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Original Article

Relationship Physical Activity and Eating with Gout Arthritis in Sukamaju Village

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ABSTRACT

Arthritis is one of the diseases whose incidence is quite wide and can affect anyone regardless of age and ethnicity. Most cases of Gout arthritis have a primary background, so it requires long-term control of uric acid levels. The purpose of this study was to determine the relationship between physical activity and diet with the incidence of gout arthritis in Sukamaju village. This type of research used quantitative methods with analytical surveys with a cross sectional approach. The sample in this study was 80 respondents, the sampling technique was using random sampling. Data collection techniques used a physical activity questionnaire and dietary pattern questionnaire as well as examination using a uric acid tool. The analysis used univariate and bivariate with the Chi-Square Test. The results of this study showed that there was a relationship between physical activity and diet with gout arthritis with a p-value of 0.000 (α 0.05). Based on research results, prevention of gouty arthritis is very important to improve the quality of life, this can be obtained with education and a low purine diet and a good diet and a healthy lifestyle.

INTRODUCTION

*Gout Atritis*one of the diseases whose incidence rate is quite widespread and can attack anyone regardless of age and ethnicity. Based on experts from the Clinical Research Support Unit (CRSU) Faculty of Medicine, University of Indonesia stated that 35% of the Indonesian population has uric acid levels higher than the normal limit, which is related to a diet high in purines and alcoholic drinks. Inflammatory arthritis is still a disease that many people in the world suffer today (Rampi et al., 2017).

Based on a WHO survey, Indonesia is the 4th largest country in the world whose population suffers from gout. Most cases of gout have a primary cause, so they require long-term control of uric acid levels. Good communication is needed with sufferers to achieve therapy goals. This can be obtained with education and a good low-purine diet. Gouty arthritis is the third most common type of arthritis after osteoarthritis and the extra-articular rheumatism group or is called disease of the load-bearing components of the joints, and inflammation.(Dungga, 2022).

*Gout Atritis*A disease that can reduce the sufferer's quality of life. Elevated uric acid levels in the blood (hyperuricemia) are an important factor in the development of gouty arthritis. Problems arise when monosodium urate (MSU) crystals form in the joints and surrounding tissues. These needle-shaped crystals trigger an inflammatory response that, if continued, causes severe pain that often accompanies it. gout attacks, the causes of high blood uric acid levels can be primary (there are hereditary factors), secondary (external factors such as improper diet or certain diseases), or a mixture of primary and secondary origins(Nasir, 2019).

According to data from the World Health Organization (WHO), in 2017 the prevalence of gouty arthritis in the world was 34.2%, the prevalence in America was 26.3%, the increase in the incidence of gouty arthritis not only occurred in developed countries, but also in developing countries. developing, one of which is Indonesia. According to the results of Riskesdas, the prevalence of gout arthritis in Indonesia is increasing in 2018, the incidence of gout arthritis was 7.3%, as well as in West Java at 32.1%, (Syahradesi. 2020). Meanwhile, data obtained from the Garut District Health Service, gout in the Garut District area in 2020-2021 saw 44,414 cases.

The results of a preliminary study conducted by researchers on 10 people, of which 6 people had insufficient knowledge about gout, arthritis, 4 other people probably had sufficient information about gout. The interview results also showed that some gout sufferers still do not carry out preventative behaviors, including diet and physical activity, such as rarely doing sports activities, staying at home a lot, sitting for long periods of time, and consuming lots of foods that contain high purines. such as often eating sardines, offal, kale in large quantities, foods rich in protein and fat are also often consumed without knowing the limits, by consuming these foods > 3 times a week. According to data obtained from the Sukamaju village health center in the 2021-2022 period, cases of gout arthritis in 2022 reached 357 cases, from the data obtained the number of residents who have gout arthritis aged 40 years to 70 years, where these cases are in the The disease was highest in 6 villages, then in second place was Mekaraya village with 280 cases, and in third position was Nanjungjaya village with 271 cases.

METHOD

This type of research uses a quantitative research design using analytical descriptive methodology with a cross sectional approach on a sample of 80 respondents, with light, moderate and heavy categories for physical activity. Good, sufficient, low for diet and high, normal for gout arthritis.

Based on the results of the validity test of the dietary pattern instrument, which was previously tested by Juhari (2016), testing this instrument using the (r) product moment formula based on the calculation results was at a value of 0.813-0.895 with an r table (0.448), so all questions were declared valid. Then the results of the validity test of the physical activity instrument were tested by Gaby Nursilla (2014). The validity test results were obtained at 0.213-0.464 so that the instrument was declared valid.

