



## Effect of Basil Combination Papaya Juice on Lower Cholesterol Levels in The Blood in Adult Older

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### ABSTRACT

**Background:** Cholesterol is a fatty substance circulating in the blood, yellowish in color and in the form of wax, which is produced by the liver and indispensable by the body. However, if the use is overuse it will be a problem. One of the factors of high levels of cholesterol in excess blood is the lack of consuming fruits and vegetables containing fiber. One of them that we can consume in lowering cholesterol is papaya fruit and basil. Because, papaya fruit contains pectin and basil contains flavonoids, where the two content can lower cholesterol levels. The purpose of this study was to identify cholesterol levels in the blood before and after being given basil combination papaya juice. **Methods:** This research uses Pre Experimental research method with one group pre-post test design. Sampling technique using Purposive Sampling method. Data analysis using SPSS. **Results:** The statistical test result of Paired Sample t Test obtained a Sig (2-tailed) value in the treatment group is  $p=0.805 (>0.05)$  which means there is no difference before and after intervention. The results of these statistical tests show no influence. **Conclusion:** Based on the analysis of data that has been done, it was concluded that there is no influence of administration of basil combination papaya juice to decrease cholesterol levels in the blood.

Keyword: Adult older, basil, cholesterol, papaya juice

## INTRODUCTION

Moment This problem health Already switch from disease infectious to disease degenerative. The cause allegedly Because change style life, pattern eat, factor environment, lack of activity physical, and factors stress. Poor lifestyle motion, too Lots consume food fatty and pregnant cholesterol, as well lack fiber can trigger emergence disease degenerative. Disease degenerative that has impact significant to pain and death is disease cardiovascular (Pangalo, 2021) . Modern developments have change style life society, both in developed countries nor develop. One of them is pattern tend to eat high in fat and cholesterol, such as food fast serve. Consume food high in fat and cholesterol increase rate cholesterol blood and responsibility answer on around one third from all disease cardiovascular (Zahra et al., 2019) .

Prevalence hypercholesterolemia Still relatively tall. Moment Currently, around 45% of people worldwide suffer from it hypercholesterolemia, 30% in Southeast Asia, and 35% in Indonesia. Estimated hypercholesterolemia result about 2.6 million deaths and 29.7 million disability every the year (Sinha et al., 2019) . According to Riskesdas data in 2018, it shows that up to 21.2% of Indonesian residents aged over 15 years own rate Abnormal cholesterol in women more Lots from man with amount man as many as 18.3% and women 24.0%. According to data from the Gresik District Health Service (2016), prevalence pattern death consequence disease No infectious the more increase from 37% to 57% in the period 1990-2015. The data show that sufferer disease cholesterol Still exist and experience enhancement. During this, in Singorejo Hamlet Village Dahanrejo Subdistrict Kebomas in management for lower cholesterol done in a way pharmacology just with the posyandu program adult older, however Not yet Once done treatment non - pharmacologically. The data obtained researcher final visit inhabitant adult older to Integrated Healthcare Center adult older in months February 2020 in Singorejo Hamlet

Village Dahanrejo Subdistrict The kebomas experienced cholesterol as many as 21 people.

Management rate more cholesterol of 200 mg/dL using two methods that is with therapy pharmacological and non- pharmacological. Therapy usual pharmacology used by sufferers Hypercholesterolemia is one of them is drug sour nicotinic (niacin). Niacin own effect aside from some people, namely nausea and pain in the abdomen, increasing rate sour urates (hyperuricemia) with hinder acid tubular secretion tendon. Non- pharmacological therapy in management rate more cholesterol of 200 mg/dL one of them is use type vegetables and fruit that contain tall fiber and antioxidants. A number of type plants containing antioxidants and fiber tall among them is papaya (Desrelia et al., 2020).

