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THE EFFECT OF HEALTH EDUCATION ABOUT LOW PURINE DIET THROUGH VIDEO MEDIA ON THE LEVEL OF KNOWLEDGE OF GOUT PATIENTS

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ABSTRACT

Gout is a disease caused by the accumulation of monosodium grate crystals in the human body. The cause of the high incidence of gout is a lack of knowledge about preventing gout, so efforts can be made with Health Education to increase understanding. This research aims to determine the effect of health education about a low-purine diet delivered through video media on the level of knowledge among gout sufferers. This quantitative research employs a quasi-experimental study design, specifically a "*one-group pretest-posttest design*." A total of 33 respondents were selected to assess their level of knowledge using a questionnaire obtained through accidental sampling. Data collection involved distributing questionnaires to respondents (pretest), where the questionnaire had undergone a validity test with a result of r- calculated > r-table (0.632) and a reliability test with a Cronbach's alpha value of 0.978 therefore, the questionnaire was declared valid and reliable, after which the researchers provided health education regarding a low-purine diet. The questionnaire was then distributed again to the respondents (*posttest*). The data analysis utilized the Wilcoxon Signed Ranks Test. The *Wilcoxon Ranks* test produced statistically significant values (sign. = 0.00 < 0.05). The findings of this study indicate that health education about a low-purine diet delivered through video media influences the level of knowledge among gout sufferers.

Keywords: health education; knowledge level low purine diet; urin acid

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INTRODUCTION

Gout, commonly known as gout, is a disease caused by the accumulation of excess monosodium urate crystals in a person's body. When these crystals accumulate, gout can develop. Nucleic acid found in the nucleus of body cells is one of the components of purine, and it can contribute to the development of gout (Jalina et al, 2018). Uric acid is the final metabolic product of purines, which are components of nucleic acids found in the nuclei of body cells (Simamora, et al, 2019). The prevalence of gout remains high. According to data from the *World Health Organization* (WHO) in the Non-Communicable Disease Country Profile (2011) in Indonesia, the prevalence of gout among individuals aged 55-64 years is approximately 45% among those aged 65-74 years, it is around 51.9%, and among those aged over 75 years, it is around 54.8% (Syarifuddin et al., 2019). In 2016, the number of gout sufferers in Sukoharjo Regency reached 3,245, based on data from 12 Puskesmas (community health centers) in Sukoharjo Regency. In 2017, this number increased by 21.04% to 3,507 sufferers. Indicates that the prevalence of gout in Sukoharjo Regency has remained very high over time (Sukoharjo Regency Health Service, 2019).

According to research conducted by (Nuranti et al., 2020) The research titled "The Effect of Health Education and the Use of Bay Leaves on Patients with Gout in the RT 10 Area of the Pure Sub-District" shows that the study focused on health education, specifically on how to

prepare a bay leaf decoction as an herbal remedy for reducing uric acid levels. The research emphasized the importance of a low-purine diet, which significantly impacts people's lifestyles and helps reduce uric acid levels through proper dietary practices. The findings indicate that the prevalence of gout remains high, based on the results of a preliminary study conducted on February 13, 2024, which stated that the population of gout sufferers in Jetis Village, Baki, was 50 people.

Diet is a significant factor in causing gout because purine, a substance found in food, can lead to the condition. Consuming foods high in purine can increase the risk of gout. Additionally, there is a lack of public awareness regarding eating patterns that contain purines, including the frequency, type, and amount of food consumed (Dungga, 2022). The food consumed by people is not balanced and includes a high intake of protein-rich purines found in offal sardines, kale, and spinach (Songgigilan et al., 2019). Public knowledge about treating gout is minimal, and many people are indifferent toward their health. Some believe it is just a common illness and that they can recover independently. Research conducted in the United States by Harrold aimed to determine the level of patient knowledge regarding gouty arthritis and involved 240 patients. The study found that only 12% of the patients were aware of the impact of certain foods, such as seafood, meat, and alcohol, that could trigger gout. The lack of knowledge about diet and other factors that can cause gout is one reason for the increasing incidence of the disease, highlighting the need for greater attention to health education for gout patients (Algifari et al., 2020).

Health education is crucial for reducing gout cases by increasing public awareness of healthy eating patterns. Education can be delivered through various media, such as videos, to enhance people's understanding and awareness of gout and its prevention. The health education received by respondents provided them with new knowledge and experiences related to gout (Kusumayanti,.et all, 2015);(Srimawati et al., 2022). Then, after receiving health education, the community can implement and introduce a low-purine diet to families at home, so that it can indirectly improve public health in managing gout. Based on the above background, researchers are interested in analyzing "The Effect of Health Education Using Video Media on the Level of Knowledge of Gout Sufferers".

