia is female compared to men, where women (80%) and men only (20%). This is similar to the results of the study Ira Mutiara (2013) [31] states that there is a significant relationship between the sexes with elevated cholesterol levels, where women have a high cholesterol risk due to hormonal factors, women are higher in foods containing fat because it is more affordable and better. While other factors that affect the age.

From the results analysis test statistics (SPSS) is gained significant value = 0,000 <0 , 05 or T value count (30.334)> T table (2.776), this showing that boiled water of dried banana leaf have influence to decline levels cholesterol on sufferers hypercholesterolemia emia in Galala Village Work Area UPTD.Puskesmas Rawat Inap Galala Sub District Oba North Regency Tidore Islands .

Experiment Group *(Pre-Test and Post-Test*)

Decision-making based on comparisons of T arithmetic and T tables.

a. If T count is greater than T table then ho is rejected

b. If T count smaller than T table then ho accepted

Known T count is 30.334, while T table is searched by way

a. 5% significant level for the 2 side test then the significant level is divided into 2.5%

b. Df *(degree of freedom)* or degree of freedom sought by the formula of the amount of data -1 or 5-1 = 4

c. The test is done by 2 sides with df = 4 value and significant value 0.05 then from t table got value 2,776.

Because T arithmetic lies in the Ho area is rejected, it can be concluded that cholesterol levels before and after consuming boiled water of dried banana leaf is not the same or different significantly.

Decision-making based on probability value

a. If the probability is> 0.05, then Ho is accepted
b. If the probability is <0.05, then Ha is rejected for a 2-sided test, each side is divided 2 to become
   1) The probability number is /2.00.025, then Ho is accepted
   2) Probability /2.00.025, Ha is rejected

It is seen that the T count for total Cholesterol level is 30,334 with a probability of 0.000 for the 2-sided test, the probability number is 0.000 / 2 = 0.00 then Ho is rejected. While T calculated for cholesterol level is 0.00> 0.025, with probability for test 2 side probability number is then Ha rejected.

Group Control (Pre Test and Post Test)

Statistical test results (SPSS) obtained T arithmetic = -1.184 with significant value = 0.05, it can be concluded that there is no effect of cholesterol reduction in the control group. This is shown from significant values (0.302> 0.05) and T arithmetic (-1.184) <T table (2.776).

Decision-making based on comparisons of T arithmetic and T tables

a. If t arithmetic greater than t table then ho rejected
b. If t count is smaller than t table then ho accepted

Given T count is -1.184 whereas T table is searched by way

a. 5% significant level for the 2 side test then the significant level is divided into 2.5%
b. Df (*degree of freedom*) or degree of freedom sought by the formula of the amount of data -1 or 5-1 = 4
c. with a value of df = 4 and a significant value of 0.05 then from T table obtained value of 2776.

DISCUSSION

1. Gender is one factor that can influence the increase of cholesterol level, result of research to 10 respondents found that most of respondent suffering from hypercholesterolemia is female compared to men, where women (80%) and men only (20%). This is similar to the results of the study Ira Mutiara (2013) [(31)] states that there is a significant relationship between the sexes with elevated cholesterol levels, where women have a high cholesterol risk due to hormonal factors, women are higher in foods containing fat because it is more affordable and better. While other factors that affect the age.
2. Increased cholesterol levels occur with age. At an older age the total cholesterol level is relatively higher than the total cholesterol level at a young age, this is because the older the person's LDL receptor activity may decrease.

CONCLUSION

Based on the result of research, it can be concluded that:

1. The average cholesterol level in the experimental group before consuming boiled water of dried banana leaf (*Moses Paradisiaca L*) (pre test) was found there were 3 respondents were in the category of threshold (200-239 mg / dL) and 2 respondents with high category (> 240 mg / dL).
2. The results of cholesterol (post test) measurement in the experimental group showed that cholesterol was decreased in all respondents with hypercholesterolemia after consuming boiled water of dried banana leaf (*Musa Paradisiaca L*) where the average cholesterol level was in normal category (<200 mg / dL).
3. The result showed that there was difference of cholesterol level in experimental group and control group, where in experimental group there was difference at pre and post test that is decrease cholesterol level in hypercholesterolemia patient because influence of drinking water consumption of dried banana leaf (*Moses Paradisiaca L*) while the results of cholesterol (pre and post test) measurements in the control group were relatively the same above the normal category (> 200 mg / dL).

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