Plant Basil (*Ocimum basilicum* L.) also contains flavonoids and eugenol which play a role as antioxidants, which can neutralize cholesterol and properties anticancer (Fitriani et al., 2021). However influence combination papaya and basil to decline rate cholesterol in blood Not yet researched and known. Fruit pawpaw is fruit lots of tropical growing in Indonesia, we often encounter fruit papaya in supermarkets and traditional markets, fruit Papaya tastes sweet, besides it tastes sweet fruit papaya is also easy available and the price is also cheap. Fruit papaya also has effect antihypercholesterol through activity various type compound contained biology inside it like niacin, antioxidant papain enzyme such as vitamin C, vitamin E, vitamin A, pectin, and flavonoids (Asmariyani & Probosari, 2012). Pectin is fiber food that has ability can also form gels with ions lower absorption cholesterol. Pectin nature binding and enhancing expenditure sour bile later will wasted together feces. Binding sour bile by pectin cause sour bile go out from cycle enterohepatic. Decline amount sour bile cause liver use cholesterol in blood as material For form sour bile. Enhancement sour bile feces or lost cholesterol can cause decline plasma cholesterol (Desrelia et al., 2020).

Leaf basil is one of plant lots of nature available and easy obtained in Asia like the case in

Indonesia. Besides used as material food, leaves basil trusted can help overcome various disease Because content the phytochemicals. Leaf Basil is rich in macro minerals that is calcium, phosphorus, and magnesium, also contain beta-carotene and vitamin C. Leaves basil also contains non- nutritional components including compounds flavonoids and eugenol, arigin, anetol, boron, and oil essential. Content leaf basil with a reduction process rate high cholesterol is beta-carotene, compound phenols (tannins) vitamin C and flavonoids type of quercetin. The role of vitamin C is as homeostasis to achieve balance so that can lower rate total cholesterol and triglycerides in people who have rate cholesterol high (Damayanti et al., 2020). Based on study previous and description above, then researcher interested for do study with title "Effectiveness Giving Papaya Juice Combination Basil To Reducing Cholesterol Levels in Blood in the Adult Older".

**METHOD**

Study This use design study *pre experimental* with design design *one group pre-post-test design*. Taking sample done with purposive sampling technique totaling 20 people. Retrieval technique sample in study This with *purposive sampling*. Sample shared into 2 groups, each group consists of 10 people. Group First given papaya juice combination basil, each day given drink 400 ml for 7 days consecutive mornings day before breakfast. Analysis used is *paired sample t test* with using SPSS.

**RESULTS**

**Rate Internal Cholesterol Blood before Provided Intervention**

Table 1. Levels Cholesterol on group treatment and control before being given intervention (n = 20)

Cholesterol Levels	Group			
	Treatment		Control	
	n	%	n	%
Desirable (<200 mg/dL)	2	20	7	70
Limit high (200-239 mg/ dL)	5	50	3	30
Tall (>240mg /dL)	3	30	0	0
Mean	221.80		185.20	
Std Deviation	26,368		18,317	

Table 1 explains that before being given the intervention, the cholesterol levels of the majority of respondents in the treatment group were in the high range, namely 5 people (50%) and high, namely 3 people (30%). Meanwhile, the cholesterol levels of most respondents in the treatment group were within the desired limits, namely 7 people (70%). the average value in the treatment group is 221.80 while in the control group it was 185.20. And the standard deviation in the treatment group was 26.368 while in the control group it was 18.317.

**Rate Cholesterol In Blood After Provided Intervention**

Table 2. Levels Cholesterol on group treatment and control after being given the intervention

Cholesterol Levels	Group			
	Treatment		Control	
	n	%	n	%
Tall fat fed up	8	80	8	80
Restrictions fat fed up	2	20	2	20
Tall (>240 mg/dL)	3	30	0	0
Mean	221.30		189.20	
Std Deviation	27,232		15,411	

Table 2 explains that before being given the intervention, the cholesterol levels of the majority of respondents in the treatment group were in the high range, namely 5 people (50%) and high, namely 3 people (30%). Meanwhile, the cholesterol levels of most respondents in the treatment group were within the desired limits, namely 7 people (70%). With the average value in the treatment group, namely 221.30 while in the control group it was 189.20. And the standard deviation in the treatment group was 27.232 while in the control group it was 15.411.

