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The Effect of Giving Honey Pineapple Juice on Decline Cholesterol Levels

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Abstract

Eating excessive foods high in fat and cholesterol can increase cholesterol levels and can cause various risk dangerous in Health. Lifestyle No controlled and uncontrolled healthy can also cause disease cholesterol . Non- pharmacological treatment For lower level cholesterol that is not cause effect beside one of them with giving honey pineapple juice. The objective of this study is to determine the effect of giving honey pineapple juice on reducing cholesterol levels in Bedali Village, RW 11 Lawang, Malang. This research method uses a quantitative method with a pre-experimental one-group pretest-posttest design. The population in this study were all cholesterol sufferers in Bedali Village, RW 11, Lawang, Malang. The sample in this study consisted of 32 respondents selected using a purposive sampling technique. The results of the study showed that before giving honey pineapple juice to 32 respondents, almost all respondents, 24 respondents (75%) had high cholesterol levels, after giving honey pineapple juice for 7 days, almost all respondents, 28 respondents (87.5%) had normal cholesterol levels, and based on the Wilcoxon Test, the asymp. Sig. (-2 tailed) value was .000 or P-Value (<0.05). Honey pineapple juice can have a positive impact on reducing cholesterol levels, making it a non-pharmacological therapy for managing cholesterol levels. This study shows a significant decrease due to the administration of honey pineapple juice to cholesterol sufferers without involving the consumption of pharmacological drugs.

INTRODUCTION

High cholesterol is a current health concern, affecting not only obese individuals but also thin individuals. It can also affect young people and other groups (Wawarni et al., 2021). As time goes by, various things are now happening type food that makes style life they No controlled and uncontrolled Healthy Can make various diseases that circulate and develop very widely and quickly , one of which is cholesterol is important compounds for body as arrangement various chemical processes . However if level cholesterol in blood happen improvement can cause various risk dangerous in Health (Muqowwiyah, 2021).

Excessive cholesterol can have adverse effects and lead to health problems such as obesity, hypertension, coronary heart disease, and stroke. Excess cholesterol can impede blood flow by causing fat to accumulate in blood vessels, which can lead to atherosclerosis, or narrowing of the arteries (Anis Hulu, 2022). According to Triharyanto (2020), high cholesterol does not cause symptoms. As a result, many people are unaware they have high cholesterol levels until serious complications such as heart disease or stroke develop.

The American Heart Association estimates that currently 98 million Americans have cholesterol levels above 200 mg/dL and this is expected to continue to increase. The results of the 2023 Indonesian Health Survey also revealed that Indonesians aged 15 years and above suffer from hypercholesterolemia because people often consume high-fat foods at least once a day, with a total of 877,531 cases consisting of 443,261 in men and 434,270 in women. The prevalence of high cholesterol levels in East Java reached 36.1% (with cholesterol levels <40 mg/dL), while the incidence of dyslipidemia in Malang City was 40.8% in men and 59.91% in women (Pekerti et al., 2019) . Increased cholesterol levels are estimated to cause 2.6 million deaths and 29.7 million disabilities per year (Riskesdas, 2018).

The causes of hypercholesterolemia include genetic factors, weight gain, aging, a diet high in cholesterol or high in saturated fatty acids, decreased estrogen levels in postmenopausal women, and can occur due to age, physical activity, education, gender, and smoking (Aryani & Mu'awanah, 2019).

One of the treatments for cholesterol is non-pharmacological treatment, which is popular among the public because it does not cause severe side effects compared to chemical drugs. Researchers want to implement a healthy lifestyle by choosing non-pharmacological therapy or treatment that will be given to people with cholesterol, namely by giving pineapple juice, which is expected to lower cholesterol levels.

Pineapple is a plant often used in various culinary preparations. Besides being consumed raw, this fruit is also often processed into juice. As a tropical fruit, pineapple contains various bioactive compounds, such as vitamins, minerals, and phytochemicals, which contribute to various health benefits. One important compound in pineapple is pectin, which is known to lower cholesterol levels by binding bile acids and supporting their excretion from the body (Airlangga, 2020).

