



The Relationship between Taking Drugs and the Incidence of Gout Arthritis in the Elderly in Tunggulo Village, West Limboto District, Gorontalo Regency

Astri Nikmatul Riska Pomide^{1*}, Rosmin Ilham², Hamna Vony Lasanuddin³

^{1,2,3}Program Studi Ilmu Keperawatan, Fakultas Ilmu Kesehatan, Universitas Muhammadiyah Gorontalo

*Corresponding Author: Email: astripomide@gmail.com

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ABSTRACT

The Relationship between Taking Drugs and the Incidence of Gout Arthritis in the Elderly in Tunggulo Village, West Limboto District, Gorontalo Regency. Thesis. Nursing Study Program, Faculty of Health Sciences, University of Muhammadiyah Gorontalo. Supervised by Rosmin Ilham as the chairman, and as a Member of Hamna Vony Lasanuddin. Gout arthritis is a degenerative disease that is often experienced by the elderly and can be affected by long-term drug consumption. The elderly generally experience various comorbidities so they are at risk of using many types of drugs that can increase uric acid levels. This study aims to determine the relationship between drug consumption and the incidence of gout arthritis in the elderly in Tunggulo Village, West Limboto District, Gorontalo Regency. This study uses a quantitative method with a cross sectional design. The sample totaled 78 respondents who were selected using the purposive sampling technique. Data was collected through questionnaires and analyzed using the Chi-Square test. The results of the study showed that most of the elderly have a high risk of taking drugs and experiencing the incidence of gout arthritis. Bivariate analysis showed that there was a significant relationship between drug consumption and the incidence of gout arthritis ($p < 0.001$).

INTRODUCTION

Aging (elderly) is a phase of life that will definitely be experienced by every human being, as is the case with the aging process. As they age, the elderly will experience various changes, both physically and psychologically. One of the most striking changes is the decline in the body's physiological function, such as the reduction in the ability of the body's organs to perform their functions optimally. This decrease can affect the respiratory, digestive, and muscle and bone strength, which in turn can affect the quality of life of the elderly. In addition, other factors such as pre-existing health conditions, diet, and lifestyle also play a role in accelerating or slowing down the aging process. Therefore, good care and special attention are essential to maintain the health of the elderly so that they can continue to enjoy a good quality life even though they have entered old age. (Zuniawati et al., 2024: 257).

Humans experience various developmental processes in life from the process of becoming babies, children, adolescents, adults, to the elderly. The elderly period is the final stage of the development of human life. Generally, when a person reaches old age, they will experience physical and psychological changes. The stages of development of the elderly are often characterized by degenerative problems, namely functional decline. Generally, the elderly experience physical changes that were previously healthy, strong, to weak physique as a person ages. Individuals also experience the aging process of skin starting to wrinkle, gray hair appears, and are susceptible to diseases because their immunity begins to decrease and vision begins to blur. (Fanani & Afnah, 2025: 162)

The World Health Organization (WHO) estimates that by 2025 the number of elderly people worldwide will reach 1.2 billion people and is predicted to continue to grow to reach 2 billion people by 2050. This increase in life expectancy is one of the main indicators in global public health assessments. As

we age, the elderly often face various physical changes associated with the aging process, known as biological degeneration, which results in a decline in the body's physiological functions. This decrease is usually accompanied by an increased risk of various comorbidities, such as hypertension, diabetes, osteoporosis, and joint disorders. One of the conditions commonly experienced by the elderly is Gout arthritis, which is joint inflammation caused by the accumulation of uric acid crystals in the body. Gout arthritis can cause severe pain, swelling, and limited movement, which of course has a significant effect on the quality of life of the elderly. Therefore, proper treatment and management of this degenerative disease is very important to improve the quality of life of the elderly so that they remain healthy and can do their activities well even though they have entered old age. (Luthfia et al., 2023: 29)