The urgency of this research lies in addressing the limitations of previous studies, which provided health education by using booklet media to increase insight into gout and enhance knowledge among gout sufferers (Karsono et al., 2023). Meanwhile, this research explains the provision of more specific health education regarding a low-purine diet using video media, which is more engaging and can increase the knowledge of gout sufferers who have difficulty reading. Additionally, there is an explanation of how to choose a low-purine diet for gout sufferers. Therefore, this research aims to determine the effect of health education about a low-purine diet delivered through video media on the level of knowledge of gout sufferers.

METHOD

This research employs a quasi-experimental method with a *one-group pre-test* and *post-test* design. The independent variable in this study is Health Education on a low-purine diet, while the dependent variable is the level of knowledge related to minimizing gout recurrence. The study involved a single group that received Health Education on a low-purine diet. The research was conducted in Jetis, Baki, Sukoharjo village from early June to late July 2024, with a population of 50 respondents. This population consisted of all residents of Jetis Baki Sukoharjo village who attended the integrated service center for the elderly. A total of 33

respondents were selected based on specific criteria using purposive sampling. This study has sample inclusion criteria: (1) Results of checking uric acid levels before treatment in men with ordinary values of 2.5-7.0 mg/dl while in women with values of 1.5-6.0 mg/dl; (2) Willing to become a respondent by signing the Informed Consent sheet; (3) Respondents can carry out independent activities and have a cellphone and with sample exclusion criteria: (1) Respondents who have comorbidities; (2) Respondents cannot carry out activities independently. The research instrument used was a questionnaire on gout diet knowledge (Alshammari & Mujtaba, 2017) dan (Li et al., 2013) With a total of 37 questions and videos regarding a low purine diet, both of which were tested for validity and reliability, the r-count results were higher than the r-table *p-value* (0.632), confirming their validity. All question items had r-count results ranging from 0.632 to 0.984, and the Cronbach's alpha value was 0.978. This research involved gathering respondents, conducting a pretest to measure uric acid levels, and monitoring their adherence to a low-purine diet via a WhatsApp group for 30 days. A posttest was followed to reassess uric acid levels. The data were analyzed through univariate and bivariate methods, with the *Wilcoxon signed-rank* test applied due to non-normal data distribution as indicated by the Shapiro-Wilk test. This research received ethical approval from the Health Research Ethics Committee (KEPK) of Dr. Moewardi Hospital with the number 1.571/VI/HREC/2024.

RESULT

Table 1.
respondent characteristics (n=33)

variable	f	%
Age		
<20 year	1	2.9
21-40 year	11	31.4
41-60 year	14	40.0
>60 year	7	20.0
Gender		
Man	1	2.9
Woman	32	91.4
Education		
Elementary School	15	45.5
Junior High School	7	21.2
Senior High School	8	24.2
Diploma	1	3.0
No School	2	6.1
Work		
Laborer	9	27.3
IRT	24	72.7

The results of data analysis in Table 1 regarding the characteristics of respondents show that the majority of respondents were aged 41 to 60 years, with 14 respondents (40.0%). Most respondents were female, with 32 respondents (91.3%). Regarding education level, the highest number of respondents had an elementary school education, with 14 respondents (45.5%). Most respondents were housewives (72.7%).

Table 2.
Distribution of Knowledge Level Values Regarding a Low Purine Diet Pretest and Posttest Results After Health Education (N=33)

Knowledge *Pret-posttest*	*Pretest*		*Posttest*	
	f	%	f	%
Not enough	0	0	0	0
Enough	4	12.1	0	0
Good	29	87.9	33	100

Table 2 shows that after data collection was carried out according to variable criteria, the level of knowledge about low purine diets before and after receiving Health Education increased. The number of respondents with sufficient knowledge rose from 29 (87.9%) to 33 (100.0%), while the number of respondents with insufficient knowledge decreased from 4 (12.1%) to 0 (0%).

Table 3.
Pre and post-test analysis results knowledge about a low-purine diet for gout sufferers

Knowledge	(Mean ± SD)	difference (SD)	*p-value*
Pre-test	27.82 ± 4.333	3.51 (-1.727)	0.00
Post-test	31.33 ± 2.606		

Based on Table 3, the significance value (*p-value*) is 0.00, which is smaller than 0.05. Therefore, H0 is rejected, indicating that Health Education about a low purine diet using video media has an influence on the level of knowledge among gout sufferers.

