

**Comparison Stew Bay Leaf (*Syzygium Polyanthus*) With Stew Cinnamon  
(*Cinnamomun Burmese*) To Decrease Scale Painful on Sufferer  
Arthritis Gout in The Workplace Health Center  
Baiturrahman City of Banda Aceh**

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**ABSTRAK**

*Gout Arthritis adalah gangguan metabolik yang terjadi akibat penumpukan monosodium urat dalam persendian yang ditandai dengan meningkatnya kadar asam urat melebihi 7,0 mg/dl pada pria dan 6,0 mg/dl pada wanita. Tujuan Penelitian Mengetahui Perbandingan Rebusan Daun Salam Dengan Rebusan Kayu Manis Terhadap Penurunan Skala Nyeri Pada Penderita Arthritis Gout Di Puskesmas Baiturrahman Kota Banda Aceh. Penelitian ini menggunakan metode Quasy Experiment dengan pendekatan Pre Test Post Test and Between Two Group. Sampel dalam penelitian ini menggunakan Teknik purposive sampling yaitu pengambilan sampel berdasarkan kriteria yang telah ditentukan dengan jumlah sampel yaitu 24 penderita Gout Arthritis yang terdiri dari 12 responden yang diberikan rebusan kayu manis dan 12 responden diberikan rebusan daun salam. Hasil penelitian Terdapat Pengaruh Rebusan Daun Salam Terhadap Penurunan Skala Nyeri Pada Penderita Arthritis Gout Di Wilayah Kerja Puskesmas Baiturrahman Kota Banda Aceh dengan nilai  $p = 0,000$ , Terdapat Pengaruh Rebusan Kayu Manis Terhadap Penurunan Skala Nyeri Pada Penderita Arthritis Gout Di Wilayah Kerja Puskesmas Baiturrahman Kota Banda Aceh dengan nilai  $p = 0,000$  dan Tidak Terdapat Perbedaan Rebusan Daun Salam Dan Rebusan Kayu Manis Terhadap Penurunan Skala Nyeri Pada Penderita Arthritis Gout Di Wilayah Kerja Puskesmas Baiturrahman Kota Banda Aceh dengan nilai  $p = 0,196$ .*

**ABSTRACT**

*Gout Arthritis is a metabolic disorder that occurs due to the accumulation of monosodium urate in the joints which is characterized by increased uric acid levels exceeding 7.0 mg /dl in men and 6.0 mg/dl in women. Research Objective To determine the Comparison of Bay Leaf Decoction with Cinnamon Decoction on Reducing the Pain Scale in Gout Arthritis Patients At Baiturrahman Health Center, Banda Aceh City. This study used the Quasy Experiment method with the Pre Test Post Test and Between Two Group approach . The sample in this study used the purposive sampling technique , namely sampling based on predetermined criteria with a sample size of 24 Gout Arthritis sufferers consisting of 12 respondents who were given cinnamon decoction and 12 respondents who were given bay leaf decoction. The results of the study There are The Effect of Bay Leaf Decoction on Reducing Pain Scale in Gout Arthritis Patients in the Work Area of Baiturrahman Health Center, Banda Aceh City with a  $p$  value = 0.000 , there is an effect of cinnamon decoction on reducing the pain scale in gout arthritis sufferers in the Baiturrahman Health Center Work Area, Banda Aceh City. with a  $p$*

*value = 0.000 and there is no difference between boiled bay leaves and boiled cinnamon on reducing the pain scale in gout arthritis sufferers in the Baiturrahman Health Center Work Area, Banda Aceh City with a p value = 0.196.*

## INTRODUCTION

Gout Arthritis is a metabolic disorder that occurs due to the accumulation of monosodium urate in the joints which is characterized by an increase in uric acid levels exceeding 7.0 mg /dl in men and 6.0 mg/dl in women. Continuous accumulation due to high uric acid levels causes crystallization in the joints, joint area. This is what causes stiffness so that the limbs are difficult to move (Ansyarullah et al., 2020) . Gout is Wrong One degenerative diseases that are common develop And have long duration. Gout often found on sufferer age carry on with complaint like a burning sensation on the skin, stiffness And painful joints, swollen until annoying tingling sensation activity (Mardillah et al., 2023) .

