



EFFECTIVENESS COMBINATION OF *HEGU* AND *TAIXI* POINT ACUPRESSURE WITH RED GINGER HYDROTHERAPY ON PAIN SCALE IN GOUT ARTHRITIS CLIENTS

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ABSTRACT	Keywords
<p>Arthritis gout is a disease caused by a purine metabolism disorder characterized by hyperuricemia and recurrent attacks of acute synovitis causing severe pain in the joint area. One of the treatments for gout arthritis with non-pharmacological therapy is acupressure and warm red ginger hydrotherapy which is able to relax muscles, increase blood circulation, and can stimulate the effector system causing peripheral vasodilation so that blood flow to tissues is smooth, especially tissues that are inflamed so that it can reduce inflammation joint pain. This study aims to determine the effectiveness of the combination of acupressure on the <i>hegu</i> and <i>taixi</i> with red ginger hydrotherapy as a complementary nursing intervention in reducing pain in gouty arthritis sufferers. Quantitative research with true experiment approach pre and post-test control group design involving 30 respondents divided into intervention group (n=10) given acupressure and red ginger hydrotherapy, while control group 1 (n=10) was given acupressure and control group 2 (n =10) was given red ginger hydrotherapy. The sampling technique used <i>probability sampling</i> with <i>simple random sampling</i> based on inclusion and exclusion criteria. Then the research results were analyzed using parametric tests, namely <i>Paired t test</i>, <i>ANOVA test</i> and <i>Post Hoc Bonferroni test</i>. The <i>ANOVA test</i> showed a significant value of $p = 0.000 (<0.05)$, while the <i>Post Hoc Bonferroni test</i> showed that between the intervention group and control 1 there was a difference with a significant value of $p = 0.001$, between the intervention group and control 2 there was a difference in the value significant $p=0.005$ and between control group 1 and control 2 there was no difference with a significant value of $p=1,000$. There was a difference between the intervention group, control group 1 and control group 2, which means that the administration of acupressure at the <i>hegu</i> and <i>taixi</i> with red ginger hydrotherapy was more effective in reducing pain in gouty arthritis patients than acupressure and red ginger hydrotherapy alone.</p>	<p>Acupressure, red ginger hydrotherapy, pain scale, arthritis gout</p>

INTRODUCTION

Arthritis gout is a disease that attacks the joints characterized by accumulation of monosodium urate monohydrate (MSU) in

synovial or in other tissues.¹ The prevalence of gouty arthritis in various countries in the world in recent decades continues to increase.² In Indonesia, the prevalence of

joint disease is on average 7.3% based on doctor's diagnosis, with the highest province being Aceh at 13.3%, followed by Bengkulu and Bali.³

This disease causes complaints in sufferers such as repeated joint pain, stiffness in the joints causing swelling.⁴ Gouty arthritis will continue to spread to various other joints if not treated seriously.⁵ The presence of joint pain in the musculoskeletal affects the limitations of the patient's physical activity, so that it can cause the inability to meet their daily needs and can depend on the help of others.⁶

Arthritis gout pain is not only done pharmacologically but also non-pharmacologically. As acupressure therapy is known to have a good reputation in providing basic health care with painless treatments that can reduce various ailments traditionally.⁷ In addition to acupressure therapy, hydrotherapy is also used for various chronic diseases such as arthritis, which relies on the body's response to water.⁸ Hydrotherapy foot soak warm red ginger water is a type of natural therapy that aims to relax the muscles, increase blood circulation, and can stimulate the effector system causing peripheral vasodilation so that blood flow to tissues is smooth, especially tissues that are inflamed so that it can reduce joint pain.^{9,10}

Previous research on acupressure on gouty arthritis pain showed that the data before the intervention showed that most of the pain was severe, and after the intervention, most of the pain was mild. Based on the effectiveness of the use of acupressure therapy interventions given to the elderly with gouty arthritis pain, the value of sig (2-tailed) is 0.00, meaning that there is a difference in pain before and after acupressure therapy.¹¹ According to previous research on acupressure intervention combined with bay leaf extract, the results based on the one way ANOVA test were $p = 0.001$ which means that acupressure and bay leaf extract were effective in reducing pain in patients with gouty arthritis. The most influential group in reducing pain in gouty arthritis patients was

the intervention group which was treated with acupressure and bay leaf extract.¹²