Based on Susenas 2022 to 2024 projections, the number of elderly people in Indonesia shows an increasing trend. In 2022, the proportion of the elderly was recorded at 10,48% with dependency ratio 16,09. The young elderly group (60–69 years old) dominated with 65,56%, as well as more women 51,81% compared to men 48,19% (Andry Poltak L. Girsang, S.ST. et al., 2022). Entering 2023, the percentage of the elderly has risen to 11,75% with dependency ratio 17,08. Although young elderly still dominate, their portion has decreased to 63,59%, while the middle elderly and the elderly have increased. In this period, there were also more elderly women 52,82% compared to men 47,72%, and the number of elderly people in urban areas remains higher than in rural areas (Nindya Riana Sari et al., 2023). In 2024, the proportion of the elderly will increase again to 12% with the dependency ratio fixed at the number 17,08. Young seniors are still the largest group, but the dominance of women and the concentration of the elderly in urban areas are still visible. The Special Region of Yogyakarta consistently occupies a position as the province with the highest percentage of the elderly. Overall, this condition confirms that Indonesia is increasingly moving towards the Ageing Population, which is characterized by an increasing burden on the productive age population and the increasing need for social support and health services for the elderly (Sari et al., 2024).

Based on data from the Gorontalo Provincial Health Office, the number of elderly residents in this area shows an increasing trend from year to year. In 2023, the elderly population was recorded at around 118,500 people. This figure will rise to 124,140 people in 2024, and increase again in 2025 to reach 129,846 people, or around 83.33 percent of the total population. This growth is an indicator that Gorontalo is entering a period of demographic change, where the elderly group plays a greater role in the composition of the population, so it requires special attention related to aspects of health, welfare, and social services in this province (Gorontalo Provincial Health Office 2025)

Based on data in Tunggulo village, West Limboto District, Gorontalo Regency in 2025, the population of Tunggulo Village is recorded at 2,853 people, consisting of 1,432 men and 1,421 women. Most of the population is in the productive age (15–49 years), while the group of children (0–14 years) totals 579 people. The number of elderly people (aged 60 years and above) was recorded as 355 people, consisting of 126 people aged 60–64 years, 107 people aged 65–69 years, 72 people aged 70–74 years, and 50 people aged 75 years and above.

Gout arthritis It is a progressive inflammatory disease of the joints, which occurs due to the deposition of monosodium crystals in the joint tissue, caused by chronic hyperuricemia. This disease generally affects elderly individuals and is one of the most commonly found diseases in the elderly in Indonesia. About 20% of sufferers Gout arthritis You are also at risk of other complications, such as kidney stones and osteoarthritis. In addition, Gout arthritis can lead to a significant decrease in quality of life, as pain in the joints can interfere with daily activities and reduce work productivity. If it is not controlled or handled properly, Gout arthritis can lead to a buildup of monosodium crystals in the veins that not only attack the joints, but can also spread to other parts of the body, such as the kidneys, further worsening the patient's condition and adding to the burden on the health system. (Candra, 2024: 53).

Diseases Gout arthritis It is a metabolic disorder characterized by acute joint inflammation that occurs due to the crystallization of uric acid in the joints. The disease is caused by the accumulation of monosodium crystals of the veins, which are formed from the metabolism of purines in the body. Purines are compounds found in various foods and are also produced by the body as part of cellular processes. When uric acid levels in the blood increase, monosodium urate crystals can form and build up in or around the joints, causing painful inflammation and swelling. Gout attacks usually start suddenly and often affect large joints such as the big toe, but can also occur in other joints. If left untreated, this buildup of uric acid crystals can continue and lead to permanent joint damage as well as other complications, such as kidney stones. Therefore, proper management, including control of uric acid levels and appropriate treatment, is essential to prevent the further development of the disease. (Alfarisi et al., 2024: 26)

Gouth Arthritis is arthritis caused by a buildup of uric acid crystals in the joints. This disease occurs due to a disturbance of purine metabolism in the body. Purines are proteins that undergo metabolism in the body to become uric acid. These uric acid crystals then build up in the joints, causing inflammation and pain. Gout arthritis is the third most common arthritis after osteoarthritis. This disease greatly affects the quality of life of patients who experience it. Gout is characterized by a recurrent recurrence of acute arthritis (arthritis). The recurrence can be attributed to the buildup of large sodium crystals of the veins called chronic nodal

deformity, which is joint damage. In addition, kidney damage can also occur due to excessive consumption of purines. Excessive purines in the body will cause joints to be sore, painful, and inflamed. This shows that Gout arthritis Not only related to joints, but can also affect other organs of the body. Proper handling is indispensable to prevent further impacts.(RJ et al., 2023:158)

Several risk factors can affect the occurrence of gout arthritis. Major factors such as excessive purine consumption from certain foods play a big role. In addition, alcohol consumption, stress, and drug use can also increase the risk of developing this disease. Obesity and hypertension are additional factors that are often found in gout arthritis patients. Genetic factors also play a role in a person's tendency to develop the disease. Therefore, risk factor management is key to disease prevention (RJ et al., 2023: 157).