**Influence Giving Juice Pawpaw Combination Basil on Reducing Blood Cholesterol Levels in The Adult Older**

Table 3. Influence giving juice pawpaw combination basil on reducing cholesterol levels in the treatment group

Cholesterol Levels	Group			
	Before Interven		After Interventi on	
	n	%	n	%
Desirable (<200 mg/dL)	2	20	2	20
Limit high (200-239 mg/ dL)	5	50	5	50
Tall (>240mg/dL)	3	30	0	0

Mean	221.80	221.30
Std Deviation	26,368	27,232
<i>Paired Samples Test mark Sig. (2-tailed) = 0.805</i>		

Table 3 above shows the number of respondents before and after being given the intervention. Based on the results of the *Paired Samples Test* It is known that the average value before being given papaya juice with a combination of basil was 221.80 and the standard deviation value was 26.368, while the average value after being given papaya juice with a combination of basil was 221.30 and the standard deviation value was 27.232 with a significant value of  $p=0.805$ , meaning  $p > 0.05$  then  $H_0$  is accepted, which means there is no effect of giving papaya juice combined with basil on decline rate cholesterol in the blood. Judging by the slight difference in the average value produced in the statistical test, it shows that there is a slight decrease in cholesterol levels but it is not very significant.

## DISCUSSION

### Blood Cholesterol Levels Before Intervention

The results of the study showed that respondents in the treatment group before being given papaya juice with a combination of basil and the control group without being given papaya juice with a combination of basil had most of their cholesterol levels in the high and high limits.

The results showed that the respondents in the treatment group were mostly female, namely 9 people (90%) compared to 1 male person (10%). In the control group, the majority were women, namely 8 people (80%) compared to 2 men (20%). The results of this study are in line with Sri Ujii (2015) who stated that women have a greater risk of experiencing increased cholesterol levels. Because someone who is female, the older they get, the higher their cholesterol levels will be.

The results showed that the respondents in the treatment group were mostly 55-64 years old, namely 5 people (50%). In the control group, most of them were 65-74 years old, 7 people (70%). The results of this study are in line with Listiana and Purbosari (2010) results showing

that there is a relationship between total cholesterol levels and age with a  $p$  value of 0.00 ( $< 0.05$ ). This is in accordance with the theory that the risk of getting high cholesterol can increase with age.

The results showed that most of the respondents in the treatment group had elementary school education, 8 people (80%). In the control group, most of them had elementary school education, 5 people (50%). Education has been proven to increase knowledge. This is because in health education there is a learning process. In the short term, the learning process will increase a person's knowledge.

The results showed that most of the respondents in the treatment group had jobs as farmers, 8 people (80%). In the control group, most of them were less active in sports or physical activity, 5 people (50%). The results of this research are in line with the results of Sulviana's (2008) research on exercise by Wiyono et al., (2004) which states that heavy activity requires a lot of energy and this energy is obtained from glucose and then lipids as the next alternative. Manual workers generally come from low socioeconomic backgrounds, so their nutritional intake is limited. This will affect low energy stores and waste products including cholesterol.

The results showed that all respondents in the treatment group were less active in exercising or doing physical activity as many as 10 people (100%). In the control group, most of them were less active in sports or physical activity, 8 people (80%). The results of this study are in line with the results of research by Sulviana (2008) that exercising can increase HDL in the blood by up to 20-30%. This exercise habit can get rid of cholesterol, but it doesn't last long if you stop exercising. Daily physical exercise activities that a person does regularly in order to provide physical fitness in a week for at least 30-45 minutes/3-4 times a week (Ministry of Health of the Republic of Indonesia, 2006).

The results showed that all 10 respondents in the treatment and control groups did not smoke (100%). Cholesterol levels are higher in smokers compared to non-smokers. According

to Veena (2014), nicotine, which is the main component of cigarettes, can increase secretion. This causes an increase in cholesterol levels. Smoking can also cause increased oxidation of LDL cholesterol which will cause narrowing of blood vessels.

The results showed that most of the respondents in the treatment and control groups had a diet high in saturated fat, 8 people (80%). The results of this study are in line with Bintanah (2010) that there is a relationship between fat consumption and the incidence of hypercholesterolemia. High fat consumption (25% total energy) has a 5.95 times tendency to develop hypercholesterolemia compared to low fat consumption (< 25% total energy). Excessive fat intake will trigger cholesterol levels to increase. Excessive fat consumption, especially saturated fatty acids, will affect Low Density Lipoprotein (LDL) levels.

