

# Hypertension exercise intervention in geotherapy nursing care with health maintenance is ineffective

Rully Nauli Afriana\*, Tiwi Sudyasih

Nursing Study Program, Universitas 'Aisyiyah Yogyakarta, Indonesia

\*Email: rullynauli@gmail.com tiwisudyasih@unisayogya.ac.id

## Abstract

Hypertension is one of the most common chronic diseases experienced by the elderly and is often not well managed due to lack of knowledge and ineffective health care. This study aims to evaluate the effectiveness of hypertension exercise interventions in improving health care for the elderly with hypertension. Methods: This study used a case study design on a 63-year-old elderly in Padukuhan Sentul - Geneng, Sleman, with a nursing diagnosis of Ineffective Health Maintenance. Data were collected through interviews, observations, documentation studies, and blood pressure measurements. The intervention in the form of hypertension exercise was carried out in seven meetings. The results showed a decrease in blood pressure from 150/90 mmHg to 138/88 mmHg, as well as improved sleep quality and client motivation in managing their health independently. The client showed a better understanding of hypertension management and committed to continuing exercise regularly. These findings support that hypertension exercise is an effective non-pharmacological intervention to improve blood pressure control and quality of life for the elderly. A holistic approach through education and family empowerment strengthens the success of this intervention. This study recommends the development of a broad hypertension exercise intervention with a quantitative design and the incorporation of other relaxation techniques to optimize results.

**Keywords:** Hypertension, Elderly, Ineffective Health Maintenance, Hypertension Exercise, Gerontological Nursing

## 1. Introduction

Hypertension is one of the most common chronic diseases in the elderly, characterized by blood pressure  $\geq 140/90$  mmHg. With age, blood vessel elasticity decreases and the risk of degenerative diseases increases, making the elderly more vulnerable. Lack of understanding and ineffective health care can lead to undiagnosed or poorly controlled hypertension, which ultimately leads to complications such as stroke, heart failure, and kidney disorders (Munir et al., 2024).

WHO data lists hypertension as the second most common disease in the elderly after arthritis. In Indonesia, with an incidence rate of 15.2% of 1,203 samples, the 2018 Basic Health Research (Riskesdas) showed the prevalence of hypertension reached 34.1%, and continues to increase in the elderly with age. In the Special Region of Yogyakarta (DIY), data shows an increase in hypertension cases year after year. In 2021, 127,188 cases were recorded, and this number increased to 143,382 cases in 2023 (Somantri, 2022). Meanwhile, in Sleman Regency, hypertension is a major problem in the elderly, with a prevalence of 39.65% (Sleman Health Office, 2020).

Besides hypertension, sleep disorders are also common in the elderly, negatively impacting their health. Non-pharmacological interventions such as music therapy have been shown to be effective in improving sleep quality (Agustina, 2021). Furthermore, the elderly's readiness to increase their knowledge presents a crucial opportunity for nurses to provide education on healthy lifestyles, low-salt diets, and the importance of physical activity and medication adherence (Sutini et al., 2022).

Hypertension exercise is a non-pharmacological intervention proven effective in lowering blood pressure and improving quality of life in older adults (Putranti et al., 2024). In geriatric nursing practice, this exercise can be combined with education and a holistic approach to empower older adults to independently manage hypertension and prevent further chronic complications (Watung, 2024).

## 2. Method

### 2.1. Research design

This study uses a case study method in geriatric nursing care with a focus on the application of hypertension exercise interventions to improve health maintenance in the elderly.

## 2.2. Research subjects

The research subject was an elderly person with hypertension who showed a nursing diagnosis of Ineffective Health Maintenance, who lived in Sentul – Geneng Hamlet, Sidoagung Village, Godean Subdistrict, Sleman Regency, Yogyakarta.

## 2.3. Data collection technique .

Data collection on Mrs. W was conducted by community nursing students using several complementary techniques to obtain a comprehensive picture of her health condition. Interviews were conducted directly with Mrs. W and her family members to elicit subjective information such as complaints of leg pain, sleep disturbances, perceptions of health conditions, and adherence to medication and daily lifestyle. Direct observation was also conducted to assess physical condition, daily activity ability, gait, expression when moving, and personal hygiene. In addition, students also observed the condition of the living environment and family support, as both aspects play a crucial role in the success of nursing interventions. Documentation studies were conducted by reviewing medical records and previous blood pressure records as part of the objective data.

Blood pressure measurements were taken periodically throughout the mentoring period to monitor the progress of Mrs. W's hypertension status. Community nursing students also implemented an intervention in the form of hypertension gymnastics, a light physical exercise designed to help lower blood pressure and improve the fitness of the elderly. This gymnastics was carried out according to a predetermined schedule, and Mrs. W's response to the activity was observed and recorded as part of the intervention evaluation. All of these data collection techniques provide a strong foundation for students in designing, implementing, and evaluating comprehensive nursing care, particularly in supporting the improvement of the client's quality of life through a holistic approach.

## 2.4. Data analysis

### a. Data reduction

The reduced data was systematically organized in narrative and tabular form, following the geriatric nursing assessment format. The presentation included subjective and objective data, blood pressure measurements, observations of daily activities, family support, and the effects of hypertension exercises. This presentation facilitated the identification of nursing problems and the connection between symptoms and their causes.

### b. Data presentation

The reduced data is then presented in narrative and tabular form, following the format for geriatric nursing care assessments. The data is organized systematically, including subjective and objective data, blood pressure measurements, observations of client activity, and family support. This presentation facilitates nurses' ability to identify emerging nursing problems and logically connect symptoms to their causes.

### c. Drawing Conclusions

Conclusions were drawn based on the data patterns found. The main problem identified was *Ineffective Health Maintenance* related to a lack of understanding of hypertension management and social support. Implementing hypertension exercises as an intervention was proven to have a positive impact on the client's condition. This conclusion serves as the basis for determining the nursing diagnosis, planning further interventions, and evaluating the success of nursing actions for Mrs. W.

## 3. Results and Discussