Health Gate

Volume 4 Number 2 April 2026 ISSN 2986-1098
Homepage: https://healthgate.ppnikotablitar.com

DOI : http://dx.doi.org/10.70111/hg4202
Submitted : January, 18 2026
Reviewed : January, 23 2026
Accepted : February, 16 2026

Empowering Elderly Exercise Groups in *Gout Arthritis* Management Through Education and *Ergonomic Exercise*

Himmatul Ulya[1*] , Erni Setiyorini[2] , Sandi Alfa Wiga Arsa[3] , Anita Rahmawati[4]
[1,2,3,4]Patria Husada Blitar School of Health Sciences
Corresponding author: ulyahimmatul34@gmail.com

ABSTRACT

Gout arthritis is one of the health problems commonly experienced by the elderly and can cause joint pain and limited activity if not managed properly. Lack of knowledge about gout arthritis management is a factor that can worsen the condition. Therefore, education about gout arthritis management and ergonomic exercise is needed as a non-pharmacological management effort that can be done independently. The purpose of this community service program was to increase the knowledge of the elderly exercise group in managing gout arthritis through health education and demonstrations of ergonomic exercises as a promotive and preventive measure. The method used was a lecture providing education on gout arthritis management and ergonomic exercises using leaflets and demonstrations of ergonomic exercises. The target of the activity was members of the elderly exercise group in Bacem Village, Ponggok District, Blitar Regency. The pre-test results showed that 70% of participants were in the adequate knowledge category, and 30% were in the good knowledge category. After the education was provided, the post-test results showed an increase in knowledge, with 85% in the good knowledge category and 15% in the adequate knowledge category. The results of the gout examination showed that 50% of participants had normal gout levels, 45% had high gout levels, and 5% had low gout levels. Education on gout arthritis management and ergonomic exercise proved to be effective in increasing the knowledge of the elderly and is recommended to be implemented continuously in promotive and preventive efforts in the community.

Keywords: Gout Arthritis; Ergonomic Exercise; Health Education

Background

Gout Arthritis is a painful type of arthritis caused by the buildup of uric acid crystals in the joints. This condition is a purine metabolism disorder characterized by serum uric acid levels exceeding 6 mg/dL in women and more than 7 mg/dL in men (1). An increase in uric acid levels in the blood above normal limits is called hyperuricemia. Increased uric acid is triggered by the consumption of foods containing purines, so that excess uric acid levels will cause a buildup of uric acid crystals (2). Gouty arthritis is a degenerative disease that attacks the joints and is most commonly found in the community, especially in the elderly. Elderly people with gouty arthritis often experience recurrence, which is caused by a lack of knowledge and awareness among gouty arthritis sufferers to constantly monitor their uric acid levels. Gouty arthritis not only causes physical disorders, but also affects the quality of life of sufferers, including in terms of independence and social roles in the family (3).

According to data published by the Indonesian Ministry of Health, in 2022 the prevalence of gouty arthritis in Indonesia was recorded at 1.7% of the total population, equivalent to approximately 4.6 million people (Indonesian Ministry of Health, 2023). According to the 2023 Riskesdas, the prevalence of gouty arthritis in Indonesia is increasing to 24.7% depending on the diagnosis and symptoms. Healthcare professionals diagnosed 12.9% of cases, while 25.7% were diagnosed based on symptoms. When viewed by age group, the prevalence was highest among those aged ≥ 75 years (54.8%) (4). In addition, women had a higher prevalence, with 8.46% affected by gouty arthritis, compared to 6.13% of men (5).

Problems found in the exercise group in Bacem Village, Ponggok District, Blitar

Regency, from the results of observations and interviews showed that most members of the exercise group still had limited knowledge about the causes, triggers, and ways to prevent gout. Many of them admitted to frequently consuming foods high in purines, such as offal, certain types of seafood, nuts, and vegetables cooked in coconut milk or blended sauces, without knowing that these foods can worsen gout. On the other hand, although this group regularly participates in weekly exercise activities, some participants do not understand that regular physical activity such as ergonomic exercise can help maintain the body's metabolism, reduce the risk of recurrence, and reduce joint pain.