The benefits of pineapple in lowering cholesterol are thought to come from its fiber and antioxidants. Pineapples come in several varieties, one of which is honey pineapple. Honey pineapple (*Ananas comusus*) is a form of complementary therapy containing Vitamin C and flavonoids, which are good for lowering cholesterol levels. Pineapples are readily available and contain several substances that can lower or normalize cholesterol levels, such as myricetin, polyphenols, vitamin C, niacin, and the enzyme bromelain. Mericytin functions to regulate cholesterol absorption in the liver and accelerate triglyceride excretion. Polyphenols, as antioxidants, function to improve lipid levels by increasing the activity of the enzyme peroxidase. Vitamin C in pineapple helps regulate lipid levels by assisting in the formation of bile fluid through extrahepatic cholesterol excretion. In addition, pineapple contains Niacin, which works by inhibiting fat transport to the liver, thereby reducing triglyceride synthesis and having an anti-dyslipidemic effect. Niacin can lower cholesterol and free fatty acid levels in the blood. Meanwhile, the enzyme bromelain, although not directly involved, helps break down cholesterol plaque that forms in blood vessels (Ghazi, 2021).

Alfiyah Anis Hulu's 2021 study on the effect of pineapple juice on lowering cholesterol levels in hypercholesterolemia patients found that in the control group, the average cholesterol level before treatment (pre-test) was recorded at 228 mg/dL, while after treatment (post-test) it decreased to 225.26 mg/dL with a difference of 11.46 mg/dL. Meanwhile, in the experimental group given pineapple juice, the average initial cholesterol level was 236.7 mg/dL and after the intervention decreased to 170.86 mg/dL, so there was a difference of 65.86 mg/dL. The results of the study also showed that there was a significant difference between cholesterol levels before and after consuming pineapple juice in lowering cholesterol levels in hypercholesterolemia patients in Pasar Merah Timur Village, Medan City. And based on the results of in vivo research on rabbits by giving pineapple juice doses of 10 grams, 20 grams, and 30 grams for 10 days based on statistical tests, it was found that there was a decrease in cholesterol levels in rabbits by giving pineapple juice doses of 10 grams (Zuhrawati, NA, 2014). In the study of Alfiyah Anis Hulu (2021) it resulted in a significant decrease by giving pineapple juice at a dose of 150 g / day for 1 week in hypercholesterolemia sufferers aged 30-40 years, while the difference with this study is that the researcher chose honey pineapple in giving his pineapple juice, and the researcher gave honey pineapple juice to cholesterol sufferers for 7 days as much as 250 ml 1x a day every Morning after respondents breakfast . Researchers No differentiate type sex or No limit age respondents in giving honey pineapple juice said , researchers choose respondents sufferers cholesterol that will be made into respondents in study This .

Based on a preliminary study conducted by researchers on July 28, 2025, through observation and interviews with 11 respondents, information was obtained regarding the knowledge and use of pineapple juice to lower cholesterol levels. The results showed that 8 respondents were unaware of the benefits of pineapple juice in lowering cholesterol levels. Meanwhile, 3 respondents were aware of the benefits of pineapple and frequently drank and ate pineapple juice, but had not yet used it regularly to lower cholesterol levels. However, they expressed interest in implementing it.

Based on the background, the author is interested in conducting a study entitled The Effect of Pineapple Juice on Lowering Cholesterol Levels in the Bedali Village Community, RW 11 Lawang Malang. Where the researcher's aim in conducting this study was to determine the effect of pineapple juice on lowering cholesterol levels in the Bedali Village Community, RW 11 Lawang Malang.

RESEARCH METHODS

Study Design

This study used a quantitative method with a pre-experimental one group pretest-posttest design. A pre-experiment is a research plan used to reveal causal relationships by involving researchers in manipulating the independent variable. A one-group pre-post test design uses causality by involving a group of subjects. The group of subjects is observed before the intervention, then again after the intervention.

Population and Sample

The population in this study were all cholesterol sufferers in Bedali Village RW 11 Lawang Malang. The sample in this study amounted to 32 respondents selected using a purposive sampling technique. In sampling the study researchers based on inclusion and exclusion criteria. Where the inclusion criteria used in this study were cholesterol sufferers in Bedali Village RW 11 Lawang Malang (Cholesterol sufferers for adults >200mg/dL and cholesterol sufferers if in children <19 years if >170mg/dL) and willing to be respondents. As well as the exclusion criteria in this study were cholesterol sufferers who have allergies to pineapple, sufferers, consuming other alternative treatments, sufferers who have gastric acid disease (ulcers), and sufferers who are pregnant.

