



## The Effect of Giving Bay Leaves Boiled Water on Gout in Elderly Women in Bpm Hj.Dermawati Medan

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### ABSTRACT

Uric acid levels increased or above normal limits can cause the risk of hemodynamic disorders such as cardiovascular disease and the risk of metabolic disorders such as kidney dysfunction. Joints that are often attacked by gout are the thumb joint, ankle joint, wrist, knee and others. According to the World Health Organization (WHO) in 2022 Gout arthritis in every country in the world must have the opportunity to live a long and healthy life, the environment is very influential on our behavior and our exposure to health risks. The purpose of this study was to determine whether there was an effect of bay leaf boiled water on gout in elderly women. The design used is Quasi experimental design (pseudo experimental design) with one group pretest posttest design in this study will be carried out initial observations on the frequency of gout before being given bay leaf decoction drinks and after being given bay leaf decoction. The population in this study was 25 elderly women who experienced gout in BPM Hj. Dermawati. Purposive sampling with a sample of 10 people. The tool used for data collection is an observation sheet, with a research time of September 2023. This study shows the results of the Shapiro Wilk normality which means there is no effect of bay leaf boiled water drink on reducing uric acid in elderly women in BPM Hj. Dermawati Medan. The conclusion of this study is the influence of the Effect of Giving Bay Leaf Boiled Water.

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### 1. Introduction

Gout or commonly called gouty arthritis is a disease that can attack the joints. Gout is no longer a rare disease even most Indonesians experience gout (gouty arthritis) (Junaidi, 2021). Gout mostly occurs in the elderly (elderly) both women and men. Most people think that gout is not dangerous, but if left unchecked, gout can attack kidney dysfunction and can even cause arthritis. Most joints are attacked by gout such as toes, ankles, knees, and most often repetitive big toes resulting in permanent joint damage and disability (Yanita, 2022). The cause of gout is due to eating foods that are high in purines. Figs to prevent gout by getting used to a healthy life and regular exercise. (Savitri, 2017)

Based on research conducted by Sari, N, et al. that Gout arthritis or what can be called gout is one of the diseases that attack the joints characterized by the buildup of Monosodium Urate Monohydrate (MSU) in Synvial tissue or in other tissues. Normal uric acid levels in adult males range from 3.4 to 7.0 mg / dl, in adult women 2.4 - 5.7 mg / dl. If uric acid levels are elevated or above normal limits, it can cause the risk of hemodynamic abnormalities such as cardiovascular disease and the risk of

metabolic disorders such as kidney dysfunction. Joints that are often attacked by gout are the thumb joint, ankle joint, wrist, knee and others (Sari et al., 2022). The treatment of gout with bay leaves was also carried out by Patyawargana, pandu, et al. that the high incidence of gout in the community caused a fairly serious impact so that through research carried out using ingredients that were quite easy and cheap to get, namely bay leaves by boiling them 5-7 sheets and boiling them to 100cc was given 2 times a day for 7 days and the results showed that there was an increase in uric acid levels after consuming boiled water bay leaves, this has been proven to have a significant influence (Patyawargana & Falah, 2021).

Handling done to prevent an increase in uric acid in the blood, namely diet regulation, avoiding foods high in purines, consumption of adequate vitamins and minerals, exercise routine and stop smoking, for the treatment of gout can also be given drugs for pharmacological therapy. (Joewono Soeroso et al., 2014) In addition, gout can also be treated with herbal plants such as bay leaf decoction which is efficacious in overcoming arthritis gout bay leaves contain flavonoids that function to reduce uric acid levels (Anisa, 2022).

According to the World Health Organization (WHO) in 2022 Gout arthritis in every country in the world must have the opportunity to live a long and healthy life, the environment is very influential on our behavior and our exposure to health risks (for example, air pollution or violence), the proportion of people aged 60 years and over in the population is increasing. In 2019, the total population aged 60 years and above was 1 billion. This number will increase to 1.4 billion by 2030 and 2.1 billion by 2050. This increase is occurring at an unprecedented pace and will accelerate in the coming decades, especially in developing countries. Based on the results of the 2018 East Java Basic Health Research, the proportion of elderly dependence rates aged >60 years based on joint diseases at the level of independent dependence (67.51%) (Azhar, 2023).

