

# The Effect of Red Dragon Fruit (*Hylocereus polyrhizus*) and Honey on Cholesterol Levels in Menopause

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## ABSTRACT

High cholesterol are a serious problem because it can interfere with health even threaten human life. One way to lower high cholesterol levels is by administering red dragon fruit and honey juice. From the initial survey conducted in pustu Datengan Puskesmas Grogol district Kediri the number of menopause with cholesterol levels >200 mg/dl amounted to 42 people(10,7%).this study aims to determin the effect of red dragon fruit and honey juice on cholesterol levels in the menopause in pustu Datengan puskesmas Grogol distric Kediri 2021 year.

The research design used was pre experimental research with *One Group Pre Post Design* approach. The population of this is menopause who have cholesterol >200 mg/dl amounted to 16 people. The sampling technique is purposive sampling. The instruments used are *Auto Check blood test* and observation sheet

Results of the research before being given red dragon fruit ang honey juice with an average value of cholesterol levels of 220,94 mg/dl and the results after being given red dragon fruit and honey juice with an average value of cholesterol levels of 199.56 mg/dl. Changes in cholesterollevels before and after treatment were given and mean value of 21.38 mg/dl. On the statistical test result is *Wilcoxon test* in get  $p$  value of 0,000 then value  $p$  value <0,05. This indicates that  $H_0$  is rejected and  $H_1$  is accepted, meaning that there is influence of red dragon fruit and honey juice to cholesterol levels at menopause in pustu Datengan puskesmas Grogol distric Kediri 2021 year

Based on the results of the study is expected menopause can use non pharmacological treatment of red dragon fruit and honey juice to lower high cholesterol levels.

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## I. Introduction

Cholesterol is a fat that comes from the blood, is yellow in color and is in the form of a wax, which is needed by the liver and is needed by the body. Cholesterol belongs to the non-hydrolyzed lipid group and is the main sterol in human body tissues. Cholesterol has an important meaning because it is the main element in plasma lipoproteins and plasma membranes and is a precursor to a large number of steroid compounds [1].There are 2 types of cholesterol produced by the body, namely HDL cholesterol (High Density Lipoprotein) which can be called good cholesterol and LDL cholesterol (Low Density Lipoprotein) which is called bad cholesterol. LDL cholesterol will accumulate on the walls of the coronary arteries causing blockage, therefore LDL is referred to as bad cholesterol [2]. Excess cholesterol levels in the blood is called hypercholesterolemia [3].



In Kediri Regency the number of coronary heart disease and blood vessel disease is 37,931 people or 13.36%. Based on an initial survey conducted at the Pustu coming to the work area of the Grogol Health Center, Kediri Regency in 2021, in January 2021, the number of menopause was 389 people who had hypercholesterolemia as many as 42 people or 10.7%. The impact of high cholesterol levels can cause deposition on the walls of the inner blood vessels and will further impede the flow of blood and oxygen. If a blockage occurs in the blood vessels that supply blood to the heart, there will be a metabolic disorder of heart muscle cells [2].

In an effort to overcome the cholesterol problem suffered by some people, solutions that can be done to deal with high cholesterol levels according to the Indonesian Endocrinology Association (PERKINI) include pharmacological and non-pharmacological therapies. Pharmacological therapy that can be used is by consuming statin drugs, fibrates, resins and others. One of the non-pharmacological therapies or herbal therapies is the therapy of giving red dragon fruit juice and honey. Red Dragon Fruit (*Hylocereus polyrhizus*) is a functional food that is good for health. In red dragon fruit contains increases the good HDL cholesterol. Red dragon fruit has a high niacin content. [4]. In a significant decrease in total cholesterol levels in humans with hypercholesterolemia who were given honey at a dose of 75 g, namely 3.3%, there was a decrease in cholesterol [5].

Honey contains flavonoid compounds, namely isoflavones [6]. The flavonoid content in honey plays a role in reducing total blood cholesterol levels by reducing cholesterol synthesis by inhibiting 3-hydroxy-3methyl-glutary (HMG)CoA reductase, inhibiting triacylglycerol secretion, and increasing HDL [2]. In addition, the vitamin C content in honey can reduce total cholesterol levels in the blood by increasing the conversion of cholesterol into bile acids in the liver and excreting it into the intestines and then expelling it with feces. [7].

Giving red dragon juice has an effect on reducing cholesterol levels. This is in line with the results of a study [8] entitled The Effect of giving red dragon fruit juice to men's total cholesterol. And giving honey has an effect on reducing cholesterol levels. This is in line with the results of a study entitled the effectiveness of giving honey on reducing total cholesterol levels. So that red dragon fruit juice and honey can reduce high cholesterol levels because of the content contained in red dragon fruit such as fiber, niacin, FUFA, vitamin C and the content contained in honey such as flavonoid compounds and vitamin C [5].