Arthritis gout pain showed that there was a difference in the mean score of gout arthritis pain between before and after being given foot soak therapy with warm ginger p value = 0.000. There was a difference in the mean score of gout arthritis pain before and after being given foot bath therapy with warm water, p value = 0.002. The results of the statistical test with the Mann Whitney U test showed that there was no difference in the mean scores of arthritis gout pain before and after being given foot bath therapy with warm ginger and foot soak therapy with warm water p value = 0.217. It can be concluded that foot bath therapy with warm ginger and foot soak therapy with warm water has the same effectiveness in reducing gout arthritis pain.¹³ Previous research has also been conducted on the use of warm ginger compresses for gouty arthritis pain. The results showed that warm ginger compresses can reduce pain in gouty arthritis, because ginger contains 6-gingerdion, 6-gingerol, zingerol which functions to suppress inflammatory products such as histamine, bradykinin. and prostaglandins.¹⁴

From several studies on acupressure and hydrotherapy on the pain scale. Further research is needed to determine the effect of the combination of acupressure with various points and red ginger hydrotherapy as a complementary nursing intervention in patients with gouty arthritis. The formulation of the problem in this study is "Is there any effectiveness of the combination acupressure at the *hegu* and *taixi* point with red ginger hydrotherapy on pain scale in patients with gouty arthritis?"

METHODS

Design

Quantitative research with true experiments with a pre and post-test control group design which was divided into 3 groups, namely the intervention group which was given acupressure at the *hegu* and *taixi* points with red ginger hydrotherapy, while the control group I was given acupressure action without red ginger hydrotherapy and

control group 2 were given red ginger hydrotherapy without acupressure. Acupressure is given using fingers for 3 minutes duration at each acupoint and red ginger hydrotherapy is boiled at a temperature of 40.5°C to 43°C for 20-25 minutes.

Sample and sampling technique

The population in this study were all patients suffering from gouty arthritis in the scope of work of the Indrajaya Public Health Center, Pidie Regency. The number of samples used were 30 respondents which were divided into three groups with 10 respondents in the intervention group, 10 respondents in the control group 1 and 10 respondents in the control group 2. The sampling technique used *probability sampling* with *simple random sampling* based on inclusion criteria and exclusion.

Instrument

Numeric rating scale (NRS) is used to measure the pain scale of patients with arthritis gout before treatment (pre-test) and after treatment (post-test) with a measuring value of 0 = no pain, 1-3 = mild pain, 4-6 = moderate pain, 7-9 = severe pain and 10 = acute pain. Other supporting instruments in the form of observation sheets and questionnaires to assess the pain scale and the identity of the respondents. Meanwhile, the instrument for providing interventional acupressure therapy and red ginger hydrotherapy with a standardized Standard Operating Procedure (SOP) sheet contains procedures for acupressure and red ginger hydrotherapy. However, prior to treatment, patients were asked to sign an informed consent form, namely the willingness to be a respondent in this study from the initial stage to the final stage.

Intervention

Orientation or approach used by the researcher to the respondents in the intervention and control groups by providing an explanation of the purpose, time contract and action which was then given informed consent to serve as evidence that the respondent was willing to participate in the research procedure carried out from beginning to end. Before carrying out the procedure, the researcher assessed the pain scale by asking respondents to fill out a

questionnaire sheet that had been provided (pre-test). Then, in the intervention group, the researchers gave acupressure at the *hegu* and *taixi* points using fingers for a duration of 3 minutes at each acupoint with red ginger hydrotherapy boiled using a temperature of 40.5°C to 43°C for 20-25 minutes. Meanwhile, control group 1 was given acupressure without red ginger hydrotherapy and control group 2 was given red ginger hydrotherapy without acupressure with the same duration, technique and procedure. Researchers measured the pain scale after treatment (posttest) in the intervention and control groups. Pain scale measurements pre and post-test were tested for data analysis to determine the results of this study.

Data Analysis

This study carried out research with data collection methods by observation, identification, interviews and filling out observation sheets. The data collected were analyzed through the SPSS program and continued with parametric analysis tests (Paired t test, ANOVA test and Bonferroni Post Hoc test). The processed data can be used as a basis for discussing the problem statement which can then be presented in tabular form and conclusions can be drawn.

