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Research Article

Effect of Audio-Visual Health Education on Knowledge Level of Elderly with Uric Acid Disease

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Abstract

Gout is a common health problem among the elderly, often exacerbated by limited knowledge regarding its management and prevention. This study aims to determine the effect of audiovisual health education on the knowledge level of elderly individuals with gout. A pre-experimental design with a one-group pre-test and post-test approach was employed. The research was conducted at the Bina Sejahtera Lansia Posyandu, Palembang City, on December 7, 2024. The sample consisted of 30 elderly participants selected using purposive sampling. Data collection began with a pretest to assess baseline knowledge using a structured questionnaire. Participants then received an audiovisual health education intervention, followed by a posttest to evaluate changes in knowledge. The results showed an increase in the average knowledge score from 6.07 (pre-test) to 8.33 (post-test). Statistical analysis using the Wilcoxon test yielded a p-value of 0.000 ($p<0.05$), indicating a significant improvement in knowledge after the intervention. These findings imply that audiovisual health education can be an effective method to enhance disease-related knowledge among the elderly, particularly in community-based health settings. Improving knowledge is a crucial step toward empowering the elderly to manage and prevent gout more effectively.

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Introduction

Elderly individuals are defined as those aged 60 years and over. This stage, often referred to as late adulthood or old age, is considered the final period of a person's life, during which physical and psychological decline gradually occurs [1]. As people age, the functioning of all body organs decreases due to the natural aging process and cellular degeneration. Consequently, the elderly become more susceptible to various health issues such as hypertension, cardiovascular disease, endocrine disorders, elevated uric acid levels, and joint diseases [2].

As age increases, the risk of high uric acid levels in blood also rises. Research has shown that the incidence of gout increases significantly after the age of 60. The elderly are particularly vulnerable to gout due to decreased physiological functions and poor lifestyle and dietary habits [3]. Gout, also known as gouty arthritis, is a type of joint disease marked by sudden and recurring attacks of severe joint pain.

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This pain is caused by the deposition of monosodium urate crystals because of hyperuricemia, or elevated levels of uric acid in the blood [4]. This condition arises from a disruption in purine metabolism, leading to increased uric acid production. Gouts are a common degenerative disease affecting joints, especially among the elderly [5].

Globally, the prevalence of gout continues to rise. In Western countries, the estimated prevalence ranges from less than 1% to 6.8%, while in China it is approximately 1.1% [6]. Studies conducted in North America and Scandinavia also indicate a 1.5 to 2-fold increase in gout incidence over recent decades [7]. The global prevalence has reached as high as 13.9%. From an epidemiological perspective, the impact of gout varies across populations with different racial and cultural backgrounds. For instance, gout affects 4.8% of African Americans and 2% of Hispanics in the Polynesian region. These disparities reflect health inequalities influenced by diet, genetic predisposition, health behavior, and belief systems [8].

According to the World Health Organization (WHO), Indonesia ranks among the countries with the highest number of gout sufferers. A WHO survey indicated that 35% of gout cases occur in individuals aged 35 years and older. The 2018 Basic Health Research (Riskesdas) data revealed that 7.3% of joint diseases in Indonesia are attributed to gout based on signs and symptoms. In Central Java, the prevalence of gout ranges between 2.6% and 47.2% [9]. In South Sumatra Province, the prevalence varies by age group: 0.80% among those aged 15–24 years, 3.03% (25–34), 5.92% (35–44), 9.35% (45–54), 14.84% (55–64), 17.63% (65–74), and 21.39% for individuals aged over 75 years [10].

Health education is an evolving process aimed at changing individual or community behavior not merely through the transfer of information, but by fostering awareness. It empowers families to manage their needs and challenges, including how to care for members with chronic conditions such as gout [11]. Various media can be used to deliver health education effectively, including leaflets and video screenings [12]. Audiovisual media combines sound and visual elements to enhance learning. They are effective in increasing knowledge, skills, and behavioral change by presenting engaging and comprehensive educational content using text, images, sound, animations, and videos [13].

Based on a preliminary study conducted on October 12, 2024, interviews with the head of the elderly Posyandu “Bina Sejahtera” in Palembang revealed that 57 elderly individuals had been diagnosed with gout between August and October 2024. Based on the issues outlined above, this study aims to determine the effect of audiovisual health education on the level of knowledge among elderly individuals with gout. The results of this study are expected to serve as a reference for healthcare providers in implementing more effective educational interventions, thereby improving disease management and enhancing the quality of life among elderly gout sufferers.

Research Methods

This research method uses a pre-experimental design with a one group pre-post test design. In this study, the sample will be given a pretest (questionnaire) before being given an intervention, then given an intervention and a posttest (questionnaire) will be carried out again. In the initial stage of this study, field

observations will be carried out at the Posyandu for the elderly in Bina Sejahtera Palembang, then the sample will be determined using a purposive sampling technique, then the selected respondents will be explained in advance about the objectives and procedures of the study. In the second stage (pretest), the level of knowledge of respondents will be measured using a questionnaire for the elderly with gout, then an audiovisual health education intervention will be given to the level of knowledge of the elderly with gout. In the third stage, the posttest will be carried out again to measure the level of knowledge of respondents using a questionnaire for the elderly with gout.