## II. Method

### A. Design and Samples

Based on the research objective, it is an experimental type of research with a research design of One Group Pretest-Post Test Design. The independent variable in this study was the administration of red dragon fruit juice and honey and the dependent variable in this study was cholesterol levels. The sample in this study was some of the menopausal women at Pustu Datengan, Grogol Health Center Working Area in 2021, totaling 16 samples.

### B. Data Collections

The sampling technique used was purposive sampling. This research was conducted by giving a pre test (initial observation) before being given treatment (X) after being given the treatment, then doing a post test (final observation) this was done for the difference between the pre test and post test. Researchers conducted an examination of cholesterol levels on respondents (pre-test) to determine cholesterol levels in the elderly before being given treatment and then recorded on the observation sheet. Then given red dragon fruit juice and honey with a dose of 200 g dragon fruit, and 75 g honey, given for 7 days.

### C. Data Analysis

Statistical tests for both variables used the *Wilcoxon* test . All tests are done by using SPSS for Windows 24

**III. Results and Discussion**

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The results of this Effect of giving red dragon fruit juice and honey on cholesterol levels in menopausal women.

Table 1. Effect of giving red dragon fruit juice and honey on cholesterol levels in menopausal women

<i>Blood pressure</i>	<i>Mean</i>	<i>Median</i>	Max	Min	N
Cholesterol levels before giving red dragon fruit juice and honey	220.94	211.00	280	205	16
Cholesterol levels after giving red dragon fruit juice and honey	199.56	191.00	230	184	16
	21,38	<i>P Value : 0,000</i>			$\alpha = 0,05$

Based on table 1 above, The above shows the cholesterol levels before being given red dragon fruit juice and honey, the mean value is 220.94, the median is 211.00, and the minimum is 205. Meanwhile, the cholesterol level after being given red dragon fruit juice and honey, the mean value is 199.56, the median is 191.00, the maximum is 230 and the minimum is 184. the mean before and after red dragon fruit juice and honey was 21.38. Based on the Wilcoxon test paired with SPSS, a significant value or value of 0.000 was obtained. The sig value or value in this study is smaller than the value, which is 0.05 (0.000 < 0.05). If the value of value < 0.05, it means that H0 is rejected and H1 is accepted. This means that there is an effect of giving red dragon fruit juice and honey on cholesterol levels in menopausal women at the Pustu coming to the Grogol Health Center, Kediri Regency in 2021.

Dragon fruit is generally consumed in fresh form as a thirst quencher. This is due to its high water content by weight of the fruit, and honey is widely enjoyed by all ages and is acceptable to all cultures and ethnicities. The use of honey is even recommended by all religions. Dragon fruit and honey contain various substances that can be used to lower cholesterol levels in the blood including tocotrienols, niacin, fiber, and vitamin C and the honey contains flavonoids and vitamin C [8].

**IV. Conclusion**

The conclusion of this study is that regular administration of red dragon fruit juice and honey according to the dose can help lower cholesterol levels in postmenopausal women. Cholesterol levels can decrease if there is a willingness on the part of the respondent to get non-formacological treatment and control diet.

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### References

- [1] Maulana. 2013. *Kolesterol dan Penyakit Jantung Koroner*. Jakarta : Kata Hati
- [2] Loodu. 2012. *Antioksidan, anti-inflamatory and Hipolipidemic Properties of apple Flavanols*. Departement Enviromental of Science Dalhaousie University
- [3] Mayes. 2013. *Transpor Dan Ekres iKolesterol*. Jarkata : Kedokteran EGC.
- [4] Hasdianah. 2014. *Mengenal Kolesterol dengan Solusi Herbal*. Yogyakarta: Nuha Medika
- [5] Bagdanov, 2012. *Honey as Nutrien and Functional Food.*: Bee Product Science
- [6] Asih dkk. 2012. *Isolasidan Identifikasi Senyawa Golongan Flavonoid Dari Madu*. Bukit Jimbaran: Fakultas Kimia Universitas Udayana
- [7] Inayah dkk. 2012. *Efek Madu Randu dan Madu Kolesterol Dalam Menurunkan Kolesterol*. Semarang :Unnes Journal of life science
- [8] Argan. 2014. *Pengaruh Pemberian Jus Buah Naga Merah Terhadap Kadar Kolesterol Total Pria*. Diponegoro