

*Original article*

The Effect of Acupressure on the KI 3 On Pain Scale in Gout Arthritis Patients at UPTD Puskesmas I Health Office of Denpasar Selatan Subdistrict

Ni Wayan Somawati Purnamasari^{1*}, Ni Komang Matalia Gandhari², Ni Luh Putu Dian Yunita Sari², Nyoman Eta Risnawati²

1. Bachelor of Nursing Program, STIKES Bina Usada Bali, Badung, Indonesia
2. Nursing Program, STIKES Bina Usada Bali, Badung, Indonesia

*Correspondence: Ni Wayan Somawati Purnamasari | Stikes Bina Usada Bali | somasagita@gmail.com

Abstract

Introduction: Gout arthritis is a condition where there is an increase in uric acid levels in the blood, leading to various effects, one of which is pain. Managing pain in gout arthritis patients can be addressed through complementary therapy, one of which is acupressure on the KI 3 point. This study aims to determine the effect of acupressure on the KI 3 point on pain scale in gout arthritis patients at UPTD Puskesmas I Health Office of Denpasar Selatan Subdistrict.

Method: The study was conducted using a pre-test and post-test one-group design from February to March 2025, with a sample size of 20 respondents selected using purposive sampling. Pre-test and post-test data were collected using a numerical rating scale. Data were analyzed using the Wilcoxon signed-rank test with $p < 0.05$.

Results: The results showed that the pain scale before acupuncture at point KI 3 had a median pain score of 5, and there was a change in the pain scale after acupuncture at point KI 3, with a median of 3. The analysis results indicate an effect of acupressure at the KI 3 point on the pain scale of gout arthritis patients at the UPTD Puskesmas I Health Center in Denpasar Selatan District, with a p -value < 0.001 . The recommendations from this study are expected to serve as input for nurses to always provide acupressure as a supportive therapy for gout arthritis patients to alleviate acute pain.

Conclusion: It can be said that there was an effect of acupressure at the KI 3 point on the pain scale of gout arthritis patients at the UPTD Puskesmas I of the South Denpasar District Health Office with a value of $p = 0.001$.

Protocol registration: This research has previously passed ethical review with the number: 091/EA/KEPK-BUB-2025
Keywords: Acupuncture, Gout Arthritis, Pain

Received August 4, 2025; Received in revised form September 15, 2025; Accepted September 30, 2025; Available online October 25, 2025

INTRODUCTION

Gout arthritis is a condition in which there is an increase in uric acid levels in the blood by more than 7.5 mg/dl (Zein, 2022). This condition triggers changes in purine metabolism which can result in an increase in uric acid levels in the blood. Gout arthritis is caused by an unhealthy lifestyle among people (Sari et al., 2022). Based on data (Ministry of Health of the Republic of Indonesia (2023), the prevalence of gout arthritis in Indonesia in 2023 is 35% of sufferers and many occur in men over 45 years old. Based on data from the Bali Provincial Health Office in 2023, gout arthritis disease with a total of 17,126 cases and the prevalence of gout arthritis in Denpasar City is around 1,634 cases. Data from the UPTD Puskesmas I of the South Denpasar District Health Office shows that the number of people suffering from gout arthritis in 2023 is 294 people.

Gout, arthritis or gout can have various impacts, namely it can cause permanent joint damage and the accumulation of uric acid crystals in the kidneys can cause kidney stones and can cause kidney failure. The impact of gout arthritis that is also experienced by patients is a lump in the skin caused by the accumulation of crystals under the surface of the skin so that it can cause limited movement. The most common impact felt by gout arthritis patients is continuous discomfort or pain (Salmiyati & Asnindari, 2020).

The impact of gout arthritis is that pain can be controlled even though it cannot be cured, but if left untreated, this condition can develop into very bad for the body (Mahmudi et al., 2024). Almost 90% of sufferers will experience the first symptoms where pain in the joints and joints between the soles of the feet and toes (Afnuhazi, 2019). The appearance of pain reactions in the joints, swelling, and burning symptoms

in the joints are caused by the accumulation of vein crystals in the joint tissue (Imani & Waladani, 2022). Pain that arises due to high levels of uric acid in the blood if left unattended can worsen the intensity of pain, affect mobility, and can cause distress (Imani, 2022). Gout arthritis can be given pharmacological and non-pharmacological therapeutic measures. Pharmacological therapy actions can be carried out by giving or consuming several drugs and one of them is non-steroidal anti-inflammatory drugs (OAINS) useful for reducing uric acid and pain levels, while for non-pharmacology, there are several complementary therapies, one of which is by providing complementary therapy, namely acupressure therapy (Mahmudi et al., 2024).

