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Dietary Insights in Gout Management: A Descriptive Exploration of Eating Patterns

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ABSTRACT

Background: Indonesia ranks fourth in the world for the highest gout arthritis cases, accounting for 35% of the population. Gout arthritis is a degenerative disease caused by an excessive accumulation of uric acid in the blood. Uric acid is primarily obtained from food; thus, improper dietary behavior can increase uric acid levels in the blood, triggering sudden attacks. Objective: To describe the dietary behavior patterns among patients with gout in Mangunharjo Village, Adimulyo Sub-district, Kebumen Regency. Method: This study utilized a descriptive approach with a case studies qualitative method, collecting data through interviews, observations, and document analysis. The study involved 17 participants (7 primary and 10 triangulation informants) selected through purposive sampling. Results: The majority of informants were employed as farmers. Knowledge regarding the causes of gout remained low, and in terms of dietary behavior, most participants needed more discipline in adhering to a purine-restricted diet. Environmental factors, economic circumstances, and habits related to purine consumption influenced this behavior. Conclusion: Positive dietary behavior is significantly influenced by knowledge levels. Such behavior also requires support from environmental factors, conditions, family, and the need to alter dietary habits.

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1. INTRODUCTION

Diet is the amount type of food consumed at a particular time. However, in today's modern era, along with the increase in people's living standards, this creates problems, one of which is the change in the lifestyle of each community, mainly processed fast food [1]. Proper nutrition greatly determines a person's health status, and it is possible that improper nutrition can cause various degenerative diseases, especially gout. Gout or gouty arthritis is a type of non-communicable disease (NCD) [2].

Uric acid as part of purine metabolism. However, if metabolism occurs abnormally, there will be a process of accumulation of uric acid crystals in the joints, which causes relatively high pain [3]. In general, uric acid levels in men increase after puberty, while in women, there is an increase after menopause. This is because estrogen increases uric acid excretion through the kidneys [4]. Foods high in purines, fructose, and alcohol can increase uric acid levels. From a genetic standpoint, the genes involved in the biosynthetic pathway, especially those related to uric acid secretion in the kidney, will determine the state of hyperuricemia. Uric acid levels can also be influenced by anthropometry, age, gender, and adiposity [5].

Based on the projection results, the mortality rate for gout sufferers (gouty arthritis) will continue to increase by 55% in 2060 [6]. According to WHO data research, the global prevalence of gout sufferers (gout arthritis) is 34.2% [3] . TR Field, explained that gout (gout arthritis) is a disease that is a priority in world health problems because this disease impacts the quality of life and economy of sufferers [7]. From the results of Basic Health Research in 2018, Indonesia occupies the fourth most prominent position in the world as a population of gout sufferers (gout arthritis), as much as 35% of the total population, which is dominated by men aged 45 years and over. In addition, in the elderly category, Indonesia is ranked 3rd after hypertension and dental problems [8].

The number of cases of gout sufferers in Kebumen, according to the Kebumen District Health Office 2022, from January to September recorded 2,525 of the total population in Kebumen District, with the largest population in the Adimulyo Health Center area with a total of 264 sufferers from the total population of Adimulyo District from January to September. Based on the theory of Lawrence Green, there is a link between health behavior and disease, a way to analyze and evaluate through three factors, including predisposing factors, enabling factors, and reinforcing factors [9].

This research was conducted to determine how the dietary behavior of gout patients in Mangunharjo Village is described.

2. RESEARCH METHOD

This research is descriptive with a qualitative approach by collecting data through interviews, observation, and document review. The location of this research is Mangunharjo Village, Adimulyo Community Health Center, Kebumen Regency, Central Java. Data analysis techniques include reduction, display, and conclusion drawing/verification. The selection of informants was 17 people consisting of 7 primary informants (gout patients) and 10 triangulated informants (patient families and officers) who were determined using a purposive sampling technique.