The prevalence of gout arthritis in Indonesia in 2018 was around 11.9% with Aceh in first place at 18.3%, followed by West Java at 17.5%, and Papua at 15.4%. In 2021, the number of gout arthritis sufferers in Aceh was recorded at 2,637 people. Based on data from the Aceh Health Office (2022), gout arthritis sufferers in Banda Aceh City reached 398 people and based on Data obtained from the Baiturrahman Health Center showed that there were 107 elderly people aged > 65 years with gout arthritis, with the Baiturrahman Health Center being one of the health centers with the most cases of gout arthritis (Nasari et al., 2022) .

Treatment for Gout Arthritis is focused on how to control pain. Gout management includes pharmacological and non-pharmacological therapy. Pharmacological therapy can be in the form of administering drugs to lower acid levels. gout such as nonsteroidal anti-inflammatory drugs (NSAIDs) *Allopurinol*, *Corticosteroids*, and *Colchicine*. Non-pharmacological management to overcome gout pain can be in the form of giving boiled leaves greetings

and cinnamon decoction (Mardillah et al., 2023) .

Bay leaf ( *Syzyum Polyanthum* ) is one of the plants that are widely found in Indonesia. Bay leaves can be used as herbal medicine because they have benefits for body health. The content of ethanol extract found in bay leaves can reduce uric acid levels in the blood which is supported by the presence of flavonoid compounds that act as anti-inflammatory (Khotima & Lasmadasari, 2021) .

Cinnamon ( *Cinnamomum Burmani* ) is a spice plant that can be used as a medicine to treat gout pain. Cinnamon contains active compounds such as eugenol, cinnamaldehyde, phenol, tannin, and calcium oxalate. In addition, cinnamon also contains essential oils (1-4%). Essential oils function as anti-rheumatic and anti-inflammatory by vasodilating blood vessels so that blood flow to the painful area will increase and reduce pain (Fenia et al., 2022) .

Based on studies introduction by researchers do it at the Health Center Baiturrahman, Banda Aceh City, shows there are 10 villages included in region Work health center There are 412 sufferers of *Arthritis Gout*, the highest in five villages, namely Kampung Baru Village with 57 sufferers, Suka Ramai Village with 56 sufferers, Seutui Village with 53 sufferers, Neusu Aceh Village with 52 sufferers, and Neusu Jaya Village with 43 sufferers.

Results initial survey interviews conducted 4 out of 7 respondents suffered from *Arthritis Gout* while 3 other people did not suffer from *Arthritis Gout*. Respondents who suffered from sour tendon often sigh painful. The pain felt often attacks joint areas such as the knees, heels and hands. The usual treatment for *Arthritis Gout sufferers* is consuming drugs to relieve pain. In addition, sufferers also avoid foods that can cause gout such as offal, red meat and nuts.

**LITERATURE REVIEW**

Based on research conducted by Praise And The Greatest on 2021 with title “Effectiveness Giving Stew Bay Leaves In Reduce Pain On Gout Arthritis Patients” shows results that before done intervention giving stew leaf regards pain scale score 6 (moderate pain). After the intervention of giving bay leaf decoction for 7 days, the results obtained were a decrease in the pain scale score of 4 (moderate pain) with an average decrease in the pain scale of 0.28, which means that there is an effect of bay leaf decoction on reducing the pain scale of *Gout Arthritis* .

Research conducted by Fenia et al in 2022 with the title "Warm Cinnamon Compress Reduces Pain in Gout Arthritis Patients in the Kedungmundu Semarang Health Center Area" The results of the study showed that before being given a warm cinnamon compress, the pain scale was moderate with an average score of 4 (moderate), after giving a warm cinnamon compress for 2 days there was a decrease in the pain scale with an average score of 3 (mild). There is an effect of giving a warm cinnamon compress on reducing the pain scale of *Gout Arthritis sufferers* (Hidayatullah & Rejeki, 2022) .

**METHODS**

This type of research is quantitative research using the Quasy Experiment research method (quasi-experimental research). The approach model used in this study is *two group pretest-posttest without control group* . This study consists of 3 stages, namely the pain identification stage in *Arthritis Gout patients* before intervention using *the Numeric Rating Scale* , the intervention stage (administration of boiled bay leaves and boiled cinnamon), and the evaluation stage after intervention using *the Numeric Rating Scale* . Retrieval sample use *purposive sampling* with 12 people for the bay leaf boil treatment in Suka Ramai village and 12 people for the cinnamon boil treatment in Seutui village. Technique Data collection uses instruments that include sheet

agreement become respondents, standards operational procedures (SOP), and sheet observation. The data collection process was carried out by giving boiled bay leaves and cinnamon decoction to respondents to drink 100 ml once a day in the morning and given for 3 days.