Research location: the study was conducted at the Posyandu for the Elderly in Bina Sejahtera, Palembang City 2024. Research time: this study was conducted on December 7, 2024. The sample in the study was 30 respondents and this was carried out using a purposive sampling method, namely the sampling technique based on the researcher's considerations regarding which sample is most appropriate, considered to be able to represent a population. The sample criteria of this study are as follows: Inclusion criteria are respondents with the elderly category aged ≥ 45 years. Elderly who can communicate well. Elderly who have a history of uric acid > 8 mg / dL. Elderly who can read. Exclusion criteria are elderly who do not have good vision. Elderly who do not have good hearing.

Results and Discussion

This study was conducted on December 7, 2024. The number of respondents was 30 elderly people at the Bina Sejahtera Elderly Posyandu.

A. Research Results

The data collected was then processed and then univariate analysis was carried out. The univariate analysis that will be described in this study is a frequency table and percentage of respondent age, respondent gender, respondent education, level of knowledge measured before and after being given audio-visual health education, as described below. Table 1 presents the frequency distribution based on respondent age at the Bina Sejahtera Elderly Posyandu, Palembang City 2024.

Table 1. Frequency Distribution Based on Respondents' Age.

No	Age	Frequency	Percentage
1	45-54	2	6,7
2	55-59	2	6,7
3	>60	26	86,8
Total		30	100

From Table 1 above, it is known that the majority of respondents' ages were in the >60 years interval, namely 26 people (86.8%) and 2 people (6.7%) each in the 45-54 years and 55-59 years intervals. Table 2 presents the frequency distribution based on gender of respondents at the Bina Sejahtera Elderly Posyandu in Palembang City 2024.

Table 2. Frequency Distribution Based on Respondent Gender.

No	Gender	Frequency	Percentage
1	Male	5	16,7
2	Female	25	83,3
Total		30	100

From Table 2 above, it is known that the majority of respondents were female, as many as 25 (83.3%) and only 5 people (16.7%) were male. Table 3 presents the frequency distribution based on respondents' education at the Bina Sejahtera Elderly Posyandu in Palembang City 2024.

Table 3. presents the frequency distribution based on respondents' education.

No	Education	Frequency	Percentage
1	Elementary	3	10,0
2	Junior High	5	16,7
3	High School	9	30,0
4	College	13	43,3
Total		30	100

In Table 3 above, it is known that the majority of respondents' education was tertiary education, as many as 13 (43.3%) and only 3 (10.0%) respondents had elementary school education. Table 4 presents the frequency distribution based on the level of knowledge of elderly people with gout before and after being given audio visual health education at the Bina Sejahtera Elderly Posyandu, Palembang City 2024.

Table 4. Frequency distribution based on the level of knowledge of elderly people with gout before and after being given audio-visual health education.

No	Knowledge	Pre-test		Post-test	
		Frequency	Percentage	Frequency	Percentage
1	Low	8	26,7	1	3,3
2	Currently	22	73,3	11	36,7
3	High	0	0	18	60,0
Total		30	100	30	100

In Table 4 above, it is known that most of the respondents' knowledge before being given audio-visual health education was in the medium category, as many as 22 people (73.3%) and none in the high category. Meanwhile, most of the respondents' knowledge after being given audio-visual health education was in the high category, as many as 18 people (60.0%), and only 1 person in the low category. Table 5 presents the shapiro-wilk normality test of the level of knowledge of elderly people with gout before and after being given audio visual health education at the Bina Sejahtera Elderly Posyandu, Palembang City 2024.

Table 5. Shapiro-Wilk Normality Test

No	Knowledge Variable	*Shapiro-Wilk*		Status
		Statistic	p-value	
1	Pre-test	0,887	0,004	Tidak normal
2	Post-test	0,830	0,000	Tidak normal

After seeing the results of the normality test in the Shapiro-Wilk table, it is known that the knowledge data before being given audio-visual health education is 0.004, which is stated to be abnormally distributed and after

being given audio-visual health education is 0.000, it is abnormally distributed. Bivariate analysis to determine the effect of audio-visual health education on the level of knowledge of the elderly with gout using the Wilcoxon test. Table 6 presents wilcoxon test level of knowledge of the elderly with gout before and after being given audio-visual health education at the Bina Sejahtera Lansia Posyandu, Palembang City 2024.

Table 6. Wilcoxon Test Wilcoxon Test Knowledge Level

No	Knowledge	N	*Mean*	SD	*p-value*
1	Pre-test	30	6,07	1,388	0,000
2	Post-test	30	8,33	1,269	

From Table 6 above, it is known that the mean (average) of knowledge before being given audio-visual health education is 6.07 and after being given audio-visual health education is 8.33, it can be seen that the mean (average) before is smaller than after, so it can be concluded that audio-visual health education can increase the knowledge of the elderly with gout. From the results of the non-parametric Wilcoxon test, the sig value (p-value) = 0.000 <0.05 was obtained, so hypothesis 1 was proven which stated that there was an effect of audiovisual health education on the level of knowledge of the elderly with gout at the Bina Sejahtera elderly health post in 2024.