One of the important factors that contribute to the occurrence of gout arthritis is the uncontrolled use of certain medications. Some types of medications such as diuretics, low-dose aspirin, and antihypertensive drugs are known to increase uric acid levels in the body. This condition is often found in the elderly who take medication for a long time without adequate medical supervision. This phenomenon is known as Polypharmacy, that is, the use of several types of drugs simultaneously for a long time. Polypharmaceuticals are very common among the elderly and can increase the risk of side effects, including gout arthritis attacks. Therefore, strict medical supervision is needed to ensure the safe use of drugs and maintain the optimal quality of life of the elderly (RJ et al., 2023: 157).

In the previous research, according to Sholihah et al. (2024) Gout arthritis is a progressive disease caused by the deposition of monosodium uric crystals (MSU) in the kidneys, joints, and other connective tissues due to chronic hyperuricemia.

However, there have not been many local studies that specifically discuss the relationship between drug consumption and the incidence of Gout arthritis in the elderly in rural areas, especially in Tunggulo village, West Limboto District. Therefore, a quantitative correlational study is needed to examine the extent of the relationship between drug consumption and the incidence of gout arthritis in the elderly in this region. This research is expected to provide a more comprehensive understanding of local risk factors that affect the health of the elderly, as well as provide a basis for more appropriate interventions to reduce the incidence of gout arthritis and improve the quality of life of the elderly in the area.

Lack of education and understanding of the rational use of drugs is one of the main causes of the increased incidence of gout arthritis. Seniors in rural areas in particular tend to take medication based on habits, neighbors' suggestions, or over-the-counter purchases. In fact, It is necessary to pay attention to several things regarding the use of rational drugs to achieve optimal results. Apart from the rational use of drugs carried out by patients, medical personnel also participate in making decisions about the rational selection of drugs. The use of drugs can be said to be rational if it meets the right conditions in choosing a drug, right in the use of drug doses, there are no side effects, no contraindications, no drug interactions, and no polypharmacy.(RJ et al., 2023)

Based on an initial survey conducted in Tunggulo village, West Limboto district, the number of elderly people was 355, the number of elderly people suffering from gout arthritis was 30 people based on interviews with 10 elderly people who suffered from gout, it was found that 7 elderly people if they felt pain symptoms immediately took anti-pain drugs, namely NSAIDs (ibuprofen) and 3 elderly people always consumed herbal medicine to relieve pain.

RESEARCH METHODOLOGY

This study uses a quantitative approach with the type of observational analytical research, as well as a cross-sectional research design. This design allowed researchers to determine the relationship between the free variable (consumption patterns of drugs such as diuretics, aspirin, and anti-tuberculosis drugs) and the bound variable (incidence of gout arthritis) in the elderly, at one observation time without treatment or direct intervention from the researcher.

The quantitative method is used because it is in accordance with the characteristics of the problem that are clear, measurable, and observable, and aims to test the hypothesis that has been formulated. In this study, the data obtained will be processed statistically to find out the significant relationship between the two variables (Scott, 2020).

Design Cross-sectional It was chosen because it is in accordance with the principles of quantitative research which are deductive and based on the philosophy of positivism. The research was conducted using standardized instruments (questionnaires), which will be distributed to elderly respondents at the research site to obtain valid and reliable quantitative data (Scott, 2020).

This study is correlational, meaning that it aims to find out whether or not there is a relationship between the consumption of certain drugs and the incidence of gout arthritis, without intending to conclude a direct cause-and-effect relationship, but rather showing a pattern of statistical linkages between variables (Scott, 2020).

This research has been carried out in Tunggulo Village, West Limboto District, Gorontalo Regency, Gorontalo Province in November-December 2025. The sample in this study was 78 elderly respondents who

met the inclusion and exclusion criteria that had been set.