Ethical Considerations

In ethical considerations, researchers must first take care of and obtain permits for research that has been carried out from LPPM STIKes Jabal Ghafur which is funded by a grant from the Ministry of Education and Culture (Kemendikbud) novice lecturers and carries out an ethical clearance test from the Health Research Ethics Commission (KEPK) Sari Mutiara University Indonesia, then submitted a research permit to the Indrajaya Public Health Center, Pidie Regency to collect data. Data collection carried out by researchers certainly pays attention to ethical aspects, including: anonymity, confidentiality, and autonomy. The researcher asked the respondent's consent to participate (informed consent) before the study was conducted.

RESULTS

Table 1. Frequency distribution of respondents from age, gender, occupation and education based on demographic

data

Variable	Category	Group					
		Intervention		Control 1		Control 2	
		f	%	F	%	f	%
Age	Early Adult	-	-	1	10%	3	30%
	Late Adult	2	20%	6	60%	5	50%
	Early seniors	7	70%	1	10%	1	10%
	Late seniors	1	10%	2	20%	1	10%
	Total	10	100%	10	100%	10	100%
Gender	Male	-	-	-	-	1	10%
	Female	10	100%	10	100%	9	90%
	Total	10	100%	10	100%	10	100%
Occupation	Domestic	7	70%	5	50%	7	70%
	Civil Servant	1	10%	1	10%	1	10%
	Farmer	2	20%	-	-	-	-
	Farmer	-	-	2	20%	1	10%
	Honorary	-	-	2	20%	1	10%
	Total	10	100%	10	100%	10	100%
Education	SD	5	50%	2	20%	2	20%
	SMP	1	10%	1	10%	2	20%
	SMA	3	30%	4	40%	4	40%
	College	1	10%	3	30%	2	20%
	Total	10	100%	10	100%	10	100%

**Levene test*

Based on the table above shows that the most age in the intervention group is the early elderly 70%, in control group 1 the most in late adulthood as much as 60% and in control group 2 most in late adulthood 50%. Most of the sexes were female, where

in the intervention group there were 10 people (100%), in the control group 1 there were 10 people (100%) and in the control group 2. Meanwhile, the most occupations were IRT, in the intervention group there were 7 people (70%), in control group 1 as many as 5 people (50%) and in control group 2 as many as 7 people (70%). The most education in the intervention group was elementary school as many as 5 people (50%), in control group 1 there were 4 people in high school (40%) and in control group 2 there were 4 people in high school (40%).

Table 2. Frequency distribution of pain scales before and after treatment in the intervention and control groups based on demographic data

Variable	P	Group					
		Intervention		Control 1		Control 2	
		Mean ± SD	Min - Max	Mean ± SD	Min - Max	Mean ± SD	Min - Max
Pain score	P	5.4 ± 1.17	4-7	5.5 ± 1.26	4-7	5.5 ± 1.08	4-7
	Pre	1.9 ± 1.37	0-4	3 ± 1.49	1-5	2.8 ± 0.91	1-4
	Post	0	-	0	-	0	-

**Levene test*

Based on the table above shows that there is a decrease in the average pain scale which can be seen from the decrease after treatment in the intervention group, control group 1 and control 2 by looking at the mean post value in each group. The decrease in the mean post pain scale was highest in the intervention group with a post mean value of 1.9 and the lowest decrease in the mean post value in the control group 2, which was 3.

Table 3. The difference in the mean pain scale before and after treatment in the intervention and control groups

Group	Mean ± SD		Delta	P value
	Pre	Post		
Intervention	5.40 ± 1.17	1.90 ± 1.37	3.5	0.000*

Control 1 6	5.5±1.2	3.0±1.49	2.5	0.000 *
Control 2 08	5.50±1.08	2.80±0.919	2.70	0.000 *

**Paired t test*

Based on the table above shows that in the intervention group there is a difference in the average pain scale before and after the treatment acupressure at the *hegu* and *taixi* point with red ginger hydrotherapy as much as 3.5 with a significant value of $p=0.000$ ($p<0.05$). Meanwhile, in control group 1 the average pain scale before and after giving acupressure at the *hegu* and *taixi* without red ginger hydrotherapy was 2.5 with a significant value of $p=0.000$ ($p<0.05$) and in control group 2 the average pain scale was before and after giving red ginger hydrotherapy treatment without acupressure at the *hegu* and *taixi* point as much as 2.70 with a significant value of $p=0.000$ ($p<0.05$). So, it can be concluded that there is a significant effectiveness before and after treatment in each group.

