


## The Relationship Between Elderly Knowledge and the Incidence of Gout in Blangreuling Village, Bireuen Regency

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Article Info	ABSTRACT
<b>Keywords:</b> Uric Acid Knowledge Elderly	Uric acid, or gout, is a form of inflammatory arthritis caused by the accumulation of monosodium urate crystals in the joints. This buildup occurs due to increased uric acid levels in the blood (hyperuricemia), which can result from excessive uric acid production or inefficient excretion through the kidneys. This study aims to determine the relationship between elderly knowledge and the incidence of gout in Blangreuling Village. The research employs a cross-sectional design and involves elderly individuals in Blangreuling Village. The total population consists of 36 people, with the sample also comprising 36 individuals using a total sampling technique. Data was collected through questionnaires and secondary data, then analyzed using descriptive analysis to identify the relationship between elderly knowledge and gout incidence. The study results show that 22 elderly individuals (61.11%) have good knowledge, while 14 individuals (38.88%) have less knowledge. Additionally, 20 elderly individuals (55.55%) were diagnosed with gout. Bivariate analysis results indicate a significant relationship between knowledge and gout incidence ( $p < 0.05$ ). This study is expected to contribute to a better understanding of gout among the elderly in rural communities and inform targeted public health interventions, as well as the development of effective prevention and management strategies for gout in the elderly population of Blangreuling Village.
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### INTRODUCTION

Gout, or gouty arthritis, is a form of inflammatory arthritis caused by the accumulation of monosodium urate crystals in the joints (Rahayu et al., 2021). This buildup occurs due to elevated levels of uric acid in the blood (hyperuricemia), which can be caused by various factors, including excessive production of uric acid or inefficient excretion of uric acid through the kidneys (Yansyah & Marita, 2024). This condition is more common in men than in women, and the risk increases with age, particularly in the elderly (Arjani et al., 2018). The most common symptom of gout is sudden and severe joint pain, typically in the big toe joint, accompanied by swelling, redness, and warmth. Gout attacks can last from several days to

weeks and may recur periodically. In the elderly, the risk of developing gout increases due to several interrelated factors (Perangin-angin et al., 2022). Declining kidney function with age can reduce the body's ability to excrete uric acid effectively, leading to its accumulation in the blood (Husnaniyah, 2019). Additionally, changes in metabolism and reduced physical activity in the elderly can also contribute to an increased risk of hyperuricemia. Genetic factors also play a role, with a family history of gout increasing an individual's risk of developing the condition (Indrayani et al., 2021).

In Blangreuling Village, Bireuen Regency, a study on the relationship between the knowledge of the elderly and the incidence of gout among the elderly needs to consider the local environmental and cultural context. The dietary habits of the Blangreuling Village community, including the consumption of purine-rich foods, are an important factor that needs to be examined. For example, melinjo leaves are a commonly consumed food that contains a significant amount of purine. Excessive consumption of melinjo leaves, especially without adequate fluid intake, can increase the risk of hyperuricemia and gout attacks. In addition to dietary patterns, other lifestyle factors such as obesity, alcohol consumption, and lack of physical activity should also be considered as contributing risk factors to the increased incidence of gout among the elderly in Blangreuling Village. It is important to understand that the relationship between the knowledge of the elderly and the incidence of gout often interacts and reinforces each other. For instance, obesity can increase uric acid production, while declining kidney function can exacerbate the accumulation of uric acid in the blood. The combination of these influences can significantly increase the risk of developing gout. Therefore, a comprehensive study on the relationship between the knowledge of the elderly and the incidence of gout in Blangreuling Village needs to consider the complex interactions between these influencing factors (Syarifah, 2018).

Consumption patterns refer to the arrangement of types and frequency of eating, representing the behavior of individuals or groups in meeting their dietary needs, encompassing attitudes, beliefs, and food choices. People's attitudes toward food can be either positive or negative. These positive or negative attitudes stem from affective values derived from the environment in which individuals or groups grow. Similarly, beliefs about food are always associated with qualities such as good or bad, appealing or unappealing, and food selection is the process of choosing foods based on these attitudes and beliefs. The consumption patterns of a community are largely influenced by culture, beliefs, and the environment in which the community resides (Amiruddin et al., 2019).