Data Analysis Techniques

The data that has been collected will be analyzed using the SPSS statistical program. The analysis carried out included univariate analysis and bivariate analysis, without conducting a validity and reliability test because the instruments used had been tested internationally.

Univariate Analysis

Univariate analysis aims to describe the characteristics of respondents and the distribution of each research variable. An independent variable, namely drug consumption history, was measured using the Drug History Questionnaire adopted from Zhang et al. (2012). This instrument includes questions regarding drug consumption, duration of use, frequency of consumption, experience of side effects, and drug-related consultation. Scoring is done by assigning a score to each item, where the maximum score is 20 and the minimum is 1. Based on the total score, respondents' compliance was categorized into three, namely low (1-7), medium (8-14), and high (15-20). Univariate results are presented in the form of frequency and percentage distribution tables, as well as mean or median values according to the type of data.

The dependent variable, namely the incidence of gout, was measured using the Gout Symptom Questionnaire (GSQ) adapted from Taylor et al. (2007). This instrument assesses sudden joint pain, the location of pain, the duration and frequency of attacks, as well as gout-related medical examinations. The total score ranges from 1 to 12, with the classification of low (1-4), medium (5-8), and high (9-12), where higher scores indicate a greater impact of gout. Univariate results are also presented in the form of a distribution table of frequencies, percentages, and data center sizes according to the measurement scale.

Bivariate Analysis

Bivariate analysis was performed to determine the relationship between the history of drug consumption and the incidence of gout. The statistical test used is Chi-Square (χ^2) because both variables are categorical. The significance level used is $\alpha = 0.05$, with decision-making criteria: if the p-value is <0.05 , then there is a significant relationship, while if the p-value is ≥ 0.05 , there is no significant relationship. If the Chi-Square assumption is not met, for example there are cells with a frequency of less than 5, then an alternative Fisher's Exact Test or Monte Carlo Simulation is used as a correction method to obtain a valid p-value.

RESULTS

Respondent Characteristics

Table 1 Characteristics of Respondents

Characteristics	Frequency (N)	Introduce yourself (%)
Age:		
60-64 Years	26	33.3
65-69 Years	24	30.8
70-74 Years	16	20.5
>75 Years	12	15.4
Total	78	100.0
Gender		
Male	38	48.7
Women	40	51.3
Total	78	100.0
Education		
No School	9	11.5
SD	11	14.1
Junior High School	22	28.2
High School	23	29.5
College	13	16.7
Total	78	100.0
Jobs		
Farmer	7	9.0
Not Working	18	23.1

Merchant	7	9.0
IRT	5	6.4
Labor	9	11.5
Retirees	32	41.0
Total	78	100.0

Source: Primary Data 2025

Based on Table 1 of the frequency distribution and characteristics of respondents, the majority of respondents were in the age group of 60–64 years as many as 26 respondents (33.3%), followed by the age of 65-69 years as many as 24 respondents (30.8%). The respondents were mostly female, 40 respondents (51.3%). Based on education level, the most respondents had a high school education of 23 respondents (29.5%), followed by junior high school with 22 respondents (28.2%). Based on occupation, the majority of respondents were retirees as many as 32 respondents (41.0%), while the rest were spread across other job categories.

Univariate Analysis

Distribution Univariate analysis based on drug consumption

Table 2 Distribution of Univariate Analysis of Drug Consumption

Drug Consumption	Frequency	Introduce yourself
Low Risk	17	21.8
High Risk	61	78.2
Total	78	100.0

Source: Primary Data 2025

Based on table 2 of the distribution of drug consumption frequency, most of the respondents were at high risk of drug consumption, namely 61 respondents (78.2%), while respondents with low risk amounted to 17 respondents (21.8%). This shows that most of the elderly in this study are taking medications that are potentially at risk for the occurrence of gout.

Distribution Univariate analysis based on gout incidence

Table 3 Univariate Analysis Distribution of Gout Incidence

Drug Consumption	Frequency	Introduce yourself
Low	35	44.9
Height	43	55.1
Total	78	100.0

Source: Primary Data 2025

Based on table 3 of the distribution of univariate analysis of gout incidence, most of the respondents were in the majority of respondents with a high incidence of gout, namely 43 respondents (55.1%), while respondents with a low incidence of gout amounted to 35 respondents (44.9%). This shows that more than half of the respondents have symptoms of gout that are classified as high.