Variables and Instruments

In this study, the independent variable is the administration of pineapple juice, and the dependent variable in this study is uric acid levels. In this study, the instruments used were SOP (Standard Operating Procedure) for Honey Pineapple Juice, Easy Touch GCU, and observation sheets.

Data Collection and Data Analysis Procedures

Researchers conducted this study in September–October 2025. The intervention provided in this study was 250 ml of honey pineapple juice per day (every morning after breakfast) for 7 days. Cholesterol levels were measured before respondents consumed the honey pineapple juice on day 1 and again on day 7 after respondents consumed the honey pineapple juice. Therefore, researchers gave honey pineapple juice to respondents for 7 days.

Data collection was conducted by measuring cholesterol levels before and after the intervention using a digital tool and analyzed using the Wilcoxone test. Descriptive data analysis in this study included age, gender, education, occupation, comorbidities, duration of cholesterol, frequently consumed foods, and cholesterol levels

Etichal Consideration

This study has received an ethical clearance letter No. 01026-KEPKSHJ, dated August 19, 2025. Informed consent was obtained from respondents before data collection, and respondents also signed the consent form. Researchers also adhered to ethical principles such as anonymity, confidentiality, and providing a token of gratitude to respondents for their participation.

RESULT

Table 1 Distribution of Characteristics Respondents, September 2025 (N=32)

Respondent Characteristics	Category	Frequency (n)	Percentage (%)
Age	20-35 Years	3	9.4%
	36-45 Years	8	25%
	46-55 Years	15	46.9%
	56-70 Years	6	18.7%
Gender	Man	5	15.6%
	Woman	27	84.4%
Education	Not Going to School	0	0%

	Elementary School	1	3.1%
	Junior High School	4	12.5%
	Senior High School	26	81.3%
	PT (D3/S1/S2/S3)	1	3.1%
Work	Farmer	2	6.3%
	Self-employed	9	28.1%
	civil servant	1	3.1%
	Housewife/Not Working	20	62.5%
Comorbidities	No Comorbidities	19	59.4%
	Heart disease	0	0%
	Diabetes Mellitus	0	0%
	Hypertension	8	25%
	Cholesterol	5	15.6%
	Kidney failure	0	0%
Long-term Cholesterol Suffering	< 1 Year	7	21.9%
	1-2 Years	16	50%
	3-4 Year	9	28.1%
	>4 Years	0	0%
Food That Frequently Consumed	Chicken Offal	13	40.7%
	Spinach Vegetables	6	18.7%
	Peanuts	5	15.6%
	Soybean Products	8	25%

Source : Primary Data 2025

Table 1 above shows that almost half of the respondents were aged 46-55 years, as many as 15 respondents (46.9%), almost all of the respondents were female, as many as 27 respondents (84.4%), almost all of the respondents had a high school education, as many as 26 respondents (81.3%), most of the respondents had housewife jobs/were not working , as many as 20 respondents (62.5%), most of the respondents did not have comorbidities, as many as 19 respondents (59.4%), half of the respondents had suffered from cholesterol for 1-2 years, as many as 16 respondents (50%), and almost half of the respondents had food that was often consumed such as chicken offal, as many as 13 respondents (40.7%).

Table 2 Analysis of Research Results with the Wilcoxon Test

	Cholesterol Levels								
	Normal (<200)		Tall (200-239)		Very High (>240)		N	**%**	N Asymp. Sign (2-tailed)
	n	%	n	%	n	%			
Pre-Test	2	6.3%	24	75%	6	18.7 %	32	100	.000
Post Test	28	87.5%	3	9.4%	1	3.1%			

Source : Primary Data 2025

Based on table 2 above shows the cholesterol levels of respondents before being given honey pineapple juice, it was found that respondents had high cholesterol levels of 24 respondents (75%) with an average examination result of 200-239 mg / dL and a small portion of respondents had

normal cholesterol levels of 2 respondents (6.3%) with examination results <200mg / dL. And cholesterol levels after being given honey pineapple juice to respondents were found that respondents had normal cholesterol levels of 28 respondents (87.5%) with an average examination result of <200mg / dL and the lowest was very high cholesterol levels of 1 respondent (3.2%) with examination results> 240mg / dL. And the results of the Wilcoxon test on 32 respondents with PreTest-Post Test cholesterol levels obtained an asymp. Sig. (-2 tailed) .000 or P-Value (<0.05) This means that there is an Effect of Giving Pineapple Juice on Reducing Cholesterol Levels in the Bedali Village Community RW 11 Lawang Malang.