In view of these problems, a community service program is needed that focuses on increasing knowledge through an educational approach. Education on gout arthritis management can help participants identify trigger foods and choose healthier food alternatives. Meanwhile, ergonomic exercise or gymnastics is a safe physical activity that is suitable for late adulthood to the elderly because the movements are very effective, efficient, light, and do not burden the joints. This combination of education and exercise is expected to increase awareness, foster motivation for healthy living, and serve as a first step for participants to independently control their uric acid levels.

The use of media in health education facilitates the process of conveying information because it attracts more attention. Leaflets are still a popular choice as a health promotion medium due to their advantages of being concise, easy to store, find, and carry anywhere. Even though science and technology have advanced, not all Indonesians are familiar with the internet, so some still feel more comfortable reading directly. Leaflets with simple and easy-to- understand language can help the community receive information (6).

In addition, ergonomic exercise demonstrations were given to introduce safe, light, and beneficial physical activities for people with gouty arthritis. Ergonomic exercise is a form of exercise inspired by the movements of prayer. Prayer movements are known to contain functions of autoregulation and adaptation of the human body, with the brain as the control center. The movements contained in ergonomic exercises are very effective, efficient, and logical because the series of movements are movements that humans have often performed since ancient times until now. The movements in ergonomic exercises can activate uric acid metabolism and loosen stiff joints. These exercises can also induce a relaxation response, so that the release of endorphins inhibits trigger cell activity, closing the gate of the gelatinous substance and reducing or slightly transmitting pain impulses to the brain. This condition can make the elderly more relaxed and reduce the sensation of pain they feel. Especially if done regularly and maintaining a healthy lifestyle to prevent the recurrence of joint pain felt (7).

Through this program, the community, particularly the exercise group in Bacem Village, can gain information, improve their ability to apply a healthy diet, and engage in physical activities more regularly, thereby reducing the risk of recurrence and alleviating joint complaints that they previously considered "normal." Additionally, this program supports ongoing efforts to prevent degenerative diseases at the village level.

Methods

This community service program uses a descriptive evaluative approach, which aims to describe the implementation process and evaluate the results of health education on participants' knowledge of gout arthritis management and ergonomic exercise.

This community service was carried out in three stages: Preparation stage, which included drafting a community service proposal, obtaining partner approval, and conducting a preliminary study. The activity implementation stage was carried out in Bacem Village, Wonodadi District, Blitar Regency. The activity began with filling out a pretest knowledge questionnaire, followed by health education using a lecture method with leaflets as media, and continued with a demonstration of ergonomic exercise movements.The activity evaluation stage was carried out in the form of a post-test knowledge assessment.

In addition to knowledge evaluation, uric acid level checks were also carried out as a form of initial screening to determine the health condition of participants and raise awareness of the importance of early detection. Uric acid level checks were carried out using a uric acid testing device with capillary blood samples. The test results were categorized based on reference values, namely

normal, high, and low uric acid levels according to uric acid testing standards.

The data obtained from the pre-test and post-test knowledge and uric acid level tests were analyzed using descriptive percentage analysis and presented in the form of frequency distribution to illustrate changes in the participants' knowledge and health conditions.

Results

Table 1 Respondent Characteristics

Characteristics	Frequency	Percentage
Gender		
Female	20	100
Age		
Late adulthood (37-45 years)	4	20
Early elderly (46-55 years old)	4	20
Late Elderly (56-65 years old)	10	50
Elderly Manula (>66 years old)	2	10
Employment		
Private	4	20%
Farmers	3	15
Merchants	1	5
Housewife	12	60
Education		
Elementary	3	15
Junior High School	4	20
High School/Vocational School	10	50
Bachelor	3	15
Total	**20**	**100**

From Table 1 above, the characteristics of respondents based on gender are all female. Based on age, the majority are elderly (56-65 years) with 10 people (50%), based on occupation, the majority are housewives with 12 people (60%), and based on education, the majority have a high school/vocational school education with 10 people (50%).