RESULTS

Table 1. Frequency Distribution of Gender, Age, Education and Occupation

Category	n	%
Gender		
Man	24	30.0%
Woman	56	70.0%
Age		
30-40 years	30	37.5%
40-50 years	28	35.0%
50-60 years	18	22.5%
60-70 years old	4	5.0%
Education		
elementary school	30	37.5%
Junior High School	28	35.0%
Senior High School	18	22.5%
Bachelor	4	5.0%
Work		
Doesn't work	22	27.5%
Self-employed	17	21.3%
Civil servants	4	5.0%
Laborer	21	26.3%
Farmer	16	20.0%

Based on Table 1, the frequency distribution based on gender is mostly female, 56 people (70.0%), then based on age, the majority are 30-40 years old, namely 30 people (37.5%), then based on education, some The largest number is 30 people with elementary school education and based on work, the majority of those who do not work are 22 people (27.5).

Table 2 Frequency Distribution of Physical Activity

Category	Frequency	Percentage
Light	59	73.8%
Medium	16	20.0%
Heavy	5	6.3%
Total	80	100%

Based on Table 2, the results of observations of physical activity carried out by researchers in Sukamaju village were mostly in the light physical activity category, namely 59 people (73.8%).

Table 3 Frequency Distribution of Dietary Patterns

Category	Frequency	Percentage
Good	5	63.%
Enough	11	13.8%
Poor	64	80.0%
Total	80	100%

Based on Table 3, the results of pattern observationsMost people eat in the poor diet category, namely 64 people (80.0%).

Table 4 Frequency Distribution of Gout Attritis

Category	Frequency	Percentage
High	69	86.2.%
Normal	11	13.8%
Total	80	100%

Based on Table 4, the results from observations of eating patterns are mostly in the poor eating pattern category, namely there are 64 people (80.0%).

Table 5. Relationship between physical activity and gout arthritis

Activity Physique	Gout Attritis Occurrence				Total		***P-Value***
	High		Normal				
	f	%	F	%	f	%	
Light	57	71.2	2	2.5	59	73.8	*0,000*
Medium	12	15	4	5.0	16	20	
Heavy	0	0	5	6.2	5	6.2	
Total	69	86.2	11	13.8	80	100	

Based on table 5 above, it explains that of the 80 respondents in the light physical activity category there were 59 people, and 57 people experienced gout arthritis (71.2%), then in the moderate activity category there were 16 people, and 12 people

experienced gout arthritis (15 .0%), and in the heavy activity category there were 5 people and none had gouty arthritis

Table 6. Relationship between diet and gout arthritis

Activity Physique	Gout Attritis Occurrence				Total		*P-Value*
	Tall		Normal				
	f	%	F	%	f	%	
Light	1	1,2	4	5.0	5	6.2	*0,000*
Medium	2	2.5	6	7.5	8	10.0%	
Heavy	66	82.5	1	1,2	67	83.8	
Total	69	86.2	11	13.8%	80	100	

Based on table 6, it explains that of the 80 respondents in the poor eating pattern category there were 67 people, and 66 people experienced gouty arthritis (82.5%), then in the adequate eating pattern category there were 8 people and 2 people experienced gouty arthritis (2.5%), then in the good diet category there were 5 people and 1 person (1.2%) had gouty arthritis.

DISCUSSION

Description of Physical Activity

The results of this study show that the respondents' physical activity was measured using the Physical Activity Questionnaire. Based on the results of descriptive analysis, it shows that the majority of gout arthritis sufferers in Sukamaju village have light physical activity, namely 59 respondents (73.8%), those who have moderate physical activity, namely 16 respondents (20.0%), and those who have 5 respondents (6.3%) were physically heavy.

According to Syarifuddin et al., (2019)Physical activity is movement of body parts that causes energy expenditure which is very important for maintaining physical and mental health, as well as maintaining the quality of life so that you stay healthy and fit throughout the day. Physical activity requires light, moderate or heavy effort which can lead to improved health if done regularly. Every physical activity carried out requires different energy depending on the duration of intensity and muscle work.

In line with research Emilia Veranica, (2021), with the title the relationship between physical activity and genetic historywith gout at Posyandu Cinta the elderly, with a total of 22 respondents, the physical activity of the elderly was indicated in two categories, namely light and moderate. In the group of cases of hyperuricemia with light physical activity, there were 21 people (61.8%) and the elderly who had hyperuricemia with moderate physical activity, namely 1 person (2.9%).

In accordance with the research results, most respondents experienced the problem of never doing sports,Physical activity requires light, moderate or heavy effort which can lead to improved health if done regularly. Every physical activity carried out requires different energy depending on the duration of intensity and muscle work.

Dietary Overview

The results of this research show that the respondents' eating patterns were measured using a dietary pattern questionnaire, based on the results of descriptive analysis showing that there were good eating patterns, namely 5 people (63%), those who had sufficient eating patterns, namely 11 people (13.8%), and those who had poor diet, namely 64 people (80.0%). According to the researchers' analysis, most of the respondents' diet patterns were not good, they did not pay attention to the components of their diet which consisted of the type of food, the amount of food and the frequency of eating, such as consuming fried food every day and not limiting their intake of foods that contain high levels of purine.

