Elderly gymnastics as an effort to control hypertension in Kalisoka Hamlet, Margosari, Pengasih, Kulon Progo

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Abstract
Hypertension is a non-communicable disease that is often experienced by the elderly and is a major risk factor for heart disease and stroke. Physical activities such as elderly exercise can help control hypertension. This study aims to describe the health conditions of the elderly and the role of elderly exercise in controlling hypertension in Kalisoka Hamlet. Methods: The activity was carried out with a descriptive cross-sectional design. Primary data collected were 25 people who attended on August 18, 2025 through examinations (weight, blood pressure, uric acid levels), then continued with hypertension exercise and health education. Results: It was found that 12 elderly people (48.0%) had above-normal blood pressure and 9 elderly people (36.0%) had high uric acid levels. The elderly were enthusiastic about participating in exercise and showed an increased understanding of hypertension. Conclusion: Hypertension is still a problem for the elderly in Kalisoka. Elderly exercise has the potential to be a community strategy to support hypertension control.

Keywords: elderly; elderly exercise; hypertension

1. Introduction

High blood pressure, or hypertension, is a non-communicable disease and is quite common in Indonesia. According to data from the 2018 Basic Health Research (Riskesdas), hypertension has a national prevalence of 34.1%, with a higher rate in the age group over 60. Hypertension is often referred to as an asymptomatic killer because it does not show clear signs, but it can lead to serious complications, such as stroke, heart disease, and kidney failure. This emphasizes the importance of preventing and managing hypertension, especially among the elderly. Hypertension control can be achieved through two approaches: pharmacological approaches through the use of antihypertensive drugs and non-pharmacological approaches involving healthy lifestyle changes, including regular physical activity. Physical activity plays a crucial role in maintaining heart health, increasing blood vessel flexibility, and helping lower blood pressure. One type of physical activity suitable for the elderly is gymnastics for the elderly. Gymnastics for the elderly is a form of light exercise adapted to the body condition of the elderly, making it safe and beneficial for both physical and mental health.

Kalisoka Hamlet, Margosari, Pengasih, Kulon Progo Regency, has a significant elderly population, with a large proportion having a history of hypertension. However, there is still a lack of knowledge and habits of the elderly regarding regular physical activity. Through the Community Service Program (KKN), a group of 23 students from Universitas Aisyiyah Yogyakarta initiated an elderly exercise program for hypertension as part of a community-based health intervention. This program not only aims to lower blood pressure but also to improve fitness, health awareness, and social interaction among the elderly. Thus, the implementation of elderly exercise in Kalisoka Hamlet is a strategic step to support

public health promotion and prevention programs, particularly in managing hypertension among the elderly.

2. Methods

This study used a descriptive method with quantitative and qualitative approaches. The activity was carried out in Kalisoka Hamlet, Margosari Village, Pengasih Subdistrict, Kulon Progo Regency with Community Service Program (KKN) students. The research subjects were elderly people with a history of hypertension who participated in regular exercise activities, totaling approximately 25 people aged 60–75 years. The implementation procedure included health socialization, blood pressure measurements before and after exercise, implementation of elderly exercise for approximately 45 minutes, and a short interview regarding the perceived benefits. Quantitative data were analyzed descriptively to see changes in blood pressure, while qualitative data were analyzed based on themes that emerged from observations and interviews.

2.1. Location and time of research

The event took place on August 18, 2025, at the Kalisoka Hamlet tennis court in Margosari Village, Pengasih District, Kulon Progo Regency.

2.2. Population and sample

The population in this study was all elderly people residing in Kalisoka Hamlet, Margosari Village, Pengasih Subdistrict, Kulon Progo Regency. The research sample focused on elderly women who were willing to participate in exercise activities. The sample selection was carried out by purposive sampling with inclusion criteria of being ≥60 years old, having a history of hypertension, and being able to participate in elderly exercise activities. The number of samples involved in this activity was approximately 25 people.

2.3. Data collection technique

The data used in this study is primary data collected by KKN students through health checks and elderly exercise activities in Kalisoka Hamlet. The examinations were conducted directly by the students. The data collection stages included:

a. Anthropometric Measurements: Each respondent/elderly person's weight was measured using a digital scale in kilograms (kg).
b. Clinical Examination: The examinations carried out included measuring blood pressure using a digital/manual tensiometer with units (mmHg) and checking uric acid levels using a digital uric acid test tool (test strip) with units (mg/dL), as well as recording the respondents' pulse/heart rate (HR).
c. Data Logging: Respondent identity data (name and age), body weight (kg), blood pressure (mmHg), uric acid (mg/dL) and HR were recorded by KKN students in the health examination sheet.