Table 4. Analysis of the difference in the mean pain scale between the intervention and control groups using the ANOVA test

Variables	Measurement	Group	Mean±SD	P value
Pain	Delta	Intervention	3.50±0.527	0.000*
		Control 1	2.50±0.527	
		Control 2	2.70±0.483	
		Control 2	2.70±0.483	

**ANOVA test*

Based on the table above shows that the difference between the intervention group, control group 1 and control group 2 with the ANOVA test on the delta value (the difference between the pre and post values) so that the results of the pain scale show that there are differences between the intervention group, control group 1 and control group 2 with a significant value of $p=0.000$ ($p<0.05$).

Table 5. Analysis of the difference in the mean pain scale between the intervention and control groups using the Post Hoc Bonferroni test

Variable	Measurement	Inter-Group	P value
Pain	Delta	Intervention vs Control 1	0.001*
		Intervention vs Control 2	0.005*
Control 1	Delta	Control 1 vs Control 2	1.000*
		Control 1 vs Control 2	1.000*

Variable	Measurement	Inter-Group	P value
Pain	Delta	Intervention vs Control 1	0.001*
		Intervention vs Control 2	0.005*
Control 1	Delta	Control 1 vs Control 2	1.000*
		Control 1 vs Control 2	1.000*

**Post hoc bonferroni test*

Based on the table above shows the differences between groups before and after the treatment of acupressure at the *hegu* and *taixi* point with red ginger hydrotherapy in the intervention group, control group 1 and control group 2. The results of the delta statistical test (difference in pre and post values) between groups with the *Post Hoc Bonferroni test* follow on the pain scale were obtained between the intervention group and control 1 with a significant difference was obtained $p=0.001$ ($p<0.05$), there was a difference between the intervention group and control 2 with a significance value of $p=0.005$ ($p<0.05$) and between the control group 1 and control 2 there was no difference with a significant value of $p=1.000$ ($p<0.05$).

DISCUSSION

Based on the results of research on the pain scale, it is known that before giving a combination of acupressure treatment at the *hegu* and *taixi* point with red ginger hydrotherapy in the intervention group, giving acupressure at the *hegu* and *taixi* point in control group 1 and red ginger hydrotherapy in control group 2, it is known that the results of the homogeneity test on the pre-test pain scale $p=0.691$ and the pain scale on the post-test 0.213 which statistically has the same or homogeneous mean.

In measuring the pain scale based on the ANOVA test shows the intervention group (administration of acupressure at the *hegu* and *taixi* point with red ginger hydrotherapy) with a value of $(3.5±0.527)$ in the control group 1 (administration of acupressure at the *hegu* and *taixi* point) with a value of $(2.5±0.527)$ and control group 2 (administration of red ginger hydrotherapy) with a value $(2.7±0.483)$ obtained a significant value ($p=0.000$). Then continued

with the post hoc Bonferroni the results showed that between the intervention group and control 1 there was effectiveness with a significant with value $p=0.001$, between the intervention group and control 2 there was effectiveness with a significant value $p=0.005$ and between control group 1 and control 2 there was no effectiveness with a significant value $p=1.000$.

So, it can be concluded that there are differences between the intervention groups (administration of acupressure at the *hegu* and *taixi* point with red ginger hydrotherapy), control group 1 (administration of acupressure at the *hegu* and *taixi* point) and control group 2 (administration of red ginger hydrotherapy), which means the administration of acupressure at the *hegu* and *taixi* point with red ginger hydrotherapy is effective in reducing pain in gouty arthritis patients.

In a previous study entitled the effect of acupressure and music therapy to reduce labor pain, it was found that acupressure or music therapy could significantly reduce labor pain. Acupressure has the advantage of reducing uterine pressure compared to music therapy, while music therapy has more benefits in reducing postpartum anxiety levels than acupressure. In addition, combination therapy between acupressure and music therapy can also greatly reduce labor pain intensity and appears to be superior to single therapy in several parameters. However, no significant difference was found between combination therapy and single therapy in relieving pain intensity.¹⁵

According to the holistic theory, the process of reducing pain by performing acupressure, both stimulation and sedation, depends on the yin and yang patient. Acupressure on acupuncture points will have a local effect on the area around the point where the pressure is applied. This acupressure energy will flow through the meridians to the target organ, this stimulation will affect the effects of changes in biochemistry such as increased levels of endorphins, physiological changes can be in the form of blood flow and oxygen activity

and taste perception can be a decrease in the level of pain felt.¹⁶

Another study said that the use of acupressure techniques at the *Hegu* point (L14) was significantly effective in reducing pain intensity, while in the touch and control group the pain intensity increased significantly after the intervention. Acupressure through the theory of endorphin secretion reduces the severity of labor pain.¹⁷