Table 2 Level of Knowledge About Gout Arthritis and Ergonomic Exercise Among Group Exercise Members

No	Category	Pre Test		Post Test	
		Frequency	Percentage	Frequency	Percentage
1.	Good	6	30%	17	85%
2.	Fair	14	70%	3	15%
3.	Less	0	0%	0	0%
	Total	**20**	**100%**	**20**	**100%**

From Table 2 above, the pre-test results show that 14 people (70%) had adequate knowledge, and 6 people (30%) had good knowledge about gouty arthritis and ergonomic exercise. The post-test results show an increase in knowledge, with 17 people (85%) having good knowledge and 3 people (15%) having adequate knowledge about gouty arthritis and ergonomic exercise.

Table 3 Uric Acid Levels of Exercise Group Members

No	Category	Frequency	Percentage
1	Normal	10	50
2.	High	9	45%
3.	low	1	5

Total	20	100

Table 1.3 above shows the results of uric acid level tests for members of the exercise group. The results show that 10 people (50%) had normal uric acid levels, 9 people (45%) had high uric acid levels, and 1 person (5%) had *low* uric acid levels.

Discussion

This community service was carried out by providing education about gouty arthritis and demonstrating ergonomic exercises to the exercise group. The activity began with distributing a pre-test knowledge questionnaire, followed by delivering educational material as an effort to increase knowledge and demonstrating ergonomic exercises, then ending with a post-test knowledge and uric acid level examination as an initial screening. Health counseling was conducted face-to-face using leaflets distributed to all participants. The counseling material consisted of the definition of gouty arthritis, signs and symptoms, risk factors, complications, ways to overcome and manage uric acid, and the uric acid diet. In addition, there was counseling on the definition of ergonomic exercises, their benefits, various movements, and demonstrations of ergonomic exercises.

Based on Table 2, the results of the pre-test on the participants' level of knowledge before health education showed that the majority, namely 14 people (70%), had sufficient knowledge, and 6 people (30%) had good knowledge about gout arthritis and ergonomic exercise. After the health education, the participants' knowledge level increased, as evidenced by the post-test results, which showed that 17 people (85%) had good knowledge and 3 people (15%) had sufficient knowledge about gouty arthritis and ergonomic exercise.

Based on the cross-tabulation results of knowledge level with education level, it was found that the higher the education level, the better the knowledge level. This is in line with previous research stating that education level is related to health knowledge level, where individuals with higher education tend to have better knowledge due to their optimal ability to receive and understand health information (8).

Health education using leaflets plays an important role in conveying information about gout arthritis and ergonomic exercise. The presentation of material in visual and written form makes it easier to understand information about gout arthritis and the role of physical activities such as ergonomic exercise in maintaining joint health. Through this educational process, there is an increase in participants' knowledge as a result of the learning process they experience (9) .

A good level of knowledge can encourage individuals to engage in various positive activities and increase their confidence in taking beneficial actions, thereby contributing to better results. This increase in knowledge also has the potential to influence changes in the attitudes and behaviors of individuals and groups towards a healthier lifestyle. With adequate knowledge, individuals are expected to be able to play an active and responsible role in their own health, including in efforts to control uric acid levels (10).

These results are in line with Hasnah's research (11), which states that health education activities using leaflets show an increase in understanding related to gouty arthritis and dietary patterns that need to be considered before and after counseling. Previous research based on an analysis of the test scores found a significant increase in the community's knowledge before and after the counseling was given (12). The results of this study are in line with previous studies that show an increase in knowledge after health education was conducted (13) .

According to the author, providing education directly through face-to-face meetings with the support of leaflets is effective in increasing respondents' knowledge because this method involves the senses of sight and hearing and is related to the respondents' experiences with gout. This can increase the respondents' interest and enthusiasm in receiving information, which is expected to encourage better behavioral changes in controlling uric acid levels.

Based on Table 3, the results of a single uric acid test conducted during the activity provided an overview of the participants' health conditions in relation to uric acid levels. The results showed that 10 people (50%) had normal uric acid levels, 9 people (45%) had high uric acid levels, and 1 person (5%) had low uric acid levels.