The administration of acupressure therapy is carried out by applying physical pressure to several points on the surface of the body which is a place of energy circulation and balance to reduce pain (Komariyah et al., 2019; Revianti & Yanto, 2021). Sunaringtyas et al., (2019) stated that acupressure is a therapy with emphasis on certain points based on the basic science of acupressure which can stimulate nerve cells at the acupressure point which will then be channeled to the spinal medulla to the mesencephalon and the pituitary hypothalamus complex to increase blood and systemic endorphin content. The use of endorphins is to alter neurotransmitters, reduce pain and add a sense of comfort. Based on the findings of related research, it was stated that acupressure points that are believed to have a significant effect on reducing pain in gout arthritis patients are studies conducted by Mahmudi et al., (2024), Alfionita et al., (2024) and Imani (2022), which show that acupressure at the KI 3 point can be used as an effective complementary therapy to reduce pain and uric acid levels in gout arthritis patients. Research by Zein (2022), shows that the implementation of acupressure for 15-30 minutes given 1 time a day for 3 consecutive days can reduce pain in gout arthritis patients. In line with the results of the research of Ziliwu et al., (2021), it shows that after acupressure therapy, the majority of severe pain decreases to mild pain.

The preliminary study was conducted on November 19, 2024 at the UPTD Puskesmas I of the South Denpasar District Health Office and based on a documentation study by looking at the medical record data of patients suffering from gout arthritis in 2024 until September as many as 296 people. A research interview study conducted with 10 people with gout arthritis about what are the signs and symptoms of gout arthritis if it recurs, data was obtained that 10 people (100%) experienced pain in the legs in addition to that the researcher also asked about the efforts made when gout arthritis recurred and 10 (100%) said they only coped by taking medication from the health center and taking sleep breaks and said that they did not know and had never tried complementary therapies such as acupressure. Based on the above phenomenon, the researcher is interested in conducting research on the effect of acupressure at the KI 3 point on the pain scale of gout arthritis patients at the UPTD Puskesmas I Health Office of South Denpasar District.

METHOD

In this study, the type of research used by the researcher is pre-experimental research. The design to be used is pre-test and post-test one group design. The study with this design aims to find the effect of acupressure at the KI 3 point on the pain scale of gout arthritis patients at the UPTD Puskesmas I Health Office of South Denpasar District. With a prospective longitudinal subject approach

RESULTS

Analysis of the effect of acupressure point KI 3 on the pain scale of gout arthritis patients at the UPTD Puskesmas I of the South Denpasar District Health Office using the Wilcoxon sign-rank test after the data was said to be abnormal. The Wilcoxon sign-rank test can be seen in the table below

Table 1. Analysis of the effect of acupressure point KI 3 on the pain scale of gout arthritis patients at the UPTD Puskesmas I Health Office of South Denpasar District

		N	Mean Rank	Sum of Ranks	Z	P-Value
Post_test – pre_test	Negative Ranks	19 ^a	10,00	190,00	-3.888	0,001
	Positive Ranks	0 ^b	0,00	0,00		
	Ties	1 ^c				
	Total	20				

Table 1 of the results of the Wilcoxon sign-rank test obtained Negative Ranks is 19 which shows a decrease in the pain scale from the pre test score to the post test score as many as 19 people with a mean rank or average decrease of 10 with the number of positive rankings or the sum of ranks of 190 and a Positive Ranks value of 0 which can be interpreted as no respondent experienced an increase in the pain scale from pre test to post test. The results also obtained a tie value, which is 1 which can be interpreted as many as 1 respondent

having the same score between pre test and post test. The results of the Wilcoxon sign-rank test were obtained with a value of -3.888 greater than the Z value of the table -1.96, which can be interpreted as a significant difference between the pain scale before and after acupressure was given at the KI 3 point and obtained a value of $p = 0.001$. This means that there is an effect of acupressure at the KI 3 point on the pain scale of gout arthritis patients at the UPTD Puskesmas I of the South Denpasar District Health Office.

