

Original Research

Relationship between Attitude and Preventive Behavior of Increased Uric Acid Levels in the Elderly



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Article Info	Abstract
Article history: Received: 15 June 2022 Accepted: 14 July 2022	<p><i>Introduction:</i> The increase in the number and life expectancy of the elderly causes problems and various needs of the elderly. Increasing age makes physiological functions decrease due to degenerative processes (aging). One of the diseases experienced by the elderly is gout. The purpose of this study was to analyze the relationship between attitudes and behavior to prevent increased uric acid levels in the elderly.</p> <p><i>Methods:</i> The design of this research is analytic with a cross-sectional approach. The population in this study were all the elderly in Ngudirejo Village, Diwek District, Jombang Regency as many as 120 elderly and the number of samples was 92 respondents using a simple random sampling technique. Collecting data using a questionnaire about attitudes and behavior to prevent an increase in uric acid. Data processing by editing, coding, scoring, tabulating, and analysis using the Spearman Rank Correlation statistical test with an alpha of 0.05.</p> <p><i>Results:</i> The results showed that the attitudes of the elderly were positive as many as 62 respondents (67%) and negative as many as 30 respondents (33%), while for the prevention behavior of increasing uric acid levels both 29 respondents (32%), enough were 42 respondents (46%) and less as many as 21 respondents (22%). The results of the analysis test showed that the value of $p = 0.000$ was smaller than the alpha value of 0.05 so the alternative hypothesis was accepted.</p> <p><i>Conclusion:</i> The conclusion in this study is that there is a relationship between attitudes and behavior to prevent an increase in uric acid levels in the elderly. The results of this study imply the importance of attitudes and behavior in preventing an increase in uric acid levels in the elderly.</p>
Keywords: attitude, behavior, prevention, gout, elderly	

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INTRODUCTION

The increase in the number and life expectancy of the elderly cause problems and various needs of the elderly. Increasing age makes physiological functions decrease due to degenerative processes. One of the diseases experienced by the elderly is uric acid. Uric acid is a substance that must be present in the blood and cannot be zero, because uric acid is a substance produced from the metabolic processes of nucleic acids in the body. In the elderly, most cases of gout are caused by low levels of uric acid excretion from the body, high uric acid production, and a mixture of the two. High uric acid must be handled properly because, in the elderly in particular, it can increase the risk of heart disease, stroke, kidney failure, urinary tract stones, and joint pain [1].

Gout is a disease experienced by the elderly and is a disease that has been known since the time of Hippocrates, often referred to as the disease of kings and kings of disease, because it often appears in groups of people with high socioeconomic abilities who often consume meat. the royal family in ancient times) [2]. However, now this situation is no longer the case. Because gout attacks anyone, men and women who are young to old people or old age [3]. In humans, high blood urate levels are a pathophysiological condition, which in patients with gout, can result in the formation of monosodium urate monohydrate crystals in the synovial fluid [4]. The prevalence of gout in the population in the United State of America is estimated at 13.6 per 100,000 population, while in Indonesia itself it is estimated at 1.6-

13.6/100.000 people, this prevalence increases with increasing age [5]. The results of the 2018 Basic Health Research show that gout in Indonesia is based on a doctor's diagnosis at 7.9% and based on the area of the highest doctor's diagnosis in Aceh Province at 13.26%. The prevalence of joint disease in East Java in 2018 based on doctor's diagnoses was 6.72% [6].

Factors that cause gout are diet, obesity factors, and others. The diagnosis of gout is established based on typical symptoms and the finding of high uric acid levels in the blood [7]. Factors that affect uric acid levels are classified into three: primary factors, secondary factors, and predisposing factors. The primary factor is influenced by genetic factors. The secondary factor can be caused by two things, namely excessive uric acid production and decreased uric acid excretion. The predisposing factors are influenced by age, gender, and climate [8]. Secondary factors can develop with other diseases (obesity, diabetes mellitus, hypertension, polycythemia, leukemia, myeloma, sickle cell anemia, and kidney disease) [9]. The factors mentioned above can increase uric acid levels, if there is an increase in uric acid levels and marked pain in the joints, pain, tenderness, redness, and swelling this condition is known as gout. Gout is a disease that can be controlled even though it cannot be cured, but if left untreated this condition can develop into disabling arthritis [10].