The results of this study are in line withSyarifuddin et al., (2019)that the results of the analysis of the relationship between diet and physical activity with uric acid levels using the Multiple Correlation test to

determine the level of closeness of the relationship between two or more independent variables and the dependent variable and obtained a value of ρ = 0.000, where it can be concluded that there is a significant correlation between diet and physical activity with uric acid levels Eating patterns can be interpreted as the way a person or group of people chooses food and consumes it as a reaction to physiological, psychological, cultural and social influences. Epidemiological studies in recent years have shown that long-term fish consumption can lead to the onset of asymptomatic hyperuricemia and increase the risk of gout.

Relationship between physical activity and the incidence of gouty arthritis

Based on the results of the chi-square test with a p-value of 0.005, a significant value was obtained where Ho was rejected and Ha was accepted, so that it can be concluded from this research that there is a relationship between physical activity and the incidence of gouty arthritis. This is in line with the research conducted(Magfira & Adnani, 2021)stated that physical activity has a significant relationship with uric acid levels.

According to the researchers' analysis, most of the respondents' activities were doing leisure activities, household work, such as cooking, cleaning the house, and also work that was mostly done sitting down, because the average respondent in this study was female and the majority of their jobs were housewives and laborer.

Lack of physical activity such as exercise causes metabolic syndrome and results in insulin resistance which can cause disruption in the uric acid excretion process. As a result, uric acid levels increase because the kidneys cannot excrete uric acid through urine (Darmawan et al., 2016).

Relationship between diet and the incidence of gouty arthritis

Based on the results of statistical tests with a P-Value value of 0.000, a significant value was obtained where Ho was rejected and Ha was accepted, so that it can be concluded that in this study there is a relationship between diet and the incidence of gouty arthritis.In line with research conducted by(Fitriani et al., 2021)that diet affects uric acid levels and research conducted by(Songgigilan et al., 2019)Diet affects uric acid levels. In this study, the researcher assumes that the majority of people in Sukamaju village mostly have bad eating patterns and have uric acid levels above normal. This means there is a relationship between diet and uric acid levels, so this shows that people have low consumption intake. purines are at risk of uric acid levels and people state that they have a habit of not changing their diet after finding out that they are diagnosed with gout and people still continue to consume foods that are sources of purines which should be prohibited after being diagnosed with uric acid levels above normal

Based on the theory explained above, it can be concluded that a person experiencing gouty arthritis can occur because of the diet or food consumed, generally foods that are not balanced, the intake of protein containing too much purine.

CONCLUSION AND RECOMENDATION

Based on the results of this research, there is a relationship between physical activity and eating patterns and the incidence of gouty arthritis in Sukamaju village. Apart from this research, there is a need to develop research related to specific factors that can cause gouty arthritis, such as more specific types of activity.

REFERENCES

Dungga, E.F. (2022). Journal, Jambura Nurisng Dungga, Elvie Febriani Medicine, State Faculty, University. 4(1).

Emilia Veranica. (2021). The Relationship between Physical Activity and Uric Acid Levels in the Elderly: Literature Review of Publication Manuscripts. 5–10.

Fitriani, R., Azzahri, LM, Nurman, M., Nizar, M., Hamidi, S., Studi, P., Health, I., University, M., Tambusai, PT, Nursing, I., Pahlawan, U., & Tambusai, T. (2021). The Relationship Between Diet and Uric Acid Levels (Gouty Arthritis) in Adults Aged 35-49 Years. Nursing Journal, 5(1), 20–27. http://journal.universitaspahlawan.ac.id/index.php/ners

Magfira, N., & Adnani, H. (2021). The Relationship Between Physical Activity and Genetic History and Uric Acid Levels at Posyandu Cinta Elderly. Journal of Nursing and Midwifery Science, 12(2), 396. https://doi.org/10.26751/jikk.v12i2.1033

Nasir, M. (2019). Description of Gout in the Elderly in the Kampung Selayar Area, Makassar City. Journal of Health Media Analysts, 8(2), 78. https://doi.org/10.32382/mak.v8i2.842

Rampi, PR, Assa, YA, & Mewo, YM (2017). Description of Serum Uric Acid Levels in Students with a Body Mass Index ≥23 kg/m2 at the Faculty of Medicine, Sam Ratulangi University. E-Biomedic Journal, 5(2). https://doi.org/10.35790/ebm.5.2.2017.18511

Songgigilan, A.M., Rumengan, I., & Kundre, R. (2019). The Relationship Between Diet and Level of Knowledge and Uric Acid Levels in the Blood in Gouty Arthritis Sufferers at the Ranotana Weru Community Health Center. Journal of Nursing, 7(1), 1–8. https://doi.org/10.35790/jkp.v7i1.24325

Syarifuddin, LA, Taiyeb, AM, & Caronge, MW (2019). The Relationship between Diet and Physical Activity with Uric Acid Levels in the Blood of Gout Sufferers in the Working Area of the Sabbangparu Community Health Center, Wajo Regency. Proceedings of the VI National Seminar on Biology, 372–381.