**RESULTS**

**Respondent Demographic Data**

**Table 1**  
**Frequency Distribution of Demographic Data on Gout Arthritis Patients in the Bay Leaf Group in the Baiturrahman Health Center Work Area Banda Aceh City (n=12)**

No	Type	Category	Frequency (f)	Percentage (%)
1	Age	Early Adulthood (26-35)	2	16.7
		Late Adulthood (36-45)	6	50.0
		Early Elderly (46-55)	1	8.3
		Late Elderly (56-65)	3	25.0
2	Gender	Man	0	0.0
		Woman	12	100.0
3	Education	PT	1	8.3
		Intermediate	7	58.4
		Junior High School	4	33.3
4	Work	Work	2	16.7
		Doesn't work	10	83.3
5	History of Gout	1-12 Months	2	16.7
		1-5 Years	8	66.7
		> 5 Years	2	16.7
Total			12	100.0

Source: Primary Data (Processed in 2024)

Based on Table 1 looks at the highest age (Late Adult 36-45) with a total of 6 (50.0%). Then the highest gender is female with the number 12 (100%), which means the data is homogeneous or similar. The highest level of education was secondary with 7 (58.4%). Of the jobs, the highest number was non-working with 7 (83.3%). and the history of gout was found at 1-5 years with a total of 8 (66.7%).

**Table 2**  
**Frequency Distribution of Demographic Data on Gout Arthritis Patients in the Cinnamon Group in the Baiturrahman Health Center Work Area Banda Aceh City (n=12)**

No	Type	Category	Frequency (f)	Percentage (%)
1	Age	Late Adulthood (36-45)	1	8.3
			5	41.7
		Early Elderly (46-55)	6	50.0
		Late Elderly (56-65)		
2	Gender	Man	0	0.0
		Woman	12	100.0
3	Education	Intermediate	8	66.7
		Junior High School	4	33.3
4	Work	Work	6	50.0
		Doesn't work	6	50.0
5	History of Gout	1-12 Months	6	50.0
		1-5 Years > 5 Years	5	41.6
			1	8.3
Total			12	100.0

Source: Primary Data (Processed in 2024)

Based on the results of the study in table 4.2, seen from the highest age, there are those aged (Late Elderly 56-65) with a total of 6 (50.0%). Then the highest gender is female with a total of 12 (100%) which means that the data is homogeneous or similar. From the highest education, there are those in the middle with a total of 8 (66.7%). From the highest occupation, there are those in the same with a total of 6 (50.0%) working and 6 (50.0) not working. And from the history of gout, there are those in 1-12 months with a total of 6 (50.0%).

**Univariate Data**

- Group intervention Stew Bay leaf

**Table 3**  
**Frequency Distribution of Pretest and Posttest of Bay Leaf Decoction**

No	Pain Scale	Frequency (f)	Percentage (%)
<i>Pretest</i>			
1	Light	3	25.0
2	Currently	9	75.0
3	Heavy	0	0.0
Amount		12	100.0
<i>Posttest</i>			
1	Light	8	66.7
2	Currently	4	33.3
3	Heavy	0	0.0
Amount		12	100.0

Source: Primary Data (Processed in 2024)

Based on the research results in Table 3, it was found that the highest distribution of pain scales before the bay leaf decoction intervention was given. was in the moderate category as many as 9 (75.0%) respondents. Then after being given an intervention, the highest pain scale in Gout Arthritis sufferers was on a mild scale as many as 8 people (66.7%).