3. RESULT AND DISCUSSIONS

Table 1. Characteristics of Gout Patients

Patient (P)	Age	M/F	Last Education	Long exposed to UA	UA Before	UA Now	Family History	Work
P1	78	M	SD	4 year	10,2	4,6	Yes	Farmer
P2	72	F	SD	3 year	9,1	8,2	Not	Farmer
P3	58	F	SMP	2 year	7,5	6,9	Yes	Farmer
P4	72	M	SD	4 year	11	12,7	Not	Farmer
P5	54	F	SMA	8 mont	7,2	6,9	Yes	Housewife
P6	25	M	SMA	6 mont	8	7,6	Yes	Farm workers
P7	20	F	SMA	3 mont	7,0	7,6	Yes	Student

Based on observations of the informant's age. This research is in line with Karuniawati, (2018), who stated that age is a cause of gout and the incidence of gout at the age of 20-40 years is 1-2% and is 20 times more common in men, between 40-60 [10]. At the same time, the age that often increases uric acid is 60-80 years, especially for women after menopause.

. The sex of the 7 patients was 4 women and 3 men. In research, Sueni's et al (2021) shows that those who often suffer from gout are generally men because men naturally have higher levels of uric acid in the blood than women [11]. This data cannot be used as a comparison between male and female respondents because of the different numbers and research methods. Apart from that, gout attacks are rare in women because of the hormone estrogen, which helps get rid of uric acid through urine, whereas men do not have high estrogen hormones.

From the results of observations, the majority of work done by gout patients in this study was in the agricultural sector; the other 2 patients were housewives and students. Agriculture is one of the jobs with strenuous activity. This also applies to the work of being a housewife. This research is in line with the results of Fauzi's(2018), research which states that there is a significant relationship between physical activity and uric acid levels [12].

The hereditary history category shows that most of them have a hereditary history. This research is in line with Lestari, W. Y. et al. (2021), which states a relationship between hereditary history and uric acid levels; theoretically, this condition can be passed from parents to children due to excessive purine metabolism [13].

In the socio-cultural category, the research results align with that of Susanti, (2019) states that when the family income increases, the quality of side dishes will also increase; conversely, if the family income decreases, purchasing power will also be low so that they cannot afford to buy food in the amount needed [14]

3.1. Knowledge of Gout Patients

Dietary Knowledge

P1,2,6 *A good diet is a diet that can make the body healthy and make the body feel good to do anything. If the type of food is suitable, eat rice, vegetables, protein, fruit, and white chili drink three times a day. It's like what the midwife said: 1 healthy plate. (There is rice, vegetables, eggs or tempeh and fruit*).

Gout Knowledge

P1-5 *If I'm not mistaken, gout is similar to Srepet's disease (a term used in the Mangunharjo community), such as Pegelinu's disease, due to fatigue. The usual symptoms are stiff joints, pulling pain, and aches and pains...*

P7 *According to the understanding and information I got from the doctor, if I'm wrong, I'm sorry, sis. Gout is a disease that attacks the joints due to excessive purine buildup in the body. Genetics or unhealthy lifestyle and eating patterns, symptoms such as joint pain can cause transmission…*

From these data, it can be concluded that 7 informants know and understand the meaning of eating patterns, frequency, portion sizes, and types of good food. Then, on the definition of gout, symptoms of gout, and pain intervention from 7 informants who understand and understand. However, regarding the cause of gout, of the 7 informants, only 1 informant could explain the cause of gout. The rest only knew that fatigue was the cause of gout. This research is in line with Sari, M.T. (2019), which stated that respondents did not understand the causes of gout and the foods that should be avoided and reduced [15]. This caused informants to behave in a manner that did not limit foods containing purine, and a lack of information influenced this [15]. This research is in line with the analysis of Susanti,. (2019) states that the expertise level affects gout [14].