DISCUSSION

Cholesterol Levels Before Giving Honey Pineapple Juice Intervention

Cholesterol levels in respondents before given honey pineapple juice obtained that hamper all over from respondents own level cholesterol tall as many as 24 respondents (75%) with results average examination 200-239 mg/dL and some small respondents own level normal cholesterol as many as 2 respondents (6.3%) with results examination <200mg/dL.

In this study, researchers provided complementary therapy through pineapple juice to lower cholesterol levels . Before administering honey pineapple juice to respondents, researchers explained the procedure to be performed and then asked about the respondents' current condition, such as whether they were taking medication/medical therapy, whether they had any complaints, such as drowsiness, tingling, neck or shoulder pain, chest pain, or whether they smoked . complaints from respondents before giving honey pineapple juice on the 1st day for ensure whether respondents currently in condition Healthy or No healthy , and reduce effect side effects suffered respondents after consume pineapple juice, and make sure that respondents currently No consume drug during study This The researchers then measured cholesterol levels using the *Easy Touch GCU Digital device before* administering pineapple juice. level cholesterol done before respondents consume pineapple juice on day 1 and do measurement back on the 7th day after respondents consume pineapple juice for 7 days .

Researchers have an opinion that lack of knowledge and information of respondents about honey pineapple juice For lower level cholesterol , so that reduce respondents For utilizing honey pineapple made into as treatment / therapy complementary For lower cholesterol . Honey Pineapple has Lots very useful content For lower level cholesterol , due to in honey pineapple own Lots compounds contained in honey pineapple and the compounds contained it is very important For prevent absorption of fat and cholesterol , which will later can lower level cholesterol in body . And pineapple can also help guard health bone Because own content manganese , and has anti- inflammatory properties that can reduce pain and inflammation . Due to its anti- inflammatory , anti- dyslipidemic , antioxidant and anti- obesity properties , pineapple can also lower blood fat levels in the blood body (Rasyad et al., 2025).

Habit food everyday that is not healthy , lots consume food fatty and content cholesterol has a big influence to level cholesterol blood someone . Besides that when somebody also not drink medicine and not given non- pharmacological treatment can result in level cholesterol tends to rise, so that need something treatment pharmacology and non- pharmacology to reduce level cholesterol . With study This researchers give knowledge and intervention to public especially those who suffer cholesterol so that utilizing honey pineapple as an alternative to treat level cholesterol and also must guard style life respondents in a way regular and irregular consume forbidden foods with cholesterol . Honey pineapple besides easy got it , it feels like delicious , the price affordable, pineapple is also considered safe Because No contain material chemistry as well as No cause effect side when method its use done in a way appropriate .

Cholesterol Levels After Being Given a Honey Pineapple Juice Intervention

The results of the research after respondents were given honey pineapple juice obtained that almost all of it respondents own level normal cholesterol as many as 28 respondents (87.5%) with results average examination <200mg/dL and a small proportion respondents own level very high cholesterol as many as 1 respondent (3.2%) with results examination >240mg/dL.

Cholesterol is something fatty substances inside body produced by the liver and is very important for body . Cholesterol in excessive blood will result in problem main in the blood vessels blood and brain (Ulantari et al., 2019). Factors that can influence level cholesterol is fat intake and intake

cholesterol . As well as habits consumption total fatty acids and consumption substance cholesterol excessive food can result in improvement level cholesterol in blood (Pratama & Safitri , 2019).