The elderly are individuals who are susceptible to health problems, especially gout, which is associated with a physiological decline in musculoskeletal function and the accumulation of an elderly lifestyle [11]. The

high prevalence of uric acid problems in the elderly demands public attention to the health management of the elderly. Excessive uric acid in the blood can form solid crystals in the joints. Uric acid crystals can cause various diseases or other dangerous conditions. The danger of gout if not treated immediately is to cause joint damage, especially when gout attacks occur for a long time. As a result, the joint tissue will be permanently damaged and can cause the sending to be bent so that it cannot move again [3].

The focus of health services for the elderly has been referring to curative and rehabilitative efforts, whereas through promotive and preventive efforts, prevention of complications of a disease can be done (Miller, 2012). Promotive and preventive efforts can be given to the elderly so that they can recognize health problems that occur in themselves and seek health support as soon as possible if there is a change in health. Research conducted by Lende (2018) states that the elderly have a low level of knowledge in the category of uric acid (66.7%), the elderly with poor eating patterns (70.4%), and the elderly with high uric acid levels. as much as (77.8%) [12]. Therefore, knowledge is very influential in taking attitudes and determining behavior in preventing an increase in uric acid levels in the elderly. The purpose of this study was to determine the relationship between attitudes and behavior to prevent increased uric acid levels in the elderly.

METHODS

The design of this research is analytic with a cross-sectional approach. The population in

this study were all the elderly in Ngudirejo Village, Diwek District, Jombang Regency as many as 120 elderly and the number of samples was 92 respondents using a simple random sampling technique. Collecting data in this study is by using a questionnaire. The attitude variable consists of 15 statements developed by the researcher from affective, cognitive, and conative parameters. Respondents answered the statement by choosing one of 4 options: (4) strongly agree, (3) agree, (2) disagree, and (1) strongly disagree. As for the behavioral variable, there are 15 statements developed by the researcher from the cognitive, affective, and psychomotor parameters. Respondents answered the statement by choosing one of 4 options: (4) always, (3) often, (2) rarely, and (1) never. This questionnaire has been tested for validity and reliability. Data processing by editing, coding, scoring, tabulating, and analysis using the Spearman Rank Correlation statistical test with an alpha of 0.05. This research has passed the ethical test carried out by the Health Research Ethics Commission of Insan Cendekia Medika Jombang with the number 073/KEPK/ICME/IX/2021.

RESULTS

The results of this study describe the respondents based on the characteristics of the respondents, the attitudes of the elderly, the behavior of the elderly in preventing an increase in uric acid levels, and the relationship between attitudes and behavior of the elderly in preventing an increase in uric acid levels.

Based on table 1, most of the respondents are female, as many as 54 respondents (59%), most of the respondents aged between 60-65 years as many as 52 respondents (57%), and the majority of respondents with elementary school education as many as 56 respondents (61%). Based on table 2, most of the respondents have a positive attitude to prevent an increase in uric acid levels as many as 62 respondents (67%). Based on table 3, almost half of the respondents have sufficient preventive behavior to increase uric acid levels as many

as 42 respondents (46%). Based on table 4, most of the respondents have a positive attitude to prevent an increase in uric acid levels as many as 62 respondents (67%), almost half of respondents have a preventive behavior to prevent an increase in uric acid levels enough as many as 42 respondents (46%), and the results of the Spearman correlation analysis test show $p\text{-value} = 0.000 < \alpha \text{ value } 0.05$ so that H1 is accepted, meaning that there is a relationship between attitudes and behavior to prevent an increase in uric acid levels in the elderly.

Table 1

Frequency distribution and percentage of respondent characteristics

Category	Frequency (f)	Percentage (%)
Gender		
Man	38	41
Woman	54	59
Age		
60 - 65	52	57
66 - 71	40	43
Level of education		
Primary school	56	61
Junior high school	31	34
Senior high school	5	5

Table 2

Distribution of frequency and percentage of attitudes to prevent increased uric acid levels

Attitude	Frequency	Percentage
Positive	62	67
Negative	30	33
Total	92	100

Table 3

Distribution of frequency and percentage of preventive behavior of increasing uric acid levels

Behavior	Frequency	Percentage
Good	29	32
Enough	42	46
Not enough	21	22
Total	92	100

Table 4

Distribution of frequency and percentage of preventive behavior of increasing uric acid levels