Bivariate Analysis

Bivariate Analysis of the Relationship between Drug Consumption and the Incidence of Gout Arthritis in the Elderly in Tunggulo Village, West Limboto District, Gorontalo Regency

Table 4. Distribution Bivariate Analysis of the Relationship of Drug Consumption with the Incidence of Gout, Gout, Arthritis

Consumption of Drugs	Incidence of Gout				Total		P value
	Low Impact		High Impact		N	%	
	N	%	N	%			
Low Risk	17	21.8%	0	0%	17	21.8%	<0.001
High Risk	18	23.1%	43	55.1%	61	78.2%	
Total	35	44.9%	43	55.1%	78	100%	

Source: Primary Data 2025

Based on Table 4, there is a relationship between drug consumption and the incidence of gout in respondents in Tunggulo Village. Respondents with a high risk of drug consumption mostly experienced a high incidence of gout as many as 43 respondents (55.1%), while respondents with a low risk of drug consumption did not experience a high incidence of gout (0 respondents). The results of the statistical test showed a $p < 0.001$, which means that there is a statistically significant relationship between drug consumption and the incidence of gout in the study respondents.

DISCUSSION

Univariate Analysis

Drug Consumption

Based on the results of the study, most of the respondents had a high risk of drug consumption, namely 61 respondents (78.2%), while respondents with low risk amounted to 17 respondents (21.8%). This shows that the majority of respondents take medications that are potentially at risk of gout.

The high drug consumption risk category was the largest group, which was 61 respondents (78.2%). This is because respondents in this category tend to take more types of drugs, including antihypertensives, analgesics, NSAIDs, gastric drugs, traditional herbal medicines, and antituberculosis drugs. In addition, they have a longer duration of drug use, most of them more than six months, as well as a regular frequency of consumption, often daily or as recommended by a doctor. This condition indicates the existence of polypharmacy, which is the use of more than one type of drug at the same time, which increases the likelihood of side effects and metabolic complications, including disorders of uric acid metabolism that can trigger gout.

This research is in line with research by Faisal et al. (2023) who stated that the elderly with several chronic diseases tend to use more than one type of drug (polypharmacy). Polypharmacy not only increases the economic burden, but also increases the risk of drug interactions and decreased function of organs such as the kidneys and liver, especially if the use of drugs is carried out without periodic evaluation by medical personnel

In addition to the type, duration, and frequency of drug use, some respondents reported experiencing joint pain after taking certain medications, which is an indication of side effects. This is in accordance with the theory of Assalwa et al. (2020) and Rahayu et al. (2021) which states that drug consumption in the elderly includes type, frequency, duration of use, and adherence, all of which affect the risk of side effects and metabolic complications.

On the other hand, as many as 17 respondents (21.8%) were included in the low drug consumption risk category. Respondents in this group tended to take fewer types of drugs, with low to moderate frequency of use, and shorter duration of use. Most of the respondents experienced minimal side effects of joint pain, rarely received information from health workers about the risks of drugs, and rarely consulted regarding drug use.

The low-risk category is usually due to more controlled use of medications, excluding polypharmacy, and less frequent or as recommended by a physician. Elderly people in this group tend to take medication for mild or occasional illnesses, so the risk of metabolic side effects such as hyperuricemia is lower. This is in line with the theories of WHO (2021) and Rahayu et al. (2021), which state that the elderly who use drugs according to the instructions and the minimum amount of medication have a lower risk of complications, including the risk of gout arthritis. In addition, low-risk respondents rarely experience joint pain after drug consumption and rarely undergo medical consultations, indicating better drug use supervision and safer drug consumption behaviors, so that the risk of long-term side effects and metabolic complications can be minimized.

Incidence of Gout

Based on the results of the study, most of the respondents were in the majority of respondents experiencing a high incidence of gout, namely 43 respondents (55.1%), while respondents with a low incidence of gout amounted to 35 respondents (44.9%). This shows that more than half of the respondents have symptoms of gout that are classified as high.

The category of high gout incidence included 43 respondents (55.1%) who generally reported sudden joint pain, especially in the big toe, ankle, and knee. Pain is often accompanied by redness, heat, and swelling, and the intensity of the pain experienced is severe to interfere with daily activities. Attacks last from 12 hours to several days, with a frequency of more than three times a year. Some respondents have been diagnosed with gout by health workers or had uric acid levels checked, indicating medical supervision of this condition. This pattern indicates that respondents in the high category have a greater risk of complications, including permanent joint damage, tophi formation, and the potential for kidney stones (Lucia Firsty & Mega Anjani Putri, 2020).