Acupressure at the *taixi* point with a mechanism of action by providing a local effect in the form of decreasing pain in the area around the pressure point. This stimulates that receptor stimulation activates the pain modulation system in the central nervous system which will stimulate endorphins to suppress the transmission and perception of pain so that pain can be reduced. And the effect of giving ginger compresses on the intensity of gout arthritis pain in the elderly in Kalimantan. Getting results is more effective than just using a regular warm compress, with p -value = 0.000.¹⁸

Based on previous research using warm ginger compresses, the results of bivariate analysis showed that 28 respondents before doing warm ginger compresses had pain on a 46.4% scale with severe pain categories totaling 13 people. And after doing a warm ginger compress, the respondent's scale of pain was 57.1% with a mild pain category of 16 people. And based on statistical results using the Wilcoxon test, there was a significant effect between warm ginger compresses on the gout arthritis pain scale. There is a decrease in the pain scale. This decrease can be seen after the warm ginger compress, the average respondent experienced a mild pain scale.¹⁹

The results of previous studies showed the intensity of rheumatoid arthritis pain before warm ginger compresses (pre-test) on average with moderate pain intensity. Meanwhile, the intensity of pain after a warm ginger compress (post-test) was on average with mild pain intensity. Based on the alternative Wilcoxon Paired t-test, p -value 0.000 (<0.05) means that there is a significant influence between the effect of

warm ginger compresses on reducing pain intensity in patients with rheumatoid arthritis.²⁰

Warm ginger compresses can reduce gouty arthritis pain. Ginger compress is a traditional treatment or alternative therapy to reduce gout arthritis pain. Warm ginger compresses contain cyclooxygenase enzymes that can reduce inflammation in gouty arthritis sufferers. In addition, ginger also has a pharmacological effect of hot and spicy taste, where this heat can relieve pain, stiffness, and muscle spasms or vasodilation of blood vessels. Maximum benefit will be achieved within 20 minutes after heat application.²¹

This study divided respondents into three groups with one intervention group given acupressure at the *hegu* and *taixi* point with red ginger hydrotherapy at the same time and there were two positive control groups, control group one positive was only given acupressure at the *hegu* and the *taixi* point only and the control group two positive were only given red ginger hydrotherapy. This division aims to see the difference between the actions that were given two interventions at once and by separating the results of the intervention group that was given two actions at the same time getting more reduction values. This is influenced by the mechanism that works on the body simultaneously so as to accelerate the desired results in reducing the pain scale in gout arthritis clients.

CONCLUSION

Based on the results of the *ANOVA test*, it showed a significant value of $p=0.000$ (<0.05), while the *Post Hoc Bonferroni test* showed that between the intervention group and control 1 there was a difference with a significant value of $p=0.001$, between the intervention group and control 2 there was a difference with a significant value of $p=0.005$ and between control group 1 and control 2 there was no difference with a significant value of $p=1.000$. In conclusion, there are differences between the intervention group, control group 1 and control group 2 which means that the administration of acupressure at the *hegu* and *taixi* point with red ginger hydrotherapy

was more effective in reducing pain in gouty arthritis patients than acupressure and red ginger hydrotherapy alone.

REFERENCES

1. Putri Dar, Imandiri A, Rakhmawati R. Therapy Low Back Pain With Swedish Massage, Acupressure And Turmeric. *Journal Of Vocational Health Studies*. 2020;4(1):29-34.
2. Haryani S, Misniarti M. Efektifitas Akupresure Dalam Menurunkan Skala Nyeri Pasien Hipertensi Diwilayah Kerja Puskesmas Perumnas. *Jurnal Keperawatan Raflesia*. 2020;2(1):21-30.
3. Haksara E, Rahmanti A. Penerapan Terapi Rendam Kaki Dengan Air Jahe Hangat Terhadap Penurunan Nyeri Pada Pasien Arthritis Gout Di Puskesmas Mungkid Kabupaten Magelang. *Jurnal Ilmu Kedokteran Dan Kesehatan Indonesia*. 2022;2(1):11-21.
4. Potter Pa, Perry Ag, Stockert P, Hall A. Fundamentals Of Nursing: Elsevier Health Sciences. *St. Louis: Elsevier*; 2016.
5. Silfiyani Ld, Khayati N, Editors. Foot Hydrotheraphy Menggunakan Jahe Merah (Zingiber Officanale Var Rubrum) Untuk Penurunan Hipertensi Lansia. *Prosiding Seminar Nasional Unimus*; 2021.
6. Kirca As, Gul Dk. Effects Of Acupressure And Shower Applied In The Delivery On The Intensity Of Labor Pain And Postpartum Comfort. *European Journal Of Obstetrics & Gynecology And Reproductive Biology*. 2022;273:98-104.
7. Raana Hn, Fan X-N. The Effect Of Acupressure On Pain Reduction During First Stage Of Labour: A Systematic Review And Meta-