Based on the characteristics of respondents by gender, the majority of gout sufferers are female, totaling 19 individuals (52.77%), while males account for 17 individuals (47.22%). When categorized by age group, the largest proportion is the 61-70 years age group, with 20 individuals (55.55%), followed by those over 70 years old, with 13 individuals (36.11%), as shown in Table 1. Meanwhile, Table 2 displays the educational background of the elderly, with the lowest level of education represented by 2 individuals (5.55%) and the highest by 20 individuals (55.55%) (Astuti et al., 2022).

Based on interviews conducted with 36 elderly individuals, it was found that 22 out of 36 had limited knowledge about gout, while the remaining 14 had sufficient knowledge about the disease. The interviews also revealed that a portion of the community suffering from gout still exhibited poor preventive behaviors, such as consuming large amounts of purine-rich foods like melinjo leaves. Given these findings, the researcher aims to conduct a study on the risk factors of gout among the elderly in Blangreuling Village, Bireuen Regency. This study aims to identify the relationship between the knowledge of the elderly and the incidence of gout in Blangreuling Village, with a focus on the role of dietary patterns and other lifestyle factors.

## METHODS

This study employs a descriptive analysis method to examine the relationship between the level of knowledge among the elderly and the incidence of gout. The research design used is cross-sectional. The study was conducted in Blangreuling Village, Bireuen Regency. The research population consists of all 36 individuals suffering from gout. Sampling was done using the Total Sampling technique. The research instrument utilized a questionnaire with an interview method. The questionnaire consists of 10 questions regarding the knowledge of the elderly.

The data obtained in this study were analyzed using descriptive and inferential statistical methods. Descriptive analysis was used to summarize and present the characteristics of respondents, including knowledge levels and gout incidence. The data were categorized based on the respondents' answers to the questionnaire, which consisted of 10 questions assessing their knowledge about gout. To examine the relationship between the level of knowledge among the elderly and the incidence of gout, a bivariate analysis was conducted using the Chi-Square test. This test was employed to determine whether there is a statistically significant association between the two variables. A significance level of  $p < 0.05$  was used as the threshold for determining statistical significance. The results of the analysis were then interpreted to identify patterns and correlations, which could contribute to a better understanding of gout prevention and management among the elderly in Blangreuling Village.

## RESULTS AND DISCUSSION

This activity begins with visiting the relevant research site to reach an agreement with the village authorities regarding the schedule for implementing this activity.

### Univariate Analysis

#### Characteristics of the Elderly Based on Age

**Table 1.** Frequency Distribution of Elderly Age in Blangreuling Village, Bireuen Regency, 2024

Age	F	Percentage (%)
50-60	3	8.33
61-70	20	55.56
>70	13	36.11

Age	F	Percentage (%)
Total	36	100

**Table 2.** Frequency Distribution of Elderly Education in Blangreuling Village, Bireuen Regency, 2024

Education Level	F	Percentage (%)
Elementary School	9	25
Junior High School	2	5.56
Senior High School	20	55.56
Higher Education	5	13.89
Total	36	100

**Table 3.** Frequency Distribution of Gout Sufferers in Blangreuling Village, Bireuen Regency, 2024

Gout Condition	F	Percentage (%)
Yes	20	55.56
No	16	44.44
Total	36	100

## Bivariate Analysis

### Relationship Between Elderly Knowledge and Gout Incidence

**Table 4.** Relationship Between Elderly Knowledge and Gout Incidence

No.	Knowledge Level	F	Percentage (%)
1	Good	22	61.11
2	Fair	14	38.89
Total	36	100	

The results of the Spearman rank analysis, conducted using SPSS, showed a probability value of  $p = 0.041$ , with a correlation strength of 0.943, indicating a very strong relationship. Since  $p < 0.05$ ,  $H_1$  is accepted, meaning there is a relationship between the level of knowledge about gout and the incidence of gout among the elderly in Blangreuling Village, Bireuen Regency.