3.2. Gout Patient's Eating Behavior

Purine Consumption Behavor

a. Purine diet discipline

P1-6 *Every day, I eat as it is; if something needs to be reduced and avoided, I will do it... If I minimize kale, spinach, Wes... (1)…Now that I know that my uric acid is high, I limit it, and I rarely eat it, such as kale, spinach, melinjo leaves, offal, and meat; if you rarely eat fish, I eat a lot at times, and if it's foreign fish, it depends on your wife I bought it, and now he rarely believes it...(3)*

P7 *I often eat with my friends like seblak, chicken noodles, fried rice, and seafood that are close to campus; for vegetables, yes, I eat the vegetables in the food, mostly spinach and mustard greens, sis...(1)The doctor told me to reduce foods high in purines, such as seafood. And I've done that, but I can't be drastic, sis... Because on campus, that's my favorite food, sis... (3)*

The research results showed that of the 7 informants, 5 had implemented a purine diet in a disciplined manner, and the rest had not. Table 1 shows changes in uric acid levels before and after. This aligns with Annita & Sri W.H. (2018) research, which states a relationship between a purine diet and reducing uric acid levels [16]. In implementing the purine diet discipline, there are elements of purine consumption patterns, which consist of types of purine foods, frequency of purine consumption, and portions of purine consumption.

b. Purine consumption patterns

a) Types of consumption of purines

P1-6 *The types are the same as people: …tempeh, tofu,… and fresh and salted fish, for example, kale, spinach, and less. (1) …Before I was exposed to it and found out I had high uric acid, what kind of food did I eat, madam…. 3)*

P7 *..I often eat.....sea food close to campus; for vegetables, yes, I eat vegetables...mostly spinach and mustard greens, sis...(1)…. Because on campus it's my favorite food, miss.…(3)*

b) Frequency of purine consumption

P1-7 *…I eat every day, maybe 2-3 times/day…*

c) Punctuality of meal times

Based on the results of interviews conducted by researchers with 7 informants, 3 informants always ate late, especially in the morning. Here's the explanation:

P1,4 *...Breakfast at 9.30, sometimes there's no time for breakfast, sis...*

P7 *…My eating pattern is indeed irregular, sis. I rarely eat home food, sis….*

Based on the results of interviews conducted by researchers on 7 informants, the portion of purine consumption is as follows:

P1-7 *…2-3 tablespoons of vegetables, sis, for tofu tempe, I usually take 2 slices, sis…*

Based on the results of triangulation carried out on the patient's family, all family informants confirmed the patient's statement. The family also added that the average number of ingredients consumed by 7 informants said they buy 1 bunch of vegetables per day weighing approximately 150 grams and tempeh and

tofu with the type of book-use plastic. Based on the results of observations on the weight of tempeh and tofu, the average weight per pack is 100 grams. In processing tempeh, all family informants said that in cooking, usually, 1 tempeh is divided into 4.

It can be concluded that the results of the study show that the frequency of food consumption that informants often consumed before knowing their high uric acid levels was 5 informants consuming offal > 4x/week, 7 informants consuming meat per day, tempeh and tofu > 2x/day, consuming vegetables containing purine (melinjo leaves, kale, spinach or nuts) 3x/day, 5 informants consumed fish >3x/week and 2 informants 5x/week.

This research aligns with Zeng, et al (2020), stating that one way to deal with gout (gout) is to regulate the types of food that may be eaten. Food has a vital role in production and elimination through the kidneys. Diet determines the level of one's health, and if the diet is correct, then health is maintained as well. Conversely, if the diet is not accurate, it allows a person to get various health problems. Whether or not Eating behavior is good can be determined by knowledge, awareness, economy, environment, and support from health workers and families

From the data analysis obtained regarding the frequency of vegetable side dishes, tempe, and tofu are often consumed with rice (staple food). The frequency of consuming tempe by 7 informants per day was 3-4x/day, while tofu was 1-2x/week. This is because tempeh and tofu have become foods in demand by the people of Indonesia, including the people of Mangunharjo Village. In addition, tempeh and tofu are processed soybean products that are easy, practical, and easy to obtain. Often, consuming tempeh and tofu in excessive amounts is a bad eating habit because the high protein and purine vegetable content can trigger an increase in uric acid levels.

The support of family and friends in maintaining a purine diet is also vital in preserving informant compliance. Based on the theory of Green, behavior can be formed due to reinforcing elements, namely reference groups (health workers, family, or friends). It is also backed by Pranata's theory (2018) that family support is an attitude in determining the care needed by sick family members both informationally, esteem, instrumental (need facilities), and emotionally (comfort, advice) [18].

