



THE EFFECTIVENESS OF THERAPY COMBINATION OF ACUPRESSURE AND LAVENDER AROMATHERAPY TOWARD ELDERLY PAIN WITH ARTHRITIS GOUT: A QUASI-EXPERIMENTAL STUDY

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ABSTRACT

The total population of the elderly has been rising all over the world. It is predicted with the nature of human aging several health problems will be a new burden including Arthritis Gout. This type of joint disease causes pain in the joints accompanied by stiffness, redness, and edema. A Non-pharmacological approach is strongly needed as combination therapy which has been effective in reducing pain. Acupressure and aromatherapy have been widely used in several populations but limited knowledge in the effect of pain among patients with arthritis gout. Objective. The purpose of this study was to determine the effect of acupressure therapy and lavender aromatherapy on reducing pain in the elderly with gout arthritis. Methods: This research is a quasi-experiment with a two-group pre-test and post-test design approach. Respondents were divided into control and intervention groups. The instrument used in this study is the NRS (Numerical Rating Scale) using Likert Scale 0-10. Data analysis using Independent T-Test. Results: The majority of was in the early phase (45-59 years), female, and had high education. The results of the analysis showed a statistically significant decrease in pain scale h a p-value of 0.001. Conclusion: The combination of acupressure and lavender aromatherapy is effective in lowering pain scales in elderly people with gout arthritis.

Keywords: acupressure; arthritis; elderly; lavender; pain

First Received 14 March 2024	Revised 22 April 2024	Accepted 24 April 2024
Final Proof Received 01 July 2024	Published 01 October 2024	
How to cite (in APA style) Vilda, V., Herlinah, L., & Permatasari, T. A. E. (2024). The Effectiveness of Therapy Combination of Acupressure and Lavender Aromatherapy Toward Elderly Pain with Arthritis Gout: A Quasi-Experimental Study. <i>Indonesian Journal of Global Health Research</i> , 6(5), 2933-2938. https://doi.org/10.37287/ijghr.v6i5.3220 .		

INTRODUCTION

It is estimated that the elderly population will skyrocket in 2050 with a total of 2.1 billion and 80% of them live in low and middle-income countries (LMICs) (WHO, 2022). The current condition of world population is dominated by elderly people (Fatmawati & Imron, 2017). A number of health deterioration occurs following human aging and those various changes increase the risk of degenerative diseases in the elderly (Kaunang et al., 2019). The increasing incidence of non-communicable diseases (NCDs) accounts for 63% of all causes of death (Ministry of Health, Indonesia, 2019). One of the illnesses majority happen in older adults is arthritis which can cause physical disability and frequently women are more likely to experience it than men (NIH, 2024). Data reported the global prevalence of Arthritis Gout in 2017 was 34.2% (WHO, 2020). In Indonesia, a health survey described that the total prevalence of osteoarthritis in Indonesia is 40 million and 40% of cases occurs among adults older than 70 years old (Silitonga, J. 2024). Recent study found that Gout was independently associated with a 15% higher risk of incident dementia in the elderly resulting more burden to health systems (Singh, J. A., & Cleveland, J. D. (2018).

Pain management in arthritis got involves not only providing pharmacological therapy, but also providing non-pharmacological therapy such as complementary nursing therapy and alternative therapy which can improve basic medical care while offering painless treatment and alleviating various diseases (Sari, A. P., & Farida, F, 2021). One of the complementary therapies is acupressure. Previous studies described the effectiveness of acupressure to reduce pain in several population (Mubarok, A., Hidayat, A., & Febriyanto, S, 2018); Kostania, G., Kuswati, K., & Fitriyani, A, 2019), Ziliwu, K. H., Zalukhu, F. K., Rifai, M. L., Halawa, D. H., Gultom, M., & Anggeria, E, (2021). Apart from acupressure, use aromatherapy with lavender essential oil is also useful for reducing pain and providing a relaxing effect because lavender contains linalyl acetate and linalool (Prasetiyo & Susilo, 2020 Another study conducted by Sulastri (2017) showed that the pain scale decreased from moderate pain to mild pain after giving lavender aromatherapy by dripping 0.5 ml on gauze, placed on the nose in a relaxed sleeping position, which was given for 3 days. However, based on above studies limited knowledge had been found the effect of combination therapy of acupressure and aromatherapy. Based on explanation above, this study aim was to analyze the effectiveness of acupressure therapy and lavender aromatherapy to reduce pain in elderly people with arthritis gout.