- Group intervention Stew Cinnamon

No	Pain Scale	Frequency (f)	Percentage (%)
<i>Pretest</i>			
1	Light	4	33.3
2	Currently	8	66.7
3	Heavy	0	0.0
Amount		12	100.0
<i>Posttest</i>			
1	No Pain	2	16.7
2	Light	10	83.3
3	Currently	0	0.0
4	Heavy	0	0.0
Amount		12	100.0

Source: Primary Data (Processed in 2024)

**Bivariate Data**

- Group Intervention Stew Bay leaf

**Table 5. Paired Test of Bay Leaf Decoction Group**

Variables	Mean	Mean Difference	SD	S.E.	p value
Pre Test Pain Scale	4.666	1,833	1,370	0.207	0.000
Post Test Pain Scale	2,833		1,267		

Source: Primary Data (Processed in 2024)

Based on table 5, the difference in the average value of the *Pre-Test* pain scale assessment of the bay leaf decoction group and the *Post-Test* is 1.833. The dependent *T-test results* obtained a *p value* of 0.000 ( $\leq 0.05$ ). Thus, it can be concluded that  $H_a$  is accepted, which means that there is an Effect of Bay Leaf Decoction on Reducing the Pain Scale in Arthritis Gout Patients in the Baiturrahman Health Center Work Area, Banda Aceh City.

- Group Intervention Stew Cinnamon

**Table 6. Cinnamon Decoction Group Paired Test**

Variables	Mean	Mean Difference	SD	S.E.	p value
Pre Test Pain Scale	4.166	3.166	1,527	0.365	0.000
Post Test Pain Scale	1,000		0.953		

Source: Primary Data (Processed in 2024)

Based on table 6, the difference in the average value of the *Pre-Test* pain scale assessment of the cinnamon decoction group and the *Post-Test* is 3.166. The results of the dependent *T-test* obtained a *p value* of 0.000 ( $\leq 0.05$ ). Thus, it can be concluded that  $H_a$  is accepted, which means that there is an Effect of Cinnamon Decoction on Reducing the Pain Scale in Arthritis Gout Patients in the Baiturrahman Health Center Work Area, Banda Aceh City.

- Comparison of Bay Leaf Decoction and Cinnamon Decoction

**Table 7. Difference Between Bay Leaf**

Decoction and Cinnamon Decoction				
Variables	N	Mean	Mean Difference	p value
Cinnamon Stew Group	12	1,000	1,782	0.196
Bay Leaf Decoction Group	12	2,833		

Source: Primary Data (Processed in 2024)

Based on Table 7, the mean difference is 1,782 with a *p value* of  $0.196 > 0.05$ .  $H_0$  is rejected, meaning that there is no difference between boiled bay leaves and boiled cinnamon on reducing the pain scale in *gout arthritis* sufferers in the Baiturrahman Health Center Work Area, Banda Aceh City.

## DISCUSSION

### 1. The Effect of Bay Leaf Decoction on Reducing Pain Scale in *Gout Arthritis Patients*

In the bay leaf decoction group, when *the Pre-Test was conducted*, the average pain scale assessment was 4.666 with a minimum of 3.0 and a maximum of 6.0 and a standard deviation of 3.956. While when *the Post-Test was conducted*, the average pain scale assessment was 3.833 with a minimum of 1.0 and a maximum of 3.0 and a standard deviation of 3.584.

Based on the results of *the Paired Test*, the difference in the average value of the *Pre-Test* pain scale assessment of the bay leaf decoction group and *the Post-Test* was 1.833. The results of the dependent *T-test* obtained a *p value* of  $0.000 (\leq 0.05)$ . Thus, it can be concluded that  $H_a$  is accepted, which means that there is an Effect of Bay Leaf Decoction on Reducing the Pain Scale in *Arthritis Gout Patients* In the Working Area of Baiturrahman Health Center, Banda Aceh City.

The properties contained in bay leaves have several compounds such as essential oils, tannins, and *flavonoids* which are abundant in the leaves (Alhasny & Supriadi, 2021). The content in bay leaves can reduce uric acid levels by inhibiting the work of the xanthine oxidase enzyme so that it can inhibit the formation of uric acid (Suryagustina, Prinawatie, 2022).

Researchers assume that giving boiled bay leaves has an effect on reducing pain levels in *gout arthritis* patients. The results of this study are in accordance with the theory that all compounds contained in bay leaves work together so that joint pain in *gout arthritis* sufferers can be reduced along with decreasing uric acid levels in the blood, because the pain felt (Nugroho et al., 2022).