Residents of North Sumatra, where purine intake is very influential on the increase in uric acid levels in the blood. Uric acid is the final metabolic result of purines, which is one of the nucleic acid components found in the body's cell nucleus. The increased prevalence of gout is associated with sex risk factors, high intake of purines, alcohol, obesity, hypertension, and diabetes mellitus. In addition, the incidence of gout is associated with impaired kidney function and genetic factors (Utara, 2017). The latest data on the prevalence of gout disease in Indonesia based on Basic Health Research data in 2018 shows that the prevalence of joint disease in Gorontalo is 16th out of 34 provinces and based on the diagnosis of age 45-54 years reaches 11.1%, age 55-64 years reaches 55.5%, and age 65-74 years reaches 18.6% with the highest total number dominated by women at 8.5% compared to men at 6.1%. This can be seen from the number of gout sufferers and the most are from the age of 45 to 74 years with the pre-elderly category and the elderly have excessive levels of uric acid. In 2017, the Gorontalo Provincial Health Office found that the most data included in the 10 most disease categories, namely arthritis with the third place after hypertension, a total of 14,391 residents of Gorontalo Province suffered from gout arthritis (Lasido et al., 2023)

The results of the highest joint disease prevalence health profile in North Sumatra Province are West Nias Regency (66.9%), Nias (54.2%) and Central Tapanuli (52.6%). The prevalence of joint disease increases with age. Uric acid levels in the human body are determined by the balance of production and excretion, uric acid production is influenced by diet and internal body processes such as biosynthesis, degradation and formation of uric acid reserves. Under normal conditions, the human body already contains uric acid in certain levels. If uric acid production increases and its excretion through the kidneys in the form of urine decreases, it can cause hyperuricemia (Pasaribu, 2021).

Gout arthritis ranges from 1-4% worldwide. The incidence of gout ranges from 0.1-0.3% where purine intake is very influential on increasing uric acid in human body cells, the highest prevalence of gout in Indonesia is in Aceh, which is 13.26%, after observation of the cause of gout due to frequent consumption of foods high in purines. Such as: shellfish, beef, goat. No wonder the people of Aceh often consume shellfish food because Acehnese people live on the coast so that the food that is easily obtained is shellfish (Israwati et al., 2023).

High uric acid or hyperuricemia is a condition in which the level of uric acid in a person's blood is above a level that is considered normal. Uric acid is a compound produced by the breakdown of purines in the body and is usually excreted through the kidneys. When deep uric acid levels exceed a certain limit, a health problem called high uric acid can occur. High uric acid is not only a problem of joint pain, but it can also have a serious impact on overall health such as joint damage, kidney stones, diabetes, kidney failure, tophi, sleep disorders and mental health so that for a long time, bay leaf plants in Indonesia have been known as medicinal plants. Having a myriad of benefits where bay leaves contain triterpene compounds, paphenols, alkaloids, steroids, essential oils with citric oil and eugenol content that are anti-bacterial, tannins have the ability to reduce the absorption and neutralize free radicals and peroxide decomposition. Flavonoids can inhibit xanthinoxidase enzymes that inhibit the formation of uric acid as well as anti-inflammatory. Gout is also called the "disease of kings" where this disease is associated with the habit of consuming delicious food and drinks (Megawati & Arsyad, 2021). Uric acid is the result of metabolism in the body, whose levels should not be excessive. The main cause is high levels of uric acid in the blood which can be triggered by various factors. Severe pain in the joints that is felt repeatedly is very disturbing to the sufferer. If not treated immediately, it can cause bone deformities and complications of kidney, heart, diabetes mellitus, stroke, and osteoporosis (Lingga, 2012).

The initial survey conducted by researchers in May found 123 elderly people who sought treatment at BPM Hj. Dermawati and who experienced gout, 30 elderly 5 of them elderly (elderly) aged 60-74 years and 25 elderly women who had different ages, 16 people experienced gout with elderly (elderly) 60-74 years and 9 people who experienced gout with old age (old) 75-90 years after observation of the cause The occurrence of gout is that the mother says she often eats foods that can trigger gout. Such as: beef, goat, offal, meat sauce that is too thick, sardines and shellfish. The results of observations were obtained by the elderly at BPM Hj. Dermawati did not do physical exercise such as exercise. The examination has used an Easy touch gcu meter device to determine high levels of uric acid in the blood. Based on the description above, researchers are interested in conducting research with the title " Influence Giving Bay Leaf Boiled Water against Uric Acid in Elderly Women at BPM Hj. Dermawati Tembung Medan in 2023".