B. Discussion

From the results of the univariate analysis, it was found that the majority of respondents' knowledge levels before being given audio-visual health education were moderate as many as 22 (73.3%) and low as many as 8 (26.7%) and high as many as 0. Furthermore, the majority of respondents' knowledge levels after being given audio-visual health education were high as many as 18 (60.0%) respondents, for the moderate category as many as 11 (36.7%) respondents and only 1 (3.3%) with the low category.

To increase the efficiency and effectiveness of the health education process, the right media must be used to convey information through health education. However, not all types of media are suitable for use. A study shows that the use of audio-visual media helps respondents gain better knowledge in health education activities. Audiovisual media is an ideal combination of audio and visual because many senses are used to convey objects and messages, increasing knowledge and skills [14].

Audio visuals are good learning tools for the health education process. Audiovisual media is the use of material and its absorption through hearing and sight to create an environment that allows people to acquire attitudes, knowledge, or skills [15]. Elderly, or elderly, is when someone ages from 60 years and over. At this age, a person experiences a decline in physical function and health which is characterized by a decrease in muscle mass, strength, and brain function [16]. From the results of the bivariate analysis, it is known that the mean (average) knowledge before being given audio-visual health education is 6.07 and after being given audio-visual health education is 8.33, it can be seen that the mean (average) before is smaller than after being given health education, so it can be concluded that audio-visual health education can increase the knowledge of the elderly with gout.

As explained in the background, the number of elderly people suffering from gout is quite large and there has never been an audio-visual health education intervention to increase the knowledge of the elderly suffering from gout at the Bina Sejahtera elderly health post, so when the study was based on the researcher's observation, the elderly were willing to be respondents to be given audio-visual health education interventions, all respondents seemed happy and enthusiastic to take part in audio-visual health education.

From the results of the non-parametric Wilcoxon test, the sig value (p-value) = 0.000 <0.05 was obtained, so hypothesis 1 was proven which stated that there was an effect of providing audio-visual health education on increasing the knowledge of the elderly with gout at the Bina Sejahtera elderly health post. Elderly are people aged > 45 years, a person's age can affect a person's level of knowledge. A person's comprehension and mindset are also influenced by their age. A person's comprehension and mindset improve with age, which means they have more knowledge. Those aged between 20 and 35 years will be better prepared to adjust to old age and play a more active role in society and social life [17].

Gender differences can lead to different perceptions, which in turn affect different attitudes and knowledge between men and women. This does raise debate about whether men and women have differences in making decisions ethically and cognitively. Some literature has not yet explained that men or women have different levels of knowledge or cognitively. The reality is that women are indeed more diligent, persistent and careful when given tasks or doing something, but this does not explain and show that with such an attitude, women have a better level of knowledge or cognitive [18].

Audiovisual consists of images and sounds that can be seen through videos, films, and other types of media. Audiovisual methods can be used as supporting media in counseling because the information provided is brief, clear, interesting, and easy to understand. Audiovisual can help in health education or counseling because the information provided is brief, concise, and clear, and interesting and easy to understand. Audiovisual media, with movement and sound, make it easier for respondents to get information quickly. Widely used in daily activities, videos are very helpful for learning compared to lectures. From the results of this study, there is an influence of audio-visual health education on the level of knowledge of the elderly with gout at the Posyandu for the elderly in Bina Sejahtera in 2024. This is because health education uses the audio-visual method combining sound and movement or visuals that can make it easier for respondents to get information clearly.

Based on the results of the study and the discussion above, the researcher assumes that there is an influence of audio-visual health education on the level of knowledge in the elderly with gout. The use of audio-visual media is more effective because it combines two elements, namely sound (audio) and image information (visual) so that the delivery of information is understood more quickly by the audience.

Conclusion

This study aimed to examine the effectiveness of health education using audiovisual media in increasing the knowledge of elderly individuals about gout at the Bina Sejahtera Elderly Posyandu in Palembang. The findings revealed a significant improvement in participants' knowledge, as evidenced by the increase in the average score from 6.07 pre-intervention to 8.33 post-intervention, and supported by a Wilcoxon test p-value of 0.000 ($p<0.05$). These results demonstrate that audiovisual media is an impactful tool for addressing the knowledge gap among the elderly regarding gout, offering a practical and engaging approach to health education. However, this research was limited by its small sample size and short-term assessment, which may affect the generalizability and long-term validity of the findings. Future research is recommended to involve larger, more diverse populations and explore long-term knowledge retention. The implications of this study suggest that integrating audiovisual media into educational strategies can significantly contribute to the advancement of health education practices, particularly in promoting geriatric health literacy within community-based settings.

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Author Contributions

Nurjannah: conceptualization; formal analysis; data curation; methodology; writing- review and editing. Resti Maisa Lindra: validation; data curation; writing-review and editing. Said Sudi Khassim: validation; formal analysis; data curation; writing- review and editing.

Availability of data and materials

All data is available from the authors.

Competing interests

The authors declare no competing interest.

Additional information

No additional information from the authors.

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