DISCUSSION

The results of the study showed that there was an effect of acupressure of KI 3 point on the pain scale of gout arthritis patients at the UPTD Puskesmas I of the South Denpasar District Health Office. This shows that there is a change in the pain scale before and after acupressure is given KI 3 point acupressure. In line with research conducted by Mahmudi et al., (2024), Alfionita et al., (2024) and Imani (2022), which shows that acupressure at the KI 3 point can be used as an effective complementary therapy to reduce pain and uric acid levels in gout arthritis patients. Research by Zein (2022), shows that the implementation of acupressure for 15-30 minutes given 1 time a day for 3 consecutive days can reduce pain in gout arthritis patients. In line with the results of the research of Ziliwu et al., (2021), it shows that after acupressure therapy, the majority of severe pain decreases to mild pain. The administration of acupressure therapy is carried out by applying physical pressure to several points on the surface of the body which is a place of energy circulation and balance to reduce pain (Komariyah et al., 2019; Revianti & Yanto, 2021). Sunaringtyas et al., (2019) stated that acupressure is a therapy with emphasis on certain points based on the basic science of acupressure which can stimulate nerve cells at the acupressure point which will then be channeled to the spinal medulla to the mesencephalon and the pituitary hypothalamus complex to increase blood and systemic endorphin content. The use of endorphins is to alter neurotransmitters, reduce pain and add a sense of comfort. According to the researcher's assumption, the effect of KI 3 acupressure on pain scales is due to the emphasis on the body point of KI 3 which is able to increase the level of endorphins, physiological related to blood flow and oxygen activity as well as perception in reducing pain intensity.

CONCLUSION

It can be concluded that there was an effect of acupressure of KI 3 point on the pain scale of gout arthritis patients at the UPTD Puskesmas I of the South Denpasar District Health Office. This shows that there is a change in the pain scale before and after acupressure is given KI 3 point acupressure.

ACKNOWLEDGEMENT

With all due respect and humility, the researcher would like to express his deepest appreciation and gratitude to all respondents who were willing to participate in this research.

REFERENCE

- Afnuhazi, R. (2019). Faktor-Faktor Yang Berhubungan Dengan Kejadian Asam Urat Pada Lansia (45 – 70 Tahun). *Human Care Journal*.
- Afrila, D., & Hidayat, A. F. (2020). Pengembangan Modul Mata Kuliah Statistika Pendidikan di Fakultas Keguruan dan Ilmu Pendidikan Universitas Batanghari Jambi. *Jurnal Ilmiah Universitas Batanghari Jambi*, 20(1), 26. <https://doi.org/10.33087/jiubj.v20i1.857>
- Alfionita, D., Adawiyah, S. R., & Windyastuti, R. (2024). Asuhan Keperawatan Gerontik Pada Pasien Gout Arthritis Dengan Intervensi Terapi Akupresure Terhadap Penurunan Intensitas Nyeri Di Panti Werdha Marfati Tangerang. *Gudang Jurnal Ilmu Kesehatan*, 2, 64–80.
- Andarmoyo, S. (2013). *Konsep dan Proses Keperawatan Nyeri*. Ar- Ruzz.
- Herdman, T. H., & Kamitsuru, S. (2018). *NANDA-I Diagnosis Keperawatan Definisi dan Klasifikasi 2018-2020*. Jakarta: EGC.
- Hidayat, A. Aziz Alimul. (2014). *Metode Penelitian Kebidanan dan Teknik Analisis Data*. Jakarta: Salemba Medika.
- Hidayat, A.A.A. (2016). *Pengantar Kebutuhan Dasar Manusia*. Salemba Medika.
- Imani, S. Z. (2022). Penerapan Terapi Akupresure Untuk Menurunkan Nyeri Dan Kadar Asam Urat Pada Pasien Gout Arthritis Di Kelurahan Surobayan, Kecamatan Ambal. *Journal of Economic Perspectives*, 2(1), 1–4.
- Indaryani, I., & Iskandar, S. (2023). Efektivitas Terapi Akupresur terhadap Penurunan Nyeri Persendihan pada Pasien Hiperuresemia. *Jurnal Riset Media Keperawatan*, 6(1), 53–60. <https://doi.org/10.51851/jrmk.v6i1.403>
- Joyce, B., & Hawks, J. H. (2014). *Medical Surgical Nursing*. Jakarta: Salemba Medika.