This phenomenon is in accordance with the theory of the Concept of Gout Arthritis. Gout arthritis is a type of inflammatory arthritis due to the accumulation of monosodium crystals in the joints, which triggers

an inflammatory immune response (Umar et al., 2023:2). The joints most commonly attacked are the toes (podagra), knees, ankles, and wrists. Risk factors for gout include high uric acid levels in the blood, consumption of foods high in purines, excessive alcohol consumption, obesity, metabolic diseases, and impaired kidney function (Robert Kosasih et al., 2024; Probo Wijayanto & Kurniawan, 2023). In addition, genetic and hormonal factors are thought to play a role in metabolic disorders that cause excessive uric acid production or impaired uric acid production (Lucia Firsty & Mega Anjani Putri, 2020).

The clinical manifestations of acute gout usually appear as sudden pain attacks with swelling, redness, and heat in one or more joints (Taylor et al., 2007). This severe pain can last a few days, then subside, but the crystals of the veins remain buried in the joint tissue, so subsequent attacks are more frequent and intensive. If left untreated, gout can become chronic (chronic tophaceous gout), with the formation of tofi in joints and soft tissues, and cause deformity and permanent joint damage (Probo Wijayanto & Wisnu Kurniawan, 2022).

Pathophysiologically, gout occurs due to serum uric acid levels that exceed normal thresholds (>7 mg/dL in men and >6 mg/dL in women). The buildup of monosodium crystals of the veins in the joints triggers an inflammatory response, which causes pain, redness, and swelling. Repeated attacks can increase the risk of joint damage, formation of inheritance, as well as systemic complications such as venous nephrolithiasis (kidney stones) and chronic kidney disease (Lucia Firsty & Mega Anjani Putri, 2020).

The results of this study are in line with the research of Probo Wijayanto & Kurniawan (2023) which shows that elderly people with gout experience joint pain of varying severity, most of which are in the moderate to severe category. In addition, research by Hasanatin Sholihah et al. (2024) also reported that gout sufferers generally use medications such as paracetamol, colchicine, meloxicam, and allopurinol to reduce pain and lower uric acid levels, which reflects the presence of clinical and recurrent gout events in the elderly group. Another study at the Ngambur Health Center (2022) also stated that age, gender, and weight were significantly related to the incidence of gout arthritis ($p < 0.05$).

The low-gout incidence category consisted of 35 respondents who experienced mild or infrequent pain, with limited pain location, short duration of attacks, and low frequency. Most have never been diagnosed with gout or checked uric acid levels, so the risk of long-term complications is lower than in the group with high symptoms. This pattern suggests that uric acid levels in the bodies of low-category respondents tend to be normal or slightly increased, so clinical manifestations of pain and swelling in the joints rarely appear. Respondents in this category are less likely to experience joint damage or systemic complications.

The results of this study confirm that intensity, frequency of attacks, location of pain, and history of medical examination are important indicators in assessing the incidence of gout in the elderly. Respondents with severe symptoms require more intensive medical management, including the use of gout-lowering drugs such as allopurinol, control of inflammation through non-steroidal anti-inflammatory drugs or joint rest, as well as education on a low-purine diet and prevention of complications (Firsty & Putri, 2020; Taylor et al., 2007).

With this approach, gout management emphasizes not only the management of acute pain, but also long-term prevention to prevent joint damage, plaque formation, and metabolic complications. This is in line with the principles of prevention and treatment in the elderly, which emphasizes risk management based on the severity of symptoms and predisposing factors (Lucia Firsty, 2021).

Bivariate Analysis

Based on the results of the study in Tunggulo Village, most of the respondents with a high risk of drug consumption experienced a high incidence of gout, namely 43 respondents (55.1%), while respondents with a low risk of drug consumption did not experience a high incidence of gout. This shows that there is a significant difference between the elderly group with a high and low risk of drug consumption against the incidence of gout. This difference confirms that drug consumption patterns have an important role in triggering gout attacks, in addition to other factors such as age, genetics, and lifestyle. Elderly people with high drug consumption are more prone to experience increased uric acid levels, so that the joints become more easily inflamed and cause pain typical of gout arthritis.