DISCUSSION

Uric acid is the final product of purine metabolism. Gout results from repeated attacks of joint inflammation (Husnaniyah, 2019). According to this research, the majority of respondents were elderly, aged 41 to 60 years, with 14 respondents (40.0%) in this age range aging is an unavoidable process that every individual will experience (Tanaya & Yuniartika, 2023). In line with research (Syenshie Virgini Wetik & Cyntia Theresia Lumintang, 2021) that most of the respondents in his study were 46-65 years old (80%) and had a higher risk of increasing gout disease. People over the age of 40 are very susceptible to increased uric acid levels due to changes in metabolism. These metabolic changes include changes in kidney function and trigger gout arthritis (Syenshie Virgini Wetik & Cyntia Theresia Lumintang, 2021). Consistent with other research, gout predominantly affects the elderly (Nasir, 2017). A similar thing was also found in the study (Yoga et al., 2024) which showed that the majority of respondents in his study were > 60 years old, as many as 35 respondents (53%).

Gender is one of the characteristics considered in this study. According to (Nur et al., 2024) the results of this study indicate that most respondents are female, namely 32 people (91.3%). This is in line with research conducted by (Yoga et al., 2024) which stated that 56.1% of respondents in their study were female. Likewise, in research (Syenshie Virgini Wetik & Cyntia Theresia Lumintang, 2021) which shows that the gender that experiences the most increase in uric acid is women as much as 63.4%. Research by (Oktavia et al., 2023) also showed that 80.8% of respondents in the study were women and experienced more cases of gout arthritis. In research (Nasir, 2017) it was also found that most elderly female respondents had high uric acid levels. Women are more susceptible to gout than men, even though these men maintain a good diet. This is influenced by significant changes in the hormone estrogen that occur in women over the age of 40 and have an impact on joint health (Syenshie Virgini Wetik & Cyntia Theresia Lumintang, 2021). The distribution of elderly women is higher compared to older women because the life expectancy of older women is higher (Yuniartika & Bima Murti, 2020).

Based on this research, the characteristics of the respondents with the most recent education are as follows: the majority have completed elementary school, totaling 14 respondents (45.5%). This is in line with research (Amilia & Margowati, 2018) which shows that most respondents in their study still have elementary school education (60%). A similar thing was also found in the study (Oktavia et al., 2023) which showed that 53.8% of respondents in the study had a primary school education. The large number of respondents with only an elementary school education makes it challenging to acquire the desired knowledge,

particularly given the current conditions in Indonesia. Generally, as a person's education level increases, their knowledge is expected to grow. However, it is significant to note that a lower level of education does not necessarily equate to low knowledge (Husnaniyah, 2019).

Most of the respondents in this study were housewife, totaling 24 respondents (72.7%). This is also in line with research (Marhamah & Setyawati, 2022) which shows that most respondents in their research have jobs as housewives, which is 60%. Likewise in (Marhamah et al., 2023) the most jobs in their research are housewives, which is 46.7%. Given their background, many of whom have only an elementary school education, it is challenging for them to find work, leading them to become housewife. Despite their work situation, it is significant that respondents still have access to the necessary information, including Health Education about a low-purine diet for gout sufferers. The respondents' roles as housewives are conducive to receiving Health Education, which can help improve their knowledge regarding individual and family health. This research aligns with previous studies (Artini, Rahmi., Maliya, A., Purwanti, 2016). That Health Education is a change in behaviour that is not only influenced by transfer theory but arises because of the awareness of individuals, groups, or communities to obtain information.

Gout is a commonly heard term, but many people lack a clear understanding of it (Rahmadani et al., 2024). Many people do not understand gout due to insufficient knowledge about the condition and how to prevent it. Knowledge is an either factor influencing individual health behaviour (Ruben, 2023). Based on the research results, the value of knowledge about a low-purine diet after receiving Health Education shows a tendency to increase. The percentage of respondents with good knowledge increased to 87.9%. Following health education, there was a shift from sufficient knowledge (0%) to good knowledge (100%). These findings are consistent with the research (Agustina et al., 2022) which demonstrated that before health education, respondents knowledge was in the poor category, however, it improved to the bravo category afterward. Therefore, it can be concluded that the quality of knowledge increases after receiving Health Education. Respondents knowledge regarding a low-purine diet provides an alternative for reducing uric acid levels in the body. Based on the research results, the *Wilcoxon Signed Ranks* Test yielded a *p-value* of 0.00 (*p-value* < 0.05). Consequently, H0 is rejected and Ha is accepted, indicating that Health Education using video media increased knowledge among gout sufferers. The positive impact on participants knowledge is attributed to the learning process involved in the administered tests, as most human knowledge is acquired through visual and auditory means (Astrilian & Yuniartika, 2024).