#### **Cholesterol Levels in Blood After Given Intervention**

During research, all over respondents in the group treatment given papaya juice combination basil per day 400 ml for 7 days and consumed in the morning drink it at 08.00 before respondents breakfast. Antioxidant works as functional compound For zoom out the oxidation process occurs from fats and oils (Apriandi et al, 2011). Fruit pawpaw of course own effect antihypercholesterol through activity various type compound contained biology inside it that is pectin, and flavonoids. The role of pectin in lower rate cholesterol is with binding and enhancing expenditure sour bile. Binding sour bile by pectin cause sour bile go out from cycle enterohepatic. Decline amount sour bile cause liver use cholesterol in blood as material For form sour bile. Enhancement sour bile feces or lost cholesterol can cause decline plasma cholesterol (Asmariansi, 2012). Leaf basil own content flavonoid compounds that can lower rate cholesterol with method lower absorption sour bile and cholesterol in the small intestine so that cause increase excretion past feces, p This mention cells heart experience enhancement formation sour bile from cholesterol will reduce fat because changed become energy.

Based on results study giving papaya juice combination basil this is what you drink for 7 days consecutively in time Morning day before Eat. Can concluded that rate cholesterol respondents in the group treatment after being given intervention giving papaya juice combination basil, some big in the high limit (200 – 239 mg/dL) as many as 5 people (50%) and high (>240 mg/dL) as many as 3 people (30%). With drinking papaya juice combination basil, there were 6 respondents who experienced it decline rate cholesterol and 4 respondents experienced enhancement rate cholesterol.

#### **Effects of Papaya Juice Combination Basil to Reducing Cholesterol Levels in Blood**

Based on the statistical test results of the Paired Samples Test are known that average value in the group intervention after given papaya juice combination basil is 221.30 and value standard the deviation is 27.232 with mark significant  $p=0.805$ , meaning  $p>0.05$  then  $H_0$  is accepted which means No there is influence giving papaya juice combination basil to decline rate cholesterol in blood. According to Endrinaldi & Asterina, (2012) about influence extract pawpaw to rate total cholesterol, LDL, HDL blood mouse white male hypercholesterolemia known, at doses of 0.5 ml, 1 ml, and 1.5 ml of extract papaya induced in mice for 15 days can lower rate cholesterol. At a dose of 0.5 ml on average rate cholesterol before giving extract pawpaw namely 100.8 whereas rate cholesterol after giving extract pawpaw namely 63.0. At a dose of 1 ml on average rate cholesterol before giving extract pawpaw namely 101.4 whereas rate cholesterol after giving extract pawpaw namely 61.2. At a dose of 1.5 ml on average rate cholesterol before giving extract pawpaw namely 100.0 whereas rate cholesterol after giving extract pawpaw namely 69.0. This matter show that dose given influential to decline rate cholesterol.

According to Aloysius M. Kopon, (2021) about extract leaf basil in lower rate rat total cholesterol Sprague Dawley hypercholesterolemia known, at doses of 20 mg, 40 mg, and 80 mg extract basil induced in

mice for 7 days can lower rate cholesterol. But on research this, with combine second material the that is papaya and basil Where pawpaw contain the pectin proves it can lower rate cholesterol whereas basil contains flavonoids shows that decline rate cholesterol produced No too significant.

A number of possibility causal factors No exists influence in results study This such as because mark rate cholesterol respondents within the desired limits, apart from That because dose given too small namely 1 ml in papaya and 20 mg in basil with the administration takes less time, namely 7 days, so resulting in papaya juice combination basil This No influential in lower rate cholesterol. Factor others that is researcher No Can take Lots respondents Because study This done during the Covid-19 pandemic, and the lack of it respondents in obey diet pattern rules recommended meals researcher that is reduce consumption lots of food contains fat. Study This in line with Chic Suarsih, (2020), namely exists connection pattern Eat to rate cholesterol caused Because often consume fatty foods and high levels of saturated fat.

## CONCLUSION

There is a difference rate cholesterol in blood in groups treatment before and after given papaya juice intervention combination basil. Average grade results cholesterol before given intervention namely 221.80 and after given intervention namely 221.30. This matter show there is A little decline rate cholesterol seen from the resulting average value, however No too significant. Statistical test results *paired sample t test* obtained the sig (2-tailed) value is  $p=0.805 (>0.05)$ , meaning No there is influence giving papaya juice combination basil to decline rate cholesterol in blood.

