

Integrated hypertension education for the elderly by UNISA Yogyakarta Students in Sleman

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Abstract

Hypertension is a non-communicable disease that is commonly experienced by the elderly and poses a risk of serious complications such as stroke and heart disease. Prevention efforts through health education are essential so that the elderly can understand the risks, control their blood pressure, and adopt a healthy lifestyle. This community service activity aimed to increase the knowledge and awareness of the elderly about hypertension through integrated education. The method used was a participatory approach involving nursing, nutrition, and physiotherapy students, as well as elderly health center cadres. The activity was carried out in Pojok IV Village, Sleman, and was attended by 38 elderly people. The series of activities included health checks, nutrition counseling on low-salt diets, balance exercises, and exercise for the elderly. The results of the activity showed that the participants were enthusiastic about participating in all activities, gained a better understanding of the risk factors for hypertension, and were motivated to maintain a healthy lifestyle. This collaborative education proved to be effective in increasing the elderly's awareness of hypertension prevention and can be a model for integrated health education programs in the community.

Keywords: elderly; health education; hypertension; nutrition; physiotherapy

1. Introduction

Hypertension is one of the most common non-communicable diseases and a major risk factor for cardiovascular complications in the elderly (Oliveros et al., 2020). The elderly are defined as individuals aged 60 years and above (Schutte et al., 2023). In this age group, physiological changes occur, characterized by a decline in organ function, including blood vessel elasticity and the heart's ability to pump blood, thereby increasing the risk of hypertension (Ampugo et al., 2024).

According to (Zhang et al., 2021), hypertension in the elderly has serious consequences as it can lead to complications such as stroke, coronary heart disease, kidney failure, and a reduced quality of life. Data from the 2023 Indonesian Health Survey (SKI) shows that the national prevalence of hypertension in people aged ≥ 18 years reached 34.1%, with higher rates among the elderly: 45.9% in the 55–64 age group, 57.6% in the 65–74 age group, and 63.8% in the ≥ 75 age group. In the Special Region of Yogyakarta (DIY), the prevalence of hypertension increased from 10.68% in 2018 to 13.0% in 2023. Sleman Regency, as the region with the largest elderly population in DIY, is an area at high risk for hypertension and its complications.

Health education is a process of providing information, motivation, and skills to individuals or groups so that they can improve their knowledge, attitudes, and healthy behaviors (Ukoha-Kalu et al., 2023). In the elderly, education is very important because it helps them understand the risk factors for hypertension, how to prevent it, and how to control it through a healthy lifestyle, such as a balanced low-salt diet, regular physical activity, and regular health checkups (Amellia et al., 2025). With proper education, the elderly not only gain knowledge but are also motivated to make behavioral changes in

their daily lives (Woodham et al., 2020).

Previous research has shown that group-based education is more effective in lowering blood pressure in older adults than routine care (McDonagh et al., 2025). This is consistent with findings that nurse-led interventions can improve adherence and quality of life in older adults with hypertension (Ito et al., 2024). Additionally, other research indicates that peer support is more cost-effective in improving medication adherence than conventional education provided solely by healthcare professionals (Ranjbar et al., 2024).

From a lifestyle perspective, the DASH diet has been shown to consistently have a significant effect on lowering blood pressure (Miller et al., 2025). Not only that, structured physical activity has also been proven to improve body stability and reduce the risk of falls in the elderly (Zhu et al., 2025). However, the results of the NHANES data analysis reveal that the elderly's adherence to a healthy lifestyle is still relatively low, so more integrated educational interventions are needed (Tang et al., 2025). Thus, previous studies emphasize that comprehensive hypertension education, covering nutrition, physical activity, social support, and assistance from health workers, is essential to improve the quality of life of elderly people with hypertension and prevent complications.