Theoretically, long-term consumption of medications, especially medications such as thiazide diuretics, loop diuretics, low-dose aspirin, and antituberculosis drugs, can increase uric acid levels in the blood. These drugs inhibit the excretion of uric acid through the kidneys, resulting in accumulation in the body and buildup in the joints. This accumulation triggers the inflammatory process that is characteristic of gout arthritis (Zustika et al., 2025). The elderly have physiological changes that make them more susceptible to drug side effects, such as decreased kidney function, slowed metabolism, and changes in the musculoskeletal system (Ministry of Health of the Republic of Indonesia, 2021; WHO, 2020). This condition makes the accumulation of uric acid due to drug consumption more easily occurs, thus increasing the likelihood of gout attacks.

In addition, the elderly often experience multimorbidity, which is a condition of having more than one chronic disease, so it requires the use of many types of drugs or polypharmacy. Polypharmacy increases the risk of drug interactions, side effects, and metabolic disorders, including the buildup of purines converted into uric acid, which ultimately increases the likelihood of gout occurrence (Assalwa et al., 2020; Faisal et al., 2023). The findings of this study are consistent with the theory that the elderly who take certain medications in the long term have a higher risk of developing gout attacks than those who consume low or minimal medications.

The results of this study are in line with research by (Prahalanitya & Mahawati (2024) which shows that high uric acid levels are more common in women than men in the population of gout patients at the Lebdosari Health Center, Semarang. This is relevant to the results of the study in Tunggulo Village, because most of the female respondents with high drug consumption also showed a higher incidence of gout than men. The findings emphasize that older women who take certain medications, especially diuretics or other chronic medications, have a higher risk of developing gout attacks. Hormonal factors, postmenopausal metabolic changes, and the tendency of older women to take chronic medications explain these findings. Thus, gender differences are an important factor in managing the risk of gout in the elderly.

The results of the statistical test in this study showed a p value of < 0.001 , which confirms that there is a statistically significant relationship between drug consumption and the incidence of gout in the respondents. These findings emphasize the importance of close monitoring of drug use in the elderly, including education about the dosage, frequency, and type of medication taken. Regular evaluations by healthcare workers, such as uric acid level checks, dose adjustments, and monitoring of medication use, are necessary to prevent complications such as gout arthritis. With this approach, the risk of gout attacks can be minimized, the quality of life of the elderly can be better maintained, and the health burden due to gout disease can be significantly reduced (Rahayu et al., 2021; Zustika et al., 2025).

Prevention approaches can also be done through healthy lifestyle education, including a low-purine diet, adequate hydration, and regular light physical activity. A combination of medication consumption management and lifestyle interventions can effectively lower uric acid levels, prevent the accumulation of monosodium uric crystals in the joints, and reduce the frequency of gout attacks in the elderly. Therefore, the results of this study not only confirm the relationship between drug consumption and the incidence of gout, but also provide practical recommendations for health workers and elderly families to carry out comprehensive risk management.

Research Limitations

In this study, researchers realized that there are several limitations that can affect the results. This study did not measure other factors such as diet, family history, or lifestyle that may also influence the incidence of gout. Therefore, further research is recommended to use a larger sample as well as a more comprehensive approach to make the results obtained more accurate.

CONCLUSION

Drug consumption in the elderly is mostly in the category of high, namely 61 respondents (78.2%), while 17 respondents (21.8%) have low risk. The incidence of gout in the elderly is mostly in the high category, namely 43 respondents (55.1%), while 35 respondents (44.9%) experience a low incidence of gout. There was a significant relationship between drug consumption and gout incidence in the elderly ($p < 0.001$), where the elderly with a high risk of drug consumption tended to experience a high incidence of gout, while those at low risk did not experience a high incidence of gout.

SUGGESTIONS

The government and health agencies are expected to increase education and supervision of the use of drugs in the elderly as an effort to prevent the incidence of gout arthritis.

The elderly are advised to use medication rationally according to the recommendations of health professionals to reduce the risk of gout arthritis.

Further research is recommended to examine specific types of drugs and other factors related to gout arthritis with a broader and in-depth research design.

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