## 2. Research Methods

The design used is Quasi experimental design (pseudo experimental design) with one group pretest posttest design in this study will be carried out initial observations on the frequency of gout before being given bay leaf decoction drinks and after being given bay leaf decoction. Then after being given action, the experimental group will be given a test in the form of a post test. Then my research has a key indicator of research success with the help of local health workers who are already familiar with them and collected resource persons who are more than 30 years old with gout. Previously explained how to serve and consume it for 5 days with 5-7 bay leaves and boiled 300ml until it shrinks to 100ml to be drunk in the morning and at night. This is also ensured with an assistant from the researcher for the resource person to consume the boiled water correctly so that the blood results can be greatly reduced.

The population in this study was 30 elderly people, 5 of whom were elderly men and 25 of them elderly women who experienced gout at BPM Hj. Dermawati. The technique taken to determine the sample is purposive sampling based on a certain consideration made by the researcher himself by identifying all characteristics of the population. Samples in this study, researchers took the number of samples of elderly women 10 people who were experiencing gout.

## 3. Analysis and Results

Research that has been conducted at BPM Hj.Dermawati Medan on the Effect of Bay Leaf Boiled Water on Uric Acid in Elderly Women can be seen in the table below:

Table 1  
Before Giving Bay Leaves Against Uric Acid in Elderly Women at BPM Hj. Dermawati Medan

No	Pretest	F	%
1	2,4-5,7 mg/dl (normal)	0	00,0
2	>5,7 mg/dl (abnormal)	10	10,0
Total		10	100%

Based on the above, it shows that giving bay leaves before being given bay leaf cooking water has abnormal uric acid levels as many as 10 people (100%) and normal as many as 0 people (0%).

Table 2  
After giving bay leaf against gout in elderly women BPM Hj.Dermawati Medan

No	Post test	F	%
1	2,4-5,7 mg/dl (normal)	4	40,0
2	>5,7 mg/dl (abnormal)	6	60,0
Total		10	100%

Based on the table above, it shows that giving bay leaves after being given bay leaf cooking water has normal uric acid levels as many as 4 people (40%) and abnormal as many as 6 people (60%).

Table 3  
Test Data Normality Test

Variabel	Group	Shapiro-Wilk		
		Statistic	df	Sig.
Uric Acid Levels	Pre_test	0,640	10	0,00
	Post_test	0,640	10	0,00

Based on the table above shows that the sig value of the shapiro wilk test results at pre-test uric acid levels is 0.00 (<0.05) and at post-test uric acid levels is 0.00 (< 0.05), it can be concluded that the data is not normally distributed, so researchers use the Wilcoxon test.

Table 4  
Wilcoxon Test Results The Effect of Bay Leaf Cooking Water on Uric Acid in Elderly Women at BPM Hj.Dermawati Medan

	Pre - posttest
Z	- 2,000 <sup>a</sup>
Asymp Sign (2-tailed)	0,046

Based on the table above from the paired t-test results, it was found that the p-value was 0.046 which statistically > 0.05, so it can be concluded that there is no Effect of Bay Leaf Boiled Water on Uric Acid in Elderly Women at BPM Hj.Dermawati Medan ( $H_a$  rejected and  $H_o$  accepted).

The results of this study are in line with premukti, dian setianingrum entitled "giving bay leaf boiled water *Syzygium polyanthum* to reduce uric acid levels in gout sufferers". The results showed that the sig value was  $0.001 < 0.05$ . This means that there is an effect of bay leaf decoction on reducing uric acid levels. Another study conducted by Widiyono, et al with the title "The effect of herbal therapy decoction of leaves on reducing uric acid levels: a literatul review". The results showed that in conclusion there was an effect of bay leaf cooking water on reducing uric acid levels (Setianingrum et al., 2019).

As we age, every human being will experience an aging process. Followed by changes in body shape in the form of decreased muscle mass and bone mass Decreased muscle mass and muscle strength in elderly individuals become addictive problems with high prevalence, the aging process is not

a disease. However, the aging process experienced by individuals will further increase the risk of individuals experiencing a disease (Agnasari, 2022). A gradual decrease in volume size with age, accompanied by replacement by fatty and connective tissue. Advancing age is generally associated with a decrease in cell regeneration capacity resulting in increased mortality in individuals. The body's resistance to external stimuli will also decrease so that it will progressively lose the body's resistance to infection and a buildup of metabolic and structural distortions called degenerative diseases. Some types of degenerative diseases that will be experienced by the elderly include hypertension, diabetes mellitus, gout, stroke (Setyaningsih et al., 2020).