Based on gender, all respondents were female. A number of studies have shown that the prevalence of gouty arthritis tends to be higher in women, especially in the elderly. Women have a higher prevalence, with 8.46% affected by uric acid, compared to 6.13% in men (5). The high incidence of gouty arthritis in elderly women is thought to be related to a number of risk factors, including hormonal changes after menopause, a sedentary lifestyle, and metabolic changes that occur with age. In addition, a tendency to lack physical activity and an unbalanced diet also increase the risk.

Uric acid is the end product of purine metabolism, which comes from the breakdown of nucleic acids in the body's cells and foods that are high in protein (14). Elevated uric acid levels above the normal threshold reflect a state of hyperuricemia, which pathophysiologically provides the basis for the formation of monosodium urate crystals in the joints, triggering inflammation, pain, and limited activity, and playing a role in the onset of gouty arthritis. Meanwhile, uric acid levels within the normal range reflect a balance in purine metabolism, which plays a role in maintaining joint health (15).

The results of this examination indicate that although the majority of respondents are still in a normal condition, uric acid level testing remains important as an early detection measure. Respondents with normal uric acid levels have the potential to experience an increase in uric acid levels if they do not adopt a healthy lifestyle, while respondents with high uric acid levels require education and non-pharmacological interventions to help control their condition. Education is provided not only to respondents with high uric acid levels, but also to those with normal levels as a promotive and preventive measure, to ensure uric acid levels remain within normal limits and prevent complications in the future.

Conclusions and Recommendations

The community service activities carried out in the elderly exercise group in Bacem Village, Ponggok District, Blitar Regency showed that providing health education on gout arthritis management and ergonomic exercise had a positive impact on increasing the knowledge of the elderly. After participating in education accompanied by the use of leaflets and demonstrations of ergonomic exercise, the respondents' understanding of independent gout arthritis management increased by 55%.

The results of uric acid level tests showed variations in the health conditions of the elderly, ranging from normal to elevated levels, indicating the need for continuous health management efforts. Health education and ergonomic exercise play a role as part of promotive and preventive non-pharmacological management in maintaining stable uric acid levels and preventing worsening conditions.

For partners or elderly exercise groups, it is hoped that members of the elderly exercise group can apply the knowledge they have gained by performing ergonomic exercises regularly and maintaining a healthy diet and lifestyle. The application of these habits is expected to help prevent an increase in uric acid levels and support the improvement of the health of the elderly.

For educational institutions and health workers, this community service activity is expected to serve as a reference in implementing similar health education programs. The use of educational methods and demonstrations that are simple, applicable, and easy for the community to understand is considered effective in increasing community understanding and participation in health promotion and prevention efforts.

For future community service activities, it is recommended to add a long-term evaluation related to participants' compliance in performing ergonomic exercises and monitoring changes in uric acid levels. This evaluation is important to assess the effectiveness of the intervention on an ongoing basis and as a basis for developing future community service programs.

Acknowledgment

We would like to express our gratitude to our partners, the members of the Bacem Village elderly exercise group in Ponggok District, Blitar Regency, for their participation and cooperation during the activities. The authors would also like to thank STIKes Patria Husada Blitar and the entire implementation team for their support, guidance, and contributions, which enabled this community service activity to run smoothly.