Attitude	Behavior						Total	
	Good		Enough		Not enough		f	%
	f	%	f	%	f	%		
Positive	23	25	32	35	7	7	62	67
Negative	6	7	10	11	14	15	30	33
Total	29	32	42	46	21	22	92	100

Spearman's rho correlation statistical test p-value = 0,000

DISCUSSION

Based on the results of the study showed that most of the respondents had a positive attitude to prevent the increase in uric acid levels with a total of 62 respondents (67%). Attitude is a tendency to do something positive and negative. The attitude measured by the prevention behavior of increasing uric acid levels includes three components, namely the cognitive component, the affective component, and the conative component. The cognitive component is a component that relates to views and beliefs about things related to how people perceive preventing an increase in uric acid levels by washing hands. The second component is affective which involves feelings or emotions. The emotional reaction of the elderly to the prevention of increased uric acid levels will form a positive or negative attitude. This emotional reaction

is largely determined by a belief in an object, namely the belief in an object that is good or not good, useful or not useful. The third component is conative or the tendency to act to prevent increased levels of uric acid. This component shows the size of the respondent's tendency in this case the elderly to behave in preventing an increase in uric acid levels.

Factors that influence the formation of attitudes are personal experience, the influence of other people who are considered important, the influence of culture, mass media, educational institutions, and religious institutions, and the influence of emotional factors [13]. Attitudes can influence the mind to determine action [14]. Attitudes can also have a major impact on social interaction through social, educational, and cultural contexts [15]. Attitudes become a predisposing factor to perform a certain

behavior, attitude becomes a process of individual awareness. This means that the process of this happens to the individual subjectively and uniquely [16]. The attitude of the elderly toward preventing an increase in uric acid levels can affect a person in taking action or not taking these actions. The more positive a person's attitude is, the greater the likelihood of these actions.

Based on the results of the study, most of the respondents were female. According to Tjokoprawiro (2007), it is explained that one of the causes of Gout Arthritis pain is intrinsic factors including gender and hormones where uric acid levels in men tend to increase because they do not have the hormone estrogen. The results showed that most of the respondents were in the range of 60-65 years. Age is one of the important phenomenological variables in determining and evaluating life, this will determine how a person will behave [17]. The age range of 60-65 years has a mature personality so that it can take precautions related to increased uric acid levels [18].

The results showed that most of the respondents had elementary school education. According to Mubarok (2012), it is explained that education means guidance given by someone to others on something so that they can understand. It is undeniable that the higher a person's education, the easier it is to receive information and the more knowledge he has. On the other hand, if a person's level of education is low, it will hinder the development of a person's attitude towards acceptance, information, and newly introduced values. However, despite having a low level of education, the elderly already

have experience related to preventing an increase in uric acid levels [19].

The results of this study are in line with research conducted by Lestari, A. O. A. W., 2019 with the title the relationship of knowledge and attitudes towards handwashing behavior in the Pegirian Village community which shows the results that most of the people of RW III Pegirian Village already have a positive attitude towards hand washing behavior [20].

The results of this study are supported by research conducted by Indrayani, S., Roesmono, B., & Sulaeman, S., 2021 with the title The Relationship Between Knowledge and Attitudes of the Elderly in Efforts to Prevent Arthritis Gout. prevention of gout arthritis with p-value = 0.002 [21].

Based on the results of the study showed that almost half of the respondents had sufficient preventive behavior to increase uric acid levels as many as 42 respondents (46%). The behavior of the elderly can be influenced by the first factor is gender, most of the respondents are women. This is because women tend to think that the most important thing is to meet their daily needs, regardless of whether the food fulfills nutrition and includes foods that should be reduced or avoided. The second factor that can influence behavior is age. Based on the results of the study, most of the respondents' ages were in the range of 60-65 years. Ages in the range of 60-65 years are very at risk for gout because elderly people are one of the groups that are prone to gout, especially women who have gone through menopause. Therefore, it is very important for the elderly to maintain normal uric acid levels in order to avoid gout disease

such as reducing or limiting foods that contain lots of purines such as foods high in fat, offal, seafood and alcoholic beverages [22]. The third factor is the level of education. Based on the results of the study, most of the respondents had an elementary school education level. Education affects a person's way of thinking, so that it will affect the behavior to be carried out [23]. However, it should be underlined that education is only one of the many other factors that influence a person's behavior. Higher education cannot be used as the only reference to see a person's behavior.