2. Method

This community service activity used a collaborative participatory approach involving students from the Nutrition, Physiotherapy, and Nursing Study Programs, with the support of the elderly health center cadres of Pojok IV Village. Coordination was carried out with the village head, the village chief, and the head of the elderly health center to determine the time, place, and division of tasks. The activity was conducted on Saturday, August 9, 2025, at 2:00 PM at the Village Head's residence. Pojok IV Village. The equipment used included digital tensiometers to check blood pressure and heart rate, digital scales to measure weight, measuring tapes to measure waist circumference, and educational materials in the form of PowerPoint (PPT) presentations.

The activity was carried out in conjunction with the regular elderly health center and was attended by 38 elderly people. The series of activities included:

- a. Registration of participants and record-keeping by health post cadres.
- b. Health screening by nursing students, including blood pressure, heart rate, weight, and waist circumference.
- c. Nutrition education by nutrition students using PPT presentations.
- d. Balance exercises led by physical therapy students.
- e. Senior citizen exercises led by nursing students.

Activity results are summarized and reported to the Community Health Center as a follow-up. The student team also submits activity reports to the village head, village chief, and Elderly Health Post chairperson. Collaboration is carried out in an integrated manner between students from various study programs and health post cadres. Students are responsible for examinations, education, and interventions, while cadres assist with recording and organizing participants.

3. Results and Discussion

The elderly health post activity in Pojok IV Village was attended by 38 participants. Blood pressure screening results showed that 13 elderly people had normal blood pressure, 5 elderly people were in a borderline condition, and 20 elderly people were in the abnormal category. These findings show that the majority of elderly people have blood pressure outside the normal range, putting them at risk for hypertension and its complications. This is in line with a report from the Indonesian Ministry of Health explaining that the prevalence of hypertension in the elderly continues to increase due to physiological changes, decreased blood vessel elasticity, and unhealthy lifestyles.

As a follow-up, nutrition students provided education on healthy eating patterns for the elderly. The material presented included limiting salt intake, portion control, choosing low-fat foods, and increasing fruit and vegetable intake. This education aims to help the elderly control their blood pressure and improve their quality of life through a more balanced diet. This approach is in line with research (Fitriyaningsih et al., 2021) that emphasizes the importance of a healthy diet in preventing hypertension in old age.



Figure 1. Blood Pressure Check & Balance Exercise Demonstration for the Elderly

In addition to nutrition education, physical therapy students conducted guided balance exercise interventions at the activity location. According to (Sun et al., 2023), the exercises were conducted in stages, starting from standing while holding onto a chair, walking with small steps, to standing on one foot alternately. This activity is beneficial for training body stability, strengthening leg muscles, and preventing the risk of falls, which is a common issue among the elderly. Participants appeared enthusiastic about following the movements, although some required assistance from companions to ensure safety.



Figure 2. Exercise session with elderly individuals at Pojok IV

Nursing students are responsible for screening blood pressure using digital tensiometers. Each elderly person is examined before and after the activity to determine any changes in their condition. In addition to the examination, nursing students also lead group exercises for the elderly in the health center courtyard. The exercises include warm-ups, stretching, breathing exercises, and cool-downs. These exercises are designed to be simple so that all participants can follow along, even those with limited mobility. The exercise activities not only provide physical benefits in the form of lower blood pressure and increased fitness, but also foster a spirit of togetherness among the elderly.



Figure 3. Presentation of Material on Hypertension Care for the Elderly

The collaboration between various fields of study (nutrition, physiotherapy, and nursing) in this activity provides a clear picture that integrated interventions are more effective than a single approach. Nutrition education reinforces awareness of healthy lifestyles, balance exercises maintain functional abilities, while health screening and exercise for the elderly ensure condition monitoring while increasing physical activity. With this integration, the elderly receive comprehensive services in promotive, preventive, and rehabilitative aspects.

4. Conclusion

The integrated outreach activity in Pojok IV Village showed that most elderly people had abnormal and borderline blood pressure, putting them at risk of hypertension. Collaborative interventions involving nutrition education, balance exercises, health screening, and exercise for the elderly proved effective in supporting increased knowledge, healthy habits, and physical activity among the elderly. The results of this activity can serve as a model for community service based on interprofessional collaboration in efforts to improve the health status of the elderly.

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