References

1. Ibrahim, Andika H Marda Prawata RW. Pengaruh Konsumsi Madu Terhadap Kadar Asam Urat pada Pasien Arthtritis Gout di Wilayah Kerja Puskesmas. J Kesehat Saintika Meditory. 2020;3:42–51. https://doi.org/130633/JSM.V3I1.850
2. Vino Rika Nofia, Emira Apriyeni FP. Pendidikan Kesehatan Tentang Gout Arthritis di Puskesmas Dadok Tunggul Hitam Padang. J Abdimas Saintika. 2021;130–7. https://doi.org/10.30633/jas.v3i1.1108
3. Asfarada MR, Sahrir RZ, Yulia A, Iqranil A. Pendidikan Praktis Asam Urat : Meningkatkan Kualitas Hidup Lansia di Panti Werdha Kota Makassar. J Pemberdaya Masy Univ Al Azhar Indones. 2024;06:176–81. https://doi.org/ 10.36722/jpm.v6i3.2864
4. Christina E, A. Yullius Martha. Pengaruh Terapi Senam Lien Tien Kung Terhadap Penurunan Kadar Asam Urat Pada Lansia. J Kesehat dan Pembang. 2025;15(1):152–8. https://doi.org/10.52047/jkp.v15i1.373
5. Alifah Rohiidatul Arham, Safun Rahmanto NMY. Hubungan Antara Kadar Asam Urat Dengan Risiko Jatuh Pada Lansia Di Wilayah Puskesmas Mulyorejo Kota Malang. J Ilmu Kedokt dan Kesehat. 2024;11(8):1570–6. https://doi.org/ 10.33024/jikk.v11i8.14680
6. Gilang Dwi Pratiwi, Vita Lucya P. Efektifitas Penggunaan Media Leaflet dalam Peningkatan Pengetahuan dan Sikap Terhadap Pencegahan Tuberkulosis. J Ilm Keperawatan. 2022;8. https://doi.org/10.33023/jikep.v8i3.1153
7. Umniyah Q, Kesehatan FI, Hafshawaty U, Hasan Z, Ergonomik S. Efektivitas Senam Ergonomik dan Diet Rendah Purin Terhadap Kadar Asam Urat di Desa Mimbaan Kecamatan Panji Situbondo. J Ilmu Kesehat Mandira Cendikia. 2025;4:85–99. https://doi.org/10.70570/jikmc.v4i4.1670
8. Ariga S. Hubungan Antara Tingkat Pendidikan dan Tingkat Pengetahuan dengan Perilaku Hidup Sehat , Berkualitas di Lingkungan Rumah The Relationship Between Education Level and Knowledge Level with Healthy , Quality Life Behavior in the Home Environment. J Pendidikan, Ilmu Sos dan Pengabdi Kpd Masy. 2022;2(3):723–30.
9. Rona Febriyona, Andi Nur Aina Sudirman MN. Efektivitas Pendidikan Kesehatan Melalui Media Leaflet Terhadap Pengetahuan Pada Penderita Gout Arthritis Di Desa Hutuo Kecamatan Limboto. J Kesehat Tambusai. 2024;5(September):9899–906. https://doi.org/10.31004/jkt.v5i3.31262
10. Septi Viantri Kurdaningsih, Rahayu Tri Nuritasari, Elsa Slyvia, Amrina Rasyada, Muhlisin, Meri Rosita AP. Edukasi Dan Senam Ergonomik Sebagai Upaya Mengontrol Kadar Asam Urat Pada Lansia. J Kreat Pengabdi Kpd Masy. 2023;6:2569–80. https://doi.org/ 10.33024/jkpm.v6i6.9490
11. Munir NW, Hasnah. Peningkatan Pengetahuan Tentang Gout Artritis pada Pra-Lansia dan Lansia Melalui Penyuluhan Kesehatan. J Omni Pengabdi Masy. 2024;1(2):46–9.
12. Rizky Nur Azmi, Sinta Ratna Dewi, Munawarah WR. Peningkatan Pengetahuan Masyarakat Samarinda tentang Penyakit Artritis dan Pemeriksaan Kadar Asam Urat. J Ilm Pengabdi Masy. 2022;7(1):66–73. https://doi.org/ 10.33084/pengabdianmu.v7i1.2297
13. Jujuk Endarwati Eka Wardani S. Pendidikan Kesehatan Tentang Preeklampsia Dengan Media Leaflet untuk Meningkatkan Pengetahuan Ibu Hamil. J Keperawatan Silampari. 2023;6:1227–35. https://doi.org/10.31539/jks.v6i2.5423
14. Setiadi TH, Santoso AH, Destra E, Hizkia S, Dafano R, Mahendri P, et al. Peningkatan Kesadaran Masyarakat Terhadap Hiperurisemia Melalui Pemeriksaan Asam Urat dan Edukasi Gaya Hidup Sehat di Yayasan Baptis Cengkareng. J Has Pengabdi Masy Indones. 2025;4. https://doi.org/10.58192/karunia.v4i2.3465
15. Anggraini D. Aspek Klinis Hiperurisemia. Sci J. 2022; https://doi.org/10.56260/sciena.v1i4.59