METHOD

The study used a quasi-experimental approach with two group of control and intervention and conducted pre-test and post-test design. Convenience sampling method was applied in this study. This study was conducted in one of the urban community health centers in Indonesia during one month period from August-September 2023. The inclusion criteria of this study was elderly with arthritis gout and the exclusion criteria were respondents with hypoglycemia and hypertension A total of 38 respondents divided into two groups agreed to participate in this study using convenience sampling method Instruments was used is NRS (Numerical Rating Scale) from 0-10 with the higher scare indicating more pain. This instrument has been used in numerous study. This scale is designed to determine the severity of pain and provide opportunities for patients to express themselves how much pain he experienced (Potter, P. A., Perry, A. G., Stockert, P. A., & Hall, A, 2021)This scale is quite helpful when comparing the scale of pre- and post-operative care (Yudiyanta, N. K., & Ratih, NW (2015) At the first, researcher conducting health assessment and measure uric acid and blood glucose. Intervention was conducted for 20 minutes of acupressure and aromatherapy in 7 days. Data was analyzed using Independent T-Test. This research gained ethical permission from the Ethic Committee- University of Muhammadiyah Jakarta Number 1110/F.9-UMJ/VII/2023 at 28 July, 2023

RESULTS

Table 1.

Demographic Characteristics of Elderly (n=38)

Variables	Intervention (n=19) (N,%)	Control (n=19) (N,%)	p-value
Age			0.18
Early Elderly	13 (68.4)	12 (63.2)	
Late Elderly	6 (31.6)	7 (36.8)	
Gender			0.04*
Male	0	5 (26.3)	
Female	19 (100)	14 (73.7)	
Education			0.66
High	17 (89.5)	15 (78.9)	
Low	2 (10.5)	4 (21.1)	

Table 2.
Analysis of Effect Combination Therapy Acupressure and Aromatherapy

Group	Mean ± SD	95% CI	p-value
Intervention	2.95 ± 0.48	4.12- 3.33	0.00*
Control	6.69 ± 0.61		

*p-value significant at $p < 0.005$

Table 3.
Subgroup Analysis Effect Combination Therapy Acupressure and Aromatherapy

Variables	Mean ± SD		95% CI		p-value
	Intervention	Control	Intervention	Control	
Age	-3.35 ± 0.85	-5.23 ± 1.03	3.76 - 2.94	5.73 - 4.73	0,00*
Gender	-2.67 ± 0,64	-4.97 ± 0.61	2.98 - 2.36	5.27 - 4.67	0,00*
Education	-3.56 ± 0.78	-5.49 ± 0.64	3.94 - 3.18	5.80 - 5.18	0,00*

*p-value significant at $p < 0.005$

Table 1 shows that the highest percentage was in the early elderly group (45-59 years) both in the intervention group (68.4%) and in the control group (63.2%). The gender percentage was predominantly female in both the intervention group (100%) and the control group (73.7%). Most respondents had a low level of education in both the intervention group (89.5%) and the control group (78.9%). Based on Table 2 there is a statistically significant effect of mixed therapy acupressure and aromatherapy at reducing pain level ($p < 0.005$) and from Table 3 analysis of subgroup, it can be concluded that age, gender, and education have impacted pain level.