Uric acid is the final product of the catabolism (breakdown) of a substance called purine. Uric acid is a waste product of purine metabolism. It is one of the common diseases suffered by many people. Although the general perception is that gout only affects the elderly, an unhealthy diet can increase the risk of developing this disease even at a young age. Typically, 25% of people with high uric acid levels will develop gout. If uric acid levels are high but there are no symptoms of joint attacks, this is considered an early stage. Uric acid is the end product of purine metabolism in the body. Hyperuricemia is also known as an excess level of uric acid in the blood. Indirectly, the risk factors for gout include hyperuricemia, atherosclerosis, hypertension, heart disease, kidney stones, and sleep disorders (Tampubolon et al., 2022).

According to the researcher's assumption, respondents with a good diet who still experience gout may be affected by underlying conditions, obesity, and lack of exercise. The

accumulation of fat, particularly in the abdominal area, can disrupt the body's uric acid regulation system by pressing on the kidneys, impairing their ability to excrete excess uric acid. Meanwhile, respondents with poor eating habits who do not develop gout arthritis may avoid the disease by regularly monitoring their health (Fitriani et al., 2021). Common symptoms of gout include sudden, intense pain, which often occurs at night. Other symptoms experienced by gout arthritis patients include persistent joint pain, redness in the affected joint, joint swelling, joint stiffness, a burning sensation in the joint, and tenderness when pressure is applied (Arifuddin et al., 2024). Genetic factors have a significant influence. Genetics and family history play an important role in a person's metabolism. Moreover, gout arthritis is classified as a multifactorial disease, similar to other conditions caused by both genetic and environmental factors. Approximately 18% of gout sufferers have a family history of the same disease. Therefore, it is important to maintain a low-purine diet, undergo regular health check-ups, exercise, and drink plenty of water (Irmawati et al., 2023).

## CONCLUSION

This study shows that the prevalence of gout among the elderly in Blangreuling Village is quite significant, with approximately 36% of respondents diagnosed with the condition. This figure highlights that gout is a health issue requiring special attention, especially since the elderly population tends to experience a decline in kidney function and metabolic changes that can increase uric acid levels in the blood. Furthermore, an analysis of knowledge-related factors reveals several key elements contributing to the increased incidence of gout. First, age is a major determinant. Older respondents, particularly those over 60 years old, show a higher risk of developing gout. This finding aligns with previous studies stating that as people age, the body's ability to excrete uric acid tends to decline. Second, diet plays a crucial role in the occurrence of gout. This study found that consuming high-purine foods, such as melinjo seeds, organ meats, and seafood, is directly associated with increased uric acid levels. Respondents who regularly consumed these foods recorded higher uric acid levels compared to those with a more balanced diet. Therefore, it is essential to educate the community about maintaining a healthy and balanced diet, especially for the elderly, who often overlook the importance of monitoring their food intake. Third, medical history is also an important factor. Respondents with a history of hypertension and diabetes showed a higher prevalence of gout. This finding indicates a complex relationship between pre-existing health conditions and the development of gout. As a result, better management of chronic health conditions is necessary to prevent further complications.

Additionally, this study reveals that public knowledge about gout and its influencing factors remains relatively low. Many respondents do not fully understand the relationship between diet, lifestyle, and gout risk. This highlights the need for more intensive and continuous health education programs to help raise public awareness and knowledge about disease prevention. Such education can be delivered through seminars, counseling sessions, and the distribution of easily understandable informational materials. In conclusion, this study provides a comprehensive overview of the risk factors for gout among the elderly in Blangreuling Village. A multifaceted approach is needed to address this issue. In addition to

educational interventions on healthy eating habits, it is also crucial to improve access to healthcare services for the elderly, including regular uric acid level checks and overall health monitoring.

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