Health promotion initiatives, such as health education, are potent efforts to improve healthy living habits. Government policies that support these initiatives can further enhance their impact (Yuniartika et al., 2022). Media selection is crucial for health promotion because it can enhance the target audience's acceptance of the material lapsed. Generally, health education efforts utilize various forms of media, such as posters, leaflets, and photos. In this study, video was used as the medium, offering the advantage of being an engaging and easily understandable tool for respondents in health education. According to researchers, health education positively impacts participants by providing them with knowledge and information that can be applied to everyday life (Ardani & Yuniartika, 2024). Elderly individuals with a high level of knowledge significantly impact their understanding of gout. Research shows that health education on a low-purine diet via video media effectively increases knowledge. This method enhances understanding and helps prevent gout-related complications, including the

management of a low-purine diet. When implemented effectively by respondents, families, and health workers, this effort can also contribute to improving public health.

CONCLUSION

Based on the research objectives and the results obtained from studying the influence of low-purine diet health education via video media on knowledge, the researchers drew the following conclusions: Characteristics of the 33 respondents, most are aged 41-60 years, with 14 respondents (40.0%). The majority are women, with 32 respondents (91.4%). Regarding education, most respondents have an elementary school (SD) education, with 15 respondents (45.5%). Additionally, most respondents are housewives, with 24 individuals (72.2%).

The level of knowledge about a low-purine diet before receiving health education was categorized as poor for 12.1% of respondents, while 87.9% had good knowledge. After receiving health education, there was a noticeable improvement. The number of respondents in the bravo knowledge category increased from 29 (87.9%) in the *pretest* to 33 (100.0%) in the *posttest*. Based on statistical tests using the *Wilcoxon Test*, a p-value of 0.00 was obtained. Therefore, it was concluded that health education delivered via video on a low-purine diet significantly improved the level of knowledge among gout sufferers.

REFERENCES

Agustina, A. N., Dewi, S. U., Casman, C., Kristianingsih, T., Anidhaa, H., Maulana, D., & Ardiansyah, F. (2022). Efforts to Improve Knowledge About Uric Acid Among Residents of RT.02/03, Pondok Labu Village. *Indonesia Berdaya*, *4*(1), 397–404. https://doi.org/10.47679/ib.2023417

Algifari, M. R. N., Darma, S., & Reagan, M. (2020). Knowledge of Gout Arthritis in Patients at the Rheumatology Polyclinic, Dr. Mohammad Hoesin General Hospital Palembang. *Sriwijaya Journal of Medicine*, *3*(1), 57–64. https://doi.org/10.32539/sjm.v3i1.128

Alshammari, I., & Mujtaba, M. (2017). Public Knowledge and Awareness about Gout: A Cross-sectional Study in Qatar. *Journal of Pharmaceutical Research International*, *17*(4), 1–11. https://doi.org/10.9734/jpri/2017/34375

Amilia, & Margowati. (2018). The Relationship Between Knowledge About Gout Arthritis and Gout Arthritis Prevention Behavior in the Elderly. *Global Health Science*, *2*(2), 111–116.

Ardani, D., & Yuniartika, W. (2024). Impact of an educational pain management programme on nurses' pain knowledge and attitudes in Kenya. *International Journal of Palliative Nursing*, *07*(7), 260–266. https://doi.org/10.12968/ijpn.2013.19.7.341

Artini, Rahmi., Maliya, A., Purwanti, O. (2016). Differences in the Effects of Health Education Using Leaflet and Booklet Media on Community Knowledge in Trangsan Gatak Sukoharjo Village. In *Naskah Publikasi*.

Astrilian, T., & Yuniartika, W. (2024). Community Health Education: Management of Gout Arthritis Care Using Booklet Media. *Holistik Jurnal Kesehatan*, *18*(1), 18–25. https://doi.org/10.33024/hjk.v18i1.213

Dungga, E. F. (2022). *Journal, Jambura Nurisng Dungga, Elvie Febriani Kedokteran, Fakultas Negeri, Universitas*. *4*(1).