2.4. Data analysis

Clinical data collected included blood pressure and uric acid levels. Blood pressure testing was used to determine the hypertension status of the elderly based on the 2018 Riskesdas criteria, namely if blood pressure ≥140/90 mmHg is categorized as hypertension, while below that value is categorized as normal. Uric acid level testing was analyzed by comparing it to the normal reference value (2.6 – 6.0 mg/dL) in women, so that respondents with values above the normal limit were categorized as having hyperuricemia. Meanwhile, body weight and heart rate (HR) data were used to provide a general overview of the health condition of the elderly. The analysis was conducted descriptively by calculating the number and percentage of respondents in each category.

3. Results and discussion

3.1. Research Results: Prevalence of Hypertension in the Elderly in Kalisoka Hamlet

In the Posyandu activity for the elderly held on August 18, 2025, as many as 25 elderly people participated in health check-ups such as weighing, checking blood pressure, uric acid levels, and recording pulse rates, followed by elderly gymnastics.
Of the total of 25 respondents, the analysis results show that:

a. **Number of Elderly with Hypertension:**It was found that 12 elderly people had hypertension with blood pressure ≥140/90 mmHg.
b. **Prevalence of Hypertension:**Thus, the prevalence rate of hypertension in the elderly in Kalisoka Hamlet during the study was 48.0% (12 out of 25 elderly).

3.2. Discussion

The results of the health check-up showed that the incidence of hypertension among the elderly in Kalisoka Hamlet reached 48.0%, or nearly half of the total respondents. This figure is quite high compared to the national figure of 34.1% recorded according to the 2018 Basic Health Research (Riskesdas), and indicates that hypertension remains a significant health issue at the hamlet level. Furthermore, it was revealed that 36.0% of the elderly had uric acid levels above normal limits, indicating a risk of comorbidities that can worsen the elderly's health condition. The high prevalence of hypertension in the elderly may be caused by several factors, including the aging process that affects blood vessel elasticity, a diet high in salt or fat, lack of physical activity, and a family medical history. These factors are in line with research that suggests hypertension is a multifactorial condition that increases with age.

The elderly exercise program conducted in this study aims to promote a healthy lifestyle through easy-to-do physical activities tailored to the abilities of older adults. Elderly exercise has various benefits, including:

a. **Physiological:**Helps lower blood pressure by improving blood circulation, improving blood vessel elasticity, and maintaining heart health.
b. **Psychological:**Provides a relaxing effect, reduces stress levels, and increases self-confidence.
c. **Social:**Increase interaction among seniors and build a spirit of togetherness in the community.

Seniors' engagement in this activity was quite good, as evidenced by their enthusiasm for the exercise and active participation in the health education sessions. Education about hypertension is crucial for increasing seniors' knowledge and awareness of the importance of regular checkups, adherence to medication (if needed), and adopting a healthy lifestyle.

The results of this study support findings from previous studies showing that regular physical activity, such as elderly exercise, can be an effective non-pharmacological strategy for controlling blood pressure. However, this practice must be carried out sustainably to have long-term effects on the health of the elderly. Support from families, health workers, and village officials is essential to ensure the sustainability of the elderly exercise program in the hamlet. Overall, this activity not only contributes to controlling hypertension but also improves the quality of life of the elderly through a promotive and preventive approach. Therefore, the implementation of elderly exercise can be a superior community-based initiative to reduce the impact of hypertension in rural areas.

4. Conclusion

Results from health checks and exercise activities for the elderly in Kalisoka Hamlet, Margosari, Pengasih, Kulon Progo, indicate a relatively high prevalence of hypertension among the elderly, at 48.0%, with 36.0% having uric acid levels above normal limits. This indicates that hypertension remains a health problem requiring special attention at the hamlet level.

Implementing elderly exercise programs accompanied by health education has been shown to increase awareness among seniors regarding the importance of regular checkups, adherence to medication, and adopting a healthy lifestyle. The high level of enthusiasm among participants demonstrates that elderly exercise can be an effective community-based intervention to support hypertension control and improve the quality of life for seniors.

5. Suggestion

5.1. For the Elderly

It's recommended that seniors regularly participate in exercise at least 2–3 times a week to help lower blood pressure and improve physical fitness. Seniors are advised to undergo regular health check-ups and maintain a balanced diet low in salt and fat.

5.2. For Health Cadres and Elderly Posyandu

It is recommended to continue the elderly exercise program on a regular basis and link it to activities at the Elderly Integrated Health Post (Posyandu Lansia). Continuously improving health education regarding hypertension, diet, and a healthy lifestyle is needed.

5.3. For Village Government and Community Health Center

` Support is expected to be provided in the form of facilities and infrastructure for elderly exercise activities, such as providing facilities and equipment for health check-ups. Strengthening non-communicable disease prevention and control programs through intersectoral collaboration is crucial.

5.4. For KKN Students and Academics

Similar activities can be continued in other areas by conducting long-term evaluations to assess the effects of elderly exercise on blood pressure and the overall health of the elderly.

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