### 2. The Effect of Cinnamon Boil on Reducing Pain Scale in *Gout Arthritis Patients*

In the cinnamon decoction group when *the Pre Test was conducted*, the average pain scale assessment was 4.166 with a minimum of 3.0 and a maximum of 6.0 and a standard deviation of 4.409. While when *the Post Test was conducted*, the average pain scale assessment was 1.000 with a minimum of 1.0 and a maximum of 3.0 and a standard deviation of 2.752.

Based on the results of *the Paired Test*, the difference in the average value of the *Pre-Test* pain scale assessment of the cinnamon decoction group and *the Post-Test* was 3.166. The results of the dependent *T-test* obtained a *p value* of  $0.000 (\leq 0.05)$ . Thus, it can be concluded that  $H_a$  is accepted, which means that there is an Effect of Cinnamon Decoction on Reducing the Pain Scale in *Arthritis Gout Patients* in the Work Area of the Baiturrahman Health Center, Banda Aceh City.

Cinnamon has properties to relieve pain, the active compound found in the cinnamon bark is essential oil which can reduce pain. The bark of the cinnamon tree contains a lot of cinnamaldehyde compounds or cinnamaldehyde by 60.72%. This compound is the main component of essential oils and causes an analgesic effect. Essential oils are also composed of eugenol compounds which play a role in providing a calming sensation so that *gout arthritis* sufferers feel relaxed or

comfortable. Giving cinnamon can reduce pain because it inhibits the cause of *Gout Arthritis* by reducing cytokines or small proteins that function as mediators and regulators of immunity, inflammation and hematopoiesis

According to the researcher's assumption that giving cinnamon decoction can reduce pain levels in respondents, according to the researcher, giving cinnamon decoction is very effective in reducing pain in people with *Gout Arthritis* (Hidayatullah & Rejeki, 2022) . Where cinnamon has a pharmacological effect, namely as an analgesic because it contains active compounds including *cinnamaldehyde*, *eugenol*, *cinnzeylanine*, *cizey lanol*, *arabinoylan*, *2-hydrocinnamaldehyde* and *2-benzoloycinnamaldehyd*. The content of these compounds can suppress cytokines as pain receptors so that it can relieve pain in people with *Gout Arthritis* (Martha Sella Rianti, 2020) .

### **3. Comparison of Bay Leaf Decoction and Cinnamon Decoction on Reducing Pain Scale in *Gout Arthritis* Patients**

The results of the comparison between the cinnamon decoction group and the bay leaf decoction group showed a mean difference of 1.782 with a *p value* of  $0.196 > 0.05$ .  $H_0$  was rejected, meaning there was no difference between bay leaf decoction and cinnamon decoction on reducing the pain scale in *gout arthritis* sufferers in the Baiturrahman Health Center Work Area, Banda Aceh City .

*Gouty arthritis* is a type of inflammatory joint disease or inflammation of the joints caused by the deposition of monosodium urate crystals in synovial tissue and other tissues. Gout arthritis will cause the sufferer's uric acid levels to increase and the sufferer will also feel pain, swelling, redness, and warmth in the joints (Maghribi & Nasution, 2023) . If the symptoms that

arise are not treated, it will cause damage to the joints. Treatments carried out to prevent an increase in uric acid levels in the blood include regulating diet, avoiding foods high in purines, consuming sufficient vitamins and minerals, regular exercise, quitting smoking, controlling stress and can be given drugs for pharmacological therapy. Other treatments that can be used to overcome increased uric acid levels are herbal remedies. (Teguh Sutanto, E-Book 2018)

From the results of the description above, it can be concluded that giving boiled cinnamon and boiled bay leaves is very important in reducing pain levels in patients. *Gouty arthritis* . This was proven by researchers who distinguished two groups, one group with cinnamon decoction and one group with with boiled bay leaves. After conducting the Independent T-Test, there was no significant difference, so it can be said that giving cinnamon decoction and bay leaf decoction interventions is very useful in reducing pain levels in patients with *gout arthritis* (Maghribi & Nasution, 2023) .

## **CONCLUSION**

In the research with case studies conducted, the results obtained were that there was no difference between boiled bay leaves and boiled cinnamon on reducing the pain scale in *gout arthritis sufferers* in the Baiturrahman Health Center Work Area, Banda Aceh City. with a *p value* = 0.196.

It is hoped that this research can provide additional information to *Arthritis Gout* sufferers and become an alternative treatment in reducing the scale of pain by consuming boiled bay leaves and boiled cinnamon.

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