Uric acid is a compound that is difficult to dissolve in water. Normally, uric acid will dissolve back in the blood and be filtered by the kidneys. Gout is characterized by the presence of symptoms of joint pain. But not all joint pain is gout, gout is the result of purine metabolism (Meirita, 2022). Purines are a group of chemical structures that make up DNA. Uric acid is a crystalline acid that is the end product of purine metabolism. Scientifically purines are found in the body of every human being and in all foods from living cells in the form of plants such as vegetables, fruits, nuts and animals such as meat, offal, sardines. Excessive uric acid can cause: kidney disorders, coronary heart disease, diabetes mellitus and arthritis.

This study is also in line with the research of Asih, Susi Wahyuning who has concluded that bay leaf boiled water has an influence in reducing systolic pressure in the elderly but has no effect on reducing diastolic pressure in the elderly. It is illustrated that the closure of the aortic valve, the amount of energy in the elastic fibers of the large arteries during systolic and the resistance of blood flow from the arteries to the capillaries regulate blood flow during relaxation conditions (Asih, 2018).

As with Dafriani's research, Putri concluded that bay leaves can be used as an alternative to drugs in the management of hypertension in the community because it can lower blood pressure. Blood pressure that decreases, also accompanied by a decrease in workload on the organs of the body, thus the heart and other organs can work normally carrying out metabolic activities to reduce the risk of complications due to persistent hypertension (Dafriani, 2021).

Research conducted by Ndede V.Z.L.P, etc. found that by consuming bay leaf decoction regularly and in accordance with the recommended dose of 200 ml taken in a day can reduce hypertension because of the work of flavonoids that inhibit the performance of the enzyme xanthine oxidase for the formation of uric acid (Ndede et al., 2019). In the research of Saputri, aqila, et al in The Effect of Combination Bay Leaf Stew and Ginger on Uric Acid Level obtained the results of The combination of steamed bay leaves and ginger has a significant effect on reducing uric acid levels in the elderly in Wanasari Village, Kp.Utan, Cibitung District, Bekasi Regency in September 2022 (Saputri & Fauzi, 2023).

According to the researchers' assumption, giving bay leaf boiled water can reduce uric acid levels because the content of bay leaves is flavonoids, vitamin content, tannins, oil. Bay leaf can also treat cholesterol, diabetes mellitus, hypertension, gastritis, and diarrhea. The flavonoid content contained in bay leaves can be used as a diuretic (decay agent) and pain reliever (analgetic). The benefits of flavonoids as diuretics so as to increase urine production. Flavonoids are also anti-inflammatory so that they can prevent inflammation in the bones. This can be seen from before giving bay leaf boiled water to 10 elderly women it was found that uric acid levels were abnormal or the average uric acid level was 6.9 mg / dl with the highest-lowest value of uric acid levels 8.1-5.9 mg / dl. However, after being given bay leaf water decoction for 7 days, there was a decrease in average uric acid levels of 4.67 mg / dl with the highest - lowest value of uric acid levels of 6.1-2.8 mg / dl. The data shows that by giving bay leaf decoction can reduce uric acid levels but must maintain foods that can increase purine levels such as liver, lung innards and so on.

#### 4. Conclusion

The conclusion in the study on the Effect of Giving Bay Leaf Boiled Water on Uric Acid in Elderly Women at BPM Hj.Dermawati Medan can be concluded as follows: Based on the shapiro-wilk normality test, a sig value of 0.00 (<0.05) was obtained. The results of the Wilcoxon test showed that the p-value

was 0.046 which statistically  $<0.05$ , which means there is no Effect of Bay Leaf Boiled Water on Uric Acid in Elderly Women at BPM Hj.Dermawati Medan.

The research I conducted was used as an important source of additional information for all people in the clinic environment. That bay leaves, which are very easy to get and obtain at a low price, turn out to have very good properties for health, especially can reduce uric acid levels in a person's blood. So that the people there can reduce the consumption of drugs for the elderly who are afraid to take medicine but suffer from gout. Until now, there has been no community program that supports the use of bay leaves for Lowering uric acid levels, but with the development of these results, the production of treatment in an easy and cheap way can be used by the community well as the key to health that must be maintained. The elderly who do not dare or even do not want to consume medicine for bitter reasons and so on, then by consuming bay leaf boiled water as a substitute for medicine that can be used by the community to maintain their kidney health.

In the implementation of this research, I was assisted by a research assistant to really ensure that the resource person consumed 100ml of bay leaf water decoction for morning and evening. There are some speakers who forget to drink in the morning so we recommend it during the day and at night. This makes the lack of efficacy of the bay leaf boiled water. So for the next researcher, the elderly can do documentation when and after drinking bay leaf boiled water in the morning and evening with the help of the children or grandchildren of the elderly resource person to really ensure that they consume it on time.

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