Elements of Purine Consumption Behavior

a. Risky activity

P1 *... So, around 5 o'clock in the morning, I go to the rice fields, sis. If I leave late, it's not good, sis, because at that time the people here are already leaving for the rice fields, sis...*

P4 *..Before going to the rice field, I have breakfast first; later, it will be hot in the afternoon. I will go to the rice field because my wife is not there, so I will cook it myself, Sis. ...*

P7 *... Since I was in college, I often ate with my friends like ... seafood which is close to campus, ….*

The results of this research show that risky activities are activities that have the potential to increase a person's purine consumption. This is in line with the opinion of Li Patric (2014), who explains that leaving breakfast is a bad habit because it will disrupt meal time . During study or work, the individual will feel hungry, so he eats the available snacks until complete, even though they have high calories. Strenuous physical activity also affects increasing uric acid levels. This is in line with the results of research by Magfira, N. & Hariza, A. (2021), which shows a relationship between physical activity and increased uric acid levels in the blood [19].

b. Environment

P1-6 *...because it's easy to get, sis. Because there are a lot of people looking in my garden, sis…. Then tempeh and you know we can buy it at the nearest stall or from a traveling trader, sis...*

P7 *... affordable location, sis, also close. Secondly, when I take a break, my friends invite me a lot..*

Based on the results of triangulation from the patient's family, the patient's statement was confirmed, and the effects of observations made by researchers showed that every house in the area had a small garden behind and next to the house. Apart from that, the social environment also determines how a person behaves. This shows that every informant's place has a small garden behind and next to the house. The social environment also determines how a person behaves regarding diet and other lifestyle patterns. This is in line with research by Khodijah, et al. (2023), which states that the environment influences a person both from food and lifestyle so that it can influence a person's health status [20].

c. Economy

P1-7 *…. because it's easy to get and cheap, Sis.*

Based on the triangulation results, the patient's family confirmed the patient's statement and added that tofu tempeh was cheap and easy to obtain. At the same time, vegetables were free because they had a garden. This shows that the level of the Economy determines a person's ability to fulfill their needs, thus potentially affecting a person's health level. This is demonstrated by 7 informants: accessible and affordable products

are the products that are most in demand, for example, when consuming vegetables, because of easy access, and most of the informants' backgrounds are secondary crop farmers. This is in line with research by Susanti, N.M.D. & Asrina A.S. (2019) states that as family income increases, the quality of the provision of side dishes also increases; conversely, as family income decreases, purchasing power decreases, resulting in the inability to buy the required amount of food [14].

d. Purine consumption habits

P1-6 *....lots of delicious food...and chicken, beef or goat, I always buy goat meat once a week. If the innards ... really like it... For vegetables, we often ate kale and spinach, sis, because I have a garden, plus it's free, sis.....I like bean vegetables, bitter melon, offal and meat, tempeh and savory ones, sis...*

P7 *... how about it, miss? I don't feel good if my friend asks me to eat. I keep refusing. Because on campus, it's my favorite food, Ms.*

This indicates that changing one's habits to new ones takes a long time. This makes someone reluctant to change their habits, and the level of discipline in the purine diet cannot be carried out consistently. This research aligns with the study's results, which state that habits cannot be changed and formed quickly. However, a person's practice of following a purine diet can be developed if done regularly, with family and environmental support.

4. CONCLUSION AND RECOMMENDATION

A person's eating behavior is closely related to the characteristics of that person and the level of knowledge he has. The dietary behavior of gout patients in Mangunharjo Village obtained from 7 informants showed that they had tried to follow a purine diet but needed to be more consistent in its implementation. The type of purine consumption before getting gout from 7 informants shows that there are no restrictions and rules for consuming foods high in purine. After getting gout, it offers little by little changes, especially in determining the type of food, such as offal and meat. However, the consumption frequency has not shown any changes, and the consumption portion is also not measurable. This is influenced by elements of purine consumption treatment, including (1) risky activities (2) the environment (3) the economy, and (4) habits. So, it is necessary to provide knowledge and approaches about gout and the purine diet through various media regularly and continuously to patients and families to increase good family support and support patients to maintain dietary behavior, keep a purine diet program, and carry out supervision. So as not to misbehave.

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