DISCUSSION

Elderly Characteristics

The majority of respondents are in the early elderly category (45-59 years), and are female. The results of this study are in line with research conducted by Arjani, I. A. S., Mastra, N., & Merta, I. W, 2018) which found that the highest uric acid results were found in elderly people aged 45-59 years. Research conducted by Songgigilan, A. M., Rumengan, I., & Kundre, R. (2019).found that women were more affected by gout than men. There are many factors that increase the risk of developing gouty arthritis, including age, both in women and men. Increasing age causes a decrease in kidney function, because estrogen has a uricosuric effect. Where in women the risk begins to increase at the age of 45 years and will continue to increase as estrogen levels decrease Apart from that, education is very important. The results of research conducted by Oga, C., Hadi, M., & Makausi, E. (2017) the total of 35 (71%) of the 49 respondents had a low level of knowledge, even though knowledge is a determining factor in determining a person's actions. A person's level of education is related to their level of knowledge, including knowledge about the disease so that awareness in order to avoid disease will also increase. Demographic characteristics in previous study including age, sex, BMI, index severity of patients similar with this study (Ahmad, I. W., Rahmawati, L. D., & Wardhana, T. H. (2018)

Pain Characteristics

Pain characteristics before therapy showed severe pain in both the intervention group and the control group. After being given a combination of acupressure and lavender aromatherapy therapy for 7 days, the pain scale decreased to no pain and mild pain. Meanwhile, in the control group there was a slight decrease, to moderate pain scale. The results of this study are in line with research conducted by Ziliwu (2021), after carrying out acupressure therapy for 10-15 minutes for 7 days, the results showed that on the first day the majority of pain was severe, after 7 days the pain scale decreased to mild and moderate. Another study conducted

by Sulastri (2017), showed that the pain scale decreased from moderate pain to mild pain after giving lavender aromatherapy by dripping 0.5 ml on gauze, placed on the nose in a relaxed sleeping position, which was given for 3 days. Pressing on acupressure points will channel qi energy through the meridians to the target organs so that the resulting stimulation can increase endorphin levels, physiology (blood and oxygen flow), and perception (decreasing pain intensity) (Kurniyawan, 2016). Apart from that, lavender essential oil contains linalyl acetate which has a sedative effect so it can reduce pain and linalool which has the effect of controlling anxiety and stress (Perkins, 2020).

Pain Level

The results of data analysis showed that there was a significant difference between the mean pain scale in the group given the combination therapy intervention of acupressure and lavender aromatherapy and the control group. The results of research conducted by Indaryani, I., & Iskandar, S. (2023) after being given acupressure therapy, the average pain scale decreased from 5.9 to 2.6 with a p-value of 0.0001, so it was concluded that there was an effect of acupressure therapy on reducing the joint pain scale in hyperuricemia patients. Joint pain in gouty arthritis patients is also greatly influenced by uric acid levels, where apart from providing combination therapy with acupressure and lavender aromatherapy, patients are also given education to consume less high-purine foods because the purines contained in food cause hyperuricemia (Sari, A. P., & Farida, F. (2021).). After acupressure therapy, the average pain scale in respondents decreased, this is because acupressure therapy helps improve blood flow which is blocked due to narrowing of blood vessels and causes pain. In addition, research published in various journals reveals that essential oils derived from lavender flowers have sedative and carminative (relaxing) properties. Relaxation can relieve muscle tension that causes pain (Napisah, P, 2022) Providing aromatherapy therapy through inhalation is the most effective method, because the cerebral cortex and nerves in the brain, as well as the central nervous system will be affected when inhaling lavender oil and will stimulate the neurochemical cells of the brain and thalamus to release encaphalin which distracts the sensation of pain (Sulastri, S., & Sarifah, S. (2017).

CONCLUSION

Based on the research results, it was found that combination therapy of acupressure and lavender aromatherapy was effective in reducing the pain scale in elderly people who experienced gouty arthritis.

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