- Kemenkes RI. (2023). profil Kemenkes RI. In *Kementerian Kesehatan RI*.
- Komariyah, I., Ilmi, B., & Rizani, A. (2019). Pengaruh Rebusan Daun Sirsak Terhadap Penurunan Kadar Asam Urat Dalam Darah Di Desa Takisung Kecamatan Takisung Kabupaten Tanah Laut. *Jurnal Citra Keperawatan*, 6(Vol 6 No 1
- Mahmudi, M., Safitri, D. N. R. P., & Mubin, M. F. (2024). Penurunan nyeri dan kadar asam urat pada penderita Gout Arthritis dengan terapi akupresur pada titik Taixi (KI 3). *Holistic Nursing Care Approach*, 4(1), 1. <https://doi.org/10.26714/hnca.v4i1.12873>
- Majid, Y. A., & Rini, P. S. (2016). Terapi Akupresur Memberikan Rasa Tenang dan Nyaman serta Mampu Menurunkan Tekanan Darah Lansia. *Jurnal Aisyah : Jurnal Ilmu Kesehatan*, 1(1), 79–86. <https://doi.org/10.30604/jika.v1i1.11>
- Murdiyanti, D. (2019a). *Terapi komplementaer konsep dan aplikasi dalam keperawatan*.
- Murdiyanti, D. (2019b). *Terapi Komplementer Konsep Dan Aplikasi Dalam Keperawatan*. Yogyakarta.
- Notoatmojo, S. (2010). *Metodologi Penelitian Kesehatan*. Jakarta:Rineka Cipta.
- Nursalam. (2017). *Metodologi Penelitian Ilmu Keperawatan: Pendekatan Praktis*. Jakarta:Salemba Medika.
- Potter, P. A., & Perry, A. G. (2015). *Fundamental Keperawatan Buku 1 Ed. 7*. Jakarta:Salemba Medika.
- Revianti, I. D., & Yanto, A. (2021). Teknik Akupresur Titik Hegu (LI4) Menurunkan Intensitas Nyeri Dismenore Pada Remaja. *Holistic Nursing Care Approach*, 1(1), 39. <https://doi.org/10.26714/hnca.v1i1.8265>
- Ridwan, M., & Herlina. (2015). Metode Akupresur Untuk Meredakan Nyeri Haid. *Jurnal Kesehatan Metro Sai Wawai*, VIII(1), 51–56.
- Salmiyati, S., & Asnindari, L. N. (2020). Kualitas Hidup Lanjut Usia Penderita Gout. *Jurnal Ilmiah Keperawatan*, 8(2), 23–29. <https://e-jurnal.akperinsada.ac.id/index.php/insada/article/view/187>
- Sari, N., Yuswanto, T. J. A., & Fatmasari, D. (2022). Efektivitas Akupresur Dan Ekstrak Daun Salam Terhadap Kadar Asam Urat Pada Klien Arthritis Gout. *Jurnal Rumpun Ilmu Kesehatan*, 2(1), 7–14. <https://doi.org/10.55606/jrik.v2i1.125>
- Setyowati, H. (2018). *Akupresure Untuk Kesehatan Wanita Berbasis Hasil Penelitian*. Unimma Press.
- Smeltzer, S. C & Barre, B. G. (2017). Buku ajar keperawatan medikal-bedah Brunner & Suddarth. *Journal of Chemical Information and Modeling*.
- Sudjarwo, E., & Solikhah, K. (2023). Pengaruh Penerapan Terapi Akupresur terhadap Intensitas Nyeri Pada Pasien Post Operasi Sectio Caesarea (SC) Acupressure Therapy to Pain Levels in Post-C-section (SC) Patients Poltekkes Kemenkes Malang (Co Author: eddi@poltekkes-malang.ac.id). *Jurnal Manajemen Kesehatan Yayasan Dr. Soetomo*, 9(1), 1–9. www.jurnal.tikes-yrsds.ac.id
- Sugiyono. (2016). *Memahami Penelitian Kualitatif*. Bandung: Alfabeta.
- Sunaringtyas, W., Afrian Nuari, N., & Widhianto. (2019). Pengaruh Terapi Stretching dan Akupressure Terhadap Nyeri Sendi Pada Lansia dengan Gout. *Jurnal Ilmu Kesehatan*, 10(1), 45–52.
- Swarjana, I.K. (2016). *Metodologi Penelitian Kesehatan*. Yogyakarta: Andi
- Tamsuri, A. (2017). *Konsep dan Penatalaksanaan Nyeri*. Jakarta: EGC.
- Taylor, C. N. (2016). *Fundamental of Nursing the Art and Science of Nursing Care (8thed)*. Lippincott Williams & Wilkins.
- Untari, I., & Sulastri. (2021). Perawatan Lansia Dengan Nyeri Akibat Gout. In *Numed*.
- Zein, V. rachma. (2022). Pengaruh Terapi Akupresur Dalam Menurunkan Nyeri Pada Lansia Dengan Asam Urat Di Balai Pelayanan Sosial Dewanata Cilacap. *Sentani Nursing Journal*, 5(1), 1–7.
- Ziliwu, K. H., Zalukhu, F. K., Rifai, M. L., Halawa, D. H., Gultom, M., & Anggeria, E. (2021). 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*, 10(1), 1280–1286.