The attack of the disease can of course be very painful and debilitating for the elderly. The theory states that behavior from a biological perspective is an activity or activity of the organism in question [24]. The scope of behavior consists of walking, talking, reacting, and dressing [23]. There are also several factors that can influence the behavior, namely internal and external factors. The results of this study are in line with research conducted by Ardhiatma, F., Rosita, A., & Muji Lestari Ningsih, R. E., 2017 with the title *The Relationship Between Knowledge About Gout Arthritis and Gout Arthritis Prevention Behavior in the Elderly* which shows the results that half of the respondents have sufficient behavior [25].

Based on the results of the study, most of the respondents had a positive attitude to prevent an increase in uric acid levels as many as 62 respondents (67%), almost half of the respondents had a preventive behavior to prevent an increase in uric acid levels enough as many as 42 respondents (46%), and the results of the Spearman correlation analysis

test showed a p-value = $0.000 < 0.05$ alpha value so that H1 is accepted, meaning that there is a relationship between attitude and behavior to prevent an increase in uric acid levels in the elderly. The general view regarding the relationship between attitude and behavior is that it is Postural consistency (verbal attitude) which is a fairly accurate guide to predicting what a person will do when he is faced with an attitude object [26]. The results of this study are supported by research conducted by Simamora, A. C., 2018 with the title *The Relationship of Knowledge and Behavior of the Elderly to the Prevention of Increased Uric Acid* which shows the results that most of the behavior of the elderly towards the prevention of increasing uric acid is good [27]. From the results of the study, it can be assumed that the better the attitude of the elderly towards preventing an increase in uric acid, the better the elderly will be in preventing an increase in uric acid because behavior can show a response that produces an attitude or a view towards preventing an increase in uric acid [28].

CONCLUSION

In the research conducted by the researcher, it was found that most of the respondents had a positive attitude and sufficient preventative behavior from increasing uric acid. There is a relationship between attitude and behavior to prevent an increase in uric acid. Suggestions for health workers to provide education about preventing an increase in uric acid to the elderly to reduce or limit foods that contain lots of purines such as foods high in fat, offal, seafood, and alcoholic beverages, and for the

elderly to regularly check uric acid levels with health workers.

This study provides empirical evidence about the attitudes and behavior of the elderly in preventing an increase in uric acid. The results of this study imply the importance of attitudes and behavior in preventing an increase in uric acid levels in the elderly. The importance of changing attitudes and behavior in preventing an increase in uric acid so that even though they are old they are still in good health.

REFERENCES

- [1] I. D. P. Pramantara, "Asam Urat Pada Lansia," p. Geriatri Lansia Sehat Bahagia, 2019.
- [2] M. B. W. Andriana, Pengantar Gizi Masyarakat. Kencana, 2012.
- [3] R. Fitriana, Cara Cepat Usir Asam Urat. Yogyakarta: Medika, 2015.
- [4] R. E. Ridi and H. Tallima., "Physiological functions and pathogenic potential of uric acid: A review," J. Adv. Res., vol. 8, no. 5, pp. 487-493, 2017, doi: 10.1016/j.jare.2017.03.003.
- [5] Tjokroprawiro, Buku Ajar Ilmu Penyakit Dalam Edisi 2. Surabaya: Universitas Airlangga Press, 2015.
- [6] Kemenkes Republik Indonesia, "Hasil Utama Riset Kesehatan Dasar (RISKESDAS)," Jakarta, 2018.
- [7] W. Nugroho, Keperawatan Gerontik & Geriatrik. Jakarta: EGC, 2014.
- [8] A. Muttaqin, Buku Ajar Asuhan Keperawatan Klien Dengan Gangguan Sistem Imunologi. Jakarta: Salemba Medika, 2008.
- [9] A. Mansjoer et al., Kapita Selekta Kedokteran. Jakarta: EGC, 2011.
- [10] Churlish, Jawaban-Jawaban Alternatif Untuk Arthritis Dan Rheumatic. Yogyakarta: PT Citra Aji Pramana, 2009.
- [11] A. G. Lueckenotte, Gerontologic Nursing. Third edition. Philadelphia: Mosby, 2006.
- [12] M. F. R. Lende, "Hubungan Tingkat Pengetahuan Dan Pola Makan Dengan Kadar Asam Urat Pada Lansia,". Skripsi. Program Studi S1 Ilmu Keperawatan, Fakultas Kesehatan, Universitas Tribhuwana Tunggaladewi Malang, 2018.
- [13] S. Anwar, Sikap Manusia: Teori dan Pengukurannya. Yogyakarta: Pustaka Pelajar, 2007.
- [14] B. Yanti, "Community Knowledge, Attitudes, and Behavior Towards Social Distancing Policy As A Means Of Preventing Transmission Of Covid-19 In Indonesia," J. Adm. Kesehat. Indones., vol. 8, no. 1, pp. 4-14, 2020, doi: 10.20473/jaki.v8i2.2020.4-14.
- [15] N.- Aini and M. D. Purwasari, "Sikap dan Perilaku Pencegahan Covid-19 di Desa Kemuningsari Kidul Kabupaten Jember," J. Kesehat., vol. 8, no. 3, pp. 171-177, 2021, doi: 10.25047/j-kes.v8i3.176.
- [16] M. Wawan, A & Dewi, Teori dan Pengukuran Pengetahuan, Sikap dan Perilaku Manusia. Yogyakarta: Nuha Medika, 2010.
- [17] S. E. Mock & R. P. Eibach, "Aging attitudes moderate the effect of subjective age on psychological well-being: Evidence from a 10-year longitudinal study," Psychol. Aging, vol. 26, no. 4, pp. 979-986, 2011.