## SUGGESTION

Researcher hope For study furthermore Can developed more Far again and necessary done efforts study furthermore For see aspect others who can make decline rate cholesterol more effective and possible factor reason rising rate cholesterol in blood. Should study this Can done in a longer time (more of 7 days), samples

taken Can more a lot, and pay attention factor inhibitor that can influence in study.

## REFERENCES

- Aloysius M. Kopon, Y. K. A. M. A. E. A. (2021). Aktivitas Antihiperkolesterolemia Ekstrak Akar Dan Batang Kemangi Hutan (Ocimum Sanctum) Pada Tikus Putih. *Jurnal Farmasi Medica/Pharmacy Medical Journal (Pmj)*, 4(1), 1. <https://doi.org/10.35799/Pmj.4.1.2021.34518>
- Asmariyani, W. G., & Probosari, E. (2012). Pengaruh Pemberian Buah Pepaya (Carica Papaya L.) Terhadap Kadar Kolesterol Ldl Dan Kolesterol Hdl Pada Tikus Sprague Dawley Dengan Hiperkolesterolemia. *Journal Of Nutrition College*, 1(1), 258-264. <https://doi.org/10.14710/Jnc.V1i1.369>
- Damayanti, A. Y., Anjana, A. R., & Darni, J. (2020). Hubungan Asupan Vitamin E Dan Vitamin C Dengan Kadar Kolesterol Total Pada Pasien Hiperkolesterolemia. *Nutri-Sains: Jurnal Gizi, Pangan Dan Aplikasinya*, 4(2), 117-126. <https://doi.org/10.21580/Ns.2020.4.2.3599>
- Desrelia, R., Apriza, & Azzahri, L. M. (2020). Efektifitas Jus Buah Pepaya Terhadap Penurunan Kolesterol Pada Penderita Hiperkolesterol Di Puskesmas Kampar Tahun 2020. *Jurnal Ners*, 4(2), 11-20.
- Endrinaldi, E., & Asterina, A. (2012). Pengaruh Pemberian Ekstrak Pepaya Terhadap Kadar Kolesterol Total, Ldl Dan Hdl Darah Tikus Putih Jantan Hiperkolesterolemia. *Majalah Kedokteran Andalas*, 36(1), 29. <https://doi.org/10.22338/Mka.V36.I1.P29-38.2012>
- Fitriani, D., Hasbie, N. F., & Fuadiyah, Z. (2021). Studi Literatur Pengaruh Pemberian Ekstrak Kemangi (Ocimum Basilicum L.) Terhadap Kadar Kolesterol Total Pada Tikus Putih (Rattus Norvegicus) Jantan Galur Wistar Yang Diberi Diet Tinggi Lemak. *Jurnal Ilmu Kedokteran Dan Kesehatan*, 8(2), 173-180.

- Pangalo, P. (2021). Hubungan Gaya Hidup Keluarga Dengan Kejadian Hipertensi Pada Usia Dewasa Muda Tahun Di Desa Bulotalangi Kecamatan Bulango Timur Kabupaten Bone Bolango. *Journal Of Noncommunicable Disease*, 1(1), 33. <https://doi.org/10.52365/Jond.V1i1.224>
- Sinha, R. A., Bruinstroop, E., Singh, B. K., & Yen, P. M. (2019). Nonalcoholic Fatty Liver Disease And Hypercholesterolemia: Roles Of Thyroid Hormones, Metabolites, And Agonists. *Thyroid*, 29(9), 1173–1191. <https://doi.org/10.1089/Thy.2018.0664>
- Suarsih, C. (2020). Hubungan Pola Makan Dengan Kejadian Kolestrol Pada Lansia Di Wilayah Kerja Puskesmas Tambaksari. *Jurnal Keperawatan Galuh*, 2(1). <https://doi.org/10.25157/jkg.V2i1.3583>
- Zahra, S., Suroto, S., & Rosidi, A. (2019). Pengaruh Pemberian Jus Buah Naga Merah (*Hylocereus Polyrhezeus*) Dan Aktifitas Fisik Terhadap Kadar Kolesterol Total Dan Kadar Mda (Malondialdehyde). *Jurnal Ilmiah Spirit*, 19(1), 12–27. <https://doi.org/10.36728/jis.V19i1.955>