Husnaniyah, D. (2019). Overview of Elderly Knowledge About Uric Acid Diet in the Kertasemaya Health Center Work Area in 2018. *Jurnal Surya*, *11*(02), 24–28. https://doi.org/10.38040/js.v11i02.35

Karsono, S. D., Utami, K. D., Mustaming, & Pramono, J. S. (2023). The Effect of Providing Low Purine Diet Education with Booklet Media on Knowledge and Purine Intake in Gouty Arthritis Sufferers in the Pasundan Community Health Center Working Area. *Formosa Journal of Science and Technology*, *2*(9), 2333–2344. https://doi.org/10.55927/fjst.v2i9.5723

Li, Q. H., Dai, L., Li, Z. X., Liu, H. J., Zou, C. J., Ou-Yang, X., Lu, M., Li, T., Li, Y. H., Mo, Y. Q., & Schumacher, H. R. (2013). Questionnaire survey evaluating disease-related knowledge for 149 primary gout patients and 184 doctors in South China. *Clinical Rheumatology*, *32*(11), 1633–1640. https://doi.org/10.1007/s10067-013-2333-0

Marhamah, E., Rusminah, Sochibah, N., & Faudy, A. (2023). Ergonomic Gymnastics with Changes in Uric Acid Levels in Elderly with Gout Arthritis. *Jurnal Keperawatan Karya Bhakti*, *9*(2), 1–15.

Marhamah, E., & Setyawati, N. (2022). Literature Review: Application of Warm Compress with Ginger Extract on Joint Pain Intensity in Elderly Patients with Gout Arthritis. *Jurnal Keperawatan Karya Bhakti*, *8*(2), 85–94.

Nasir, M. (2017). *Gambaran Asam Urat Pada Lansia Di Wilayah Kampung Selayar Kota Makassar*. *8*(2), 78–82.

Nur, D., Sari, P., Maulidia Septimar, Z., Melati, D. R., Universitas, D., Madani, Y., Program, M., S1, S., & Universitas, K. (2024). The Relationship Between Dietary Knowledge and Gout in Adult. *Gudang Jurnal Ilmu Kesehatan* , 2 (1), 36-40. *Februari*, *2*(2018), 36–40.

Nuranti, Z., Maimaznah, M., & Anggraini, A. A. (2020). The Effect of Health Education and Bay Leaf Administration on Patients with Uric Acid in RT 10 Murni Village. *Jurnal Abdimas Kesehatan (JAK)*, *2*(1), 50. https://doi.org/10.36565/jak.v2i1.90

Oktavia, H., Yustati, E., & Yansyah, E. joni. (2023). Effectiveness of Health Counseling Using Audio Visual Media on Elderly Knowledge of Gout Arthritis. *Indonesia Journal Of Health and Medical*, *3*(4), 234–242. http://ijohm.rcipublisher.org/index.php/ijohm/article/view/254

Rahmadani, D., Manullang, I., Riswan, L. ., Julia Simanjuntak, L., Minanda, W., & M. Noer, R. (2024). Prevention of Gout Arthritis Through Low Purine Diet and Cinnamon Warm Compresses at Posyandu Hang Tuah, Kampung Tua Bakau Serip. *Media Abdimas*, *3*(3), 13–17. https://doi.org/10.37817/mediaabdimas.v3i3.3745

Ruben, A. (2023). Overview of Knowledge of Elderly Gout Arthritis Patients About Gout Diet at Tresna Wredha Social Home “Ina 1” Sahati Tondano. *7*(1), 1230–1235.

Songgigilan, A. M. ., Rumengan, I., & Kundre, R. (2019). The Relationship Between Diet and Knowledge Level with Uric Acid Levels in Gout Arthritis Patients at Ranotana Weru Health Center. *Jurnal Keperawatan*, *7*(1), 1–8. https://doi.org/10.35790/jkp.v7i1.24325

Srimawati, Fauzia, N., & Risna. (2022). The Effect of Health Education on Knowledge of Low Purine Diet in Elderly with Gout Arthritis in Kembang Tanjong Health Center Area. *Jurnal Sains Riset* , *12*(2), 430.

Syenshie Virgini Wetik, & Cyntia Theresia Lumintang. (2021). Increasing Knowledge About Gout Arthritis Diet Through Health Education. *Jurnal Indah Sains Dan Klinis*, *2*(3), 52–56. https://doi.org/10.52622/jisk.v2i3.38

Tanaya, V. Y., & Yuniartika, W. (2023). Cognitive Behavior Therapy (CBT) as Anxiety Therapy in the Elderly. *Jurnal Keperawatan Silampari*, *6*(2), 1419–1429. https://doi.org/10.31539/jks.v6i2.5422

Yoga, A., Laksana, B., & Hartutik, S. (2024). *The Relationship Between Gender and Duration of Illness with Depression in Elderly Hypertensive Patients. 2*(4).

Yuniartika, W., Mangifera, L., Nofandrilla, N., & Musalamah, S. (2022). Online Marketing Application Training for Elderly Posyandu (Integrated Healthcare Center) Cadres. *Proceding Ureccol 16th*, 1696–1704.