- [18] J. H. Huang, R. H. Li, S. L. Huang, H. K. Sia, C. H. Yu, and F. C. Tang, "Gender difference in the relationships between inflammatory markers, serum uric acid and framingham risk score," *Int. J. Environ. Res. Public Health*, vol. 18, no. 13, 2021, doi: 10.3390/ijerph18137103.
- [19] A. M. K. Amrulloh, "Hubungan Peran Keluarga dengan Perilaku Pencegahan peningkatan kadar asam urat pada lansia (Studi Di Dusun Canggon Desa Ngudirejo Kecamatan Diwek Kabupaten Jombang).," 2007.
- [20] A. O. A. W. Lestari, "Relationship Between Knowledge And Attitude To Hand Washing Behavior," *J. Promkes Indones. J. Heal. Promot. Heal. Educ.*, vol. 7, no. 1, pp. 1–11, 2019, doi: 10.20473/jpk.V7.I1.2019.1.
- [21] S. Indrayani, B. Roesmono, and Sulaeman, "Hubungan Antara Pengetahuan Dan Sikap Lansia Dalam Upaya Pencegahan Penyakit Gout Atritis," *J. Pendidik. Keperawatan dan Kebidanan*, vol. 01, no. 1, pp. 27–33, 2021.
- [22] Noviyanti, *Hidup sehat tanpa asam urat*. Yogyakarta: PT Suka Buku, 2015.
- [23] S. Notoatmodjo, *Promosi kesehatan dan perilaku kesehatan*. Jakarta: Rineka Cipta, 2014.
- [24] C. E. Ekpenyong and N. Daniel, "Roles of diets and dietary factors in the pathogenesis, management and prevention of abnormal serum uric acid levels," *PharmaNutrition*, vol. 3, no. 2, pp. 29–45, 2015, doi: 10.1016/j.phanu.2014.12.001.
- [25] F. Ardhiatma, A. Rosita, and R. E. M. Lestariningsih, "Hubungan Antara Pengetahuan Tentang Gout Arthritis Terhadap Perilaku Pencegahan gout Arthritis Pada Lansia," *Glob. Heal. Sci.*, vol. 2, no. 2, pp. 111–116, 2017.
- [26] P. Shulten, J. Thomas, M. Miller, M. Smith, and M. Ahern, "The role of diet in the management of gout: A comparison of knowledge and attitudes to current evidence," *J. Hum. Nutr. Diet.*, vol. 22, no. 1, pp. 3–11, 2009, doi: 10.1111/j.1365-277X.2008.00928.x.
- [27] A. C. R. Simamora, "Hubungan pengetahuan dan perilaku lansia terhadap pencegahan peningkatan asam urat," *J. Ilm. PANNMED*, vol. 11, no. 1, pp. 42–46, 2016.
- [28] E. Madyaningrum, F. M. Kusumaningrum, R. K. Wardani, A. R. Susilaningrum, and A. Ramadhani, "Community gout management program needed for adult people in the rural area," *J. Community Empower. Heal.*, vol. 4, no. 2, p. 125, 2021, doi: 10.22146/jcoemph.61591.