Study This conducted on 32 respondents who suffered from cholesterol . For 7 days researchers give honey pineapple juice as much as 250 ml once a day every Morning after respondents breakfast . Before respondents consume honey pineapple juice on day 1, do measurement level cholesterol in respondents and perform measurement return measurement level cholesterol on the 7th day after respondents consuming honey pineapple juice . During the study This ongoing , researchers ensure respondents currently No consume drug cholesterol regularly . And researchers also ensure the respondents currently No consume therapy other complements such as flax seeds , onions white , ginger, turmeric , tea green , rosemary, decoction leaf leaf soursop , and so on which also have benefit For lower level cholesterol and prohibits respondents For consume food fatty during become respondents in the study This .

After given honey pineapple juice for 7 days obtained results that respondents experience decline level cholesterol reach normal limits, where almost all of it respondents level normal cholesterol, namely as many as 28 respondents (87.5%). This prove there is influence giving pineapple juice to lower level cholesterol in body .

Pineapple contains : compound polyphenols namely flavonoids consist of from myricetin, kaempferol, luteolin, apigenin and quercetin. Myricetin in pineapple can repair lipid profile with method change absorption liver , assembly and secretion triglycerides , and plasma lipoprotein processing (Jumu et al., 2023). Based on results study Moudika et al., (2018) Giving pineapple fruit as much as 142 g/ day for 6 days in succession capable lower level cholesterol with an average decrease of 14.32%. So that can concluded that There is influence giving pineapple fruit against sufferers hypercholesterolemia.

Which need noticed juice pineapple No can consumed in a way excessively in one day because it has the potential to cause side effects on the digestive system. Researchers previously show that consumption juice pineapple Excessive intake can worsen gastrointestinal symptoms such as nausea, diarrhea, and heartburn, especially in individuals with sensitivity sour or stomach disorders. This is emphasized in medical review by (Chakraborty et.al 2023) which reported that juice pineapple excessive make things worse symptom GERD And can trigger other digestive complaints. Furthermore, a study by (Han et al., 2024) found that excessive consumption of processed fruit drinks, including pineapple juice, is associated with the risk of blood sugar spikes, obesity, and metabolic disorders. Therefore, pineapple juice consumption should be limited to prevent the intended benefits from turning into adverse effects.

Research by Utina et al (2023) states that pineapple juice is not recommended for all patient groups because there are several specific conditions that can actually cause adverse effects. In patients with gastric acid disease or gastritis, the highly acidic nature of pineapple juice can cause irritation to the gastric mucosa, it is not recommended to consume pineapple juice. Because the acidity of pineapple juice can potentially worsen complaints of heartburn, nausea, vomiting, and acid reflux. And several previous studies have confirmed that consumption of fresh pineapple or pineapple juice by pregnant women should be limited so as not to cause harmful effects to the fetus , so it must be based on inclusion criteria and exclusion criteria in providing pineapple juice interventions in a study (Utina et al., 2023) and there is also an opinion that consuming pineapple is effective in reducing swelling, bruising, and pain in women who experience tears in the perineum (Golezar, S. 2016).

According to researchers, these results prove that honey pineapple juice can be an effective alternative non-pharmacological intervention. in lowering cholesterol levels. The success of this intervention was also supported by the ease of access to the ingredients, the respondents' preferred taste, and the minimal side effects. Honey pineapple juice not only works physiologically but also provides a psychological approach through a pleasant consumption experience. Which can increase compliance intervention. By Because Therefore, this therapy is worthy of being recommended for widespread use in the management of hyperuricemia in the community, especially if accompanied by with education about healthy lifestyles.

The limitations in this study are the limited number of samples in Bedali Village RW 11 Lawang - Malang, so it cannot represent all cholesterol sufferers in Malang City, and researchers cannot monitor for 24 hours regarding the respondents' eating patterns and activities and if respondents have not had breakfast in the morning, researchers wait for respondents to have breakfast first before giving this honey pineapple juice.

CONCLUSION

This study shows that administering honey pineapple juice is effective or has a positive impact on lowering cholesterol levels in cholesterol sufferers in Bedali Village, RW 11, Lawang, Malang, but is not superior to simvastatin or a combination of both. Suggestions for future researchers include increasing the sample size to ensure a representative sample, allowing pineapple juice to be administered at any time, and conducting research on factors influencing the success of non-pharmacological therapy in respondents with cholesterol.

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