- Analysis. *Complementary Therapies In Clinical Practice*. 2020;39:101126.
8. Hamlacı Y, Yazıcı S. The Effect Of Acupressure Applied To Point Li4 On Perceived Labor Pains. *Holistic Nursing Practice*. 2017;31(3):167-76.
 9. Dias Jm, Cisneros L, Dias R, Fritsch C, Gomes W, Pereira L, Et Al. Hydrotherapy Improves Pain And Function In Older Women With Knee Osteoarthritis: A Randomized Controlled Trial. *Brazilian Journal Of Physical Therapy*. 2017;21(6):449-56.
 10. Therkleson T. Ginger And Osteoarthritis. *Australia Edith Cowan University*; 2012.
 11. Ziliwu KH, Zalukhu FK, Rifai ML, Halawa DH, Gultom M, Anggeria E. The Effectiveness Of The Use Of Acupressure Therapy On Reducing The Pain Scale Of Gout Arthritis In The Elderly At The Guna Budi Bakti Foundation Nursing Home. *STRADA Jurnal Ilmiah Kesehatan*. 2021;10(1):1280-6.
 12. Sari N, Yuswanto TJA, Fatmasari D. Complementary Nursing Intervention Of Acupressure And Bay Leaf Extract (*Syzygium Polyanthum*) On Reducing Pain Among Patients With Arthritis Gout. *International Journal Of Nursing And Health Services (IJNHS)*. 2020;3(6):700-8.
 13. Liana Y, Editor Efektifitas Terapi Rendam Kaki Dengan Air Jahe Hangat Terhadap Nyeri Arthritis Gout Pada Lansia. *Proceeding Seminar Nasional Keperawatan*; 2019.
 14. Radharani R. Kompres Jahe Hangat Dapat Menurunkan Intensitas Nyeri Pada Pasien Gout Arthritis. *Jurnal Ilmiah Kesehatan Sandi Husada*. 2020;9(1):573-8.
 15. Wan Q, Wen F-Y. Effects Of Acupressure And Music Therapy On Reducing Labor Pain. *International Journal Of Clinical And Experimental Medicine*. 2018;11(2):898-903
 16. Kurniyawan Eh. Acupressure As Complementary And Alternative Therapy For Reducing Pain Intensity: A Narrative Review. *Nurseline Journal*. 2016;1(2):246-56.
 17. Dabiri F, Shahi A. The Effect Of Li4 Acupressure On Labor Pain Intensity And Duration Of Labor: A Randomized Controlled Trial. *Oman Medical Journal*. 2014;29(6):425.
 18. Pertiwi Eme, Awaludin S, Sumeru A. The Effect Of Combination Therapy Of A Warm Ginger Stew Compress And Ki. 3 Point Acupressure On The Pain Level Of Gout Arthritis Patients In Indonesia. *Jurnal Ners*. 2019;14(2):151-4.
 19. Tunny R, Djarami J, Tambipessy Yty. The Effect Of Warm Ginger Compress Toward Pain Level Of Arthritis Gout Sufferer In Waimital Village, Kairatu Subdistrict, West Of Seram Regency. *Health Notions*. 2018;2(7):788-91.
 20. Siringoringo E, Nensi Er. Effect Of Ginger Warm Compresses On Pain Intensity Reduction In Patients With Rheumatoid Arthritis. *Comprehensive Health Care*. 2018;2(2):49-57.
 21. Susanti D. The Effect Of Warm Ginger Compress On The Decreasing Rheumatoid Arthritis Pain Scale In The Elderly At Kasih Sayang Hospital Of Batu Sangkar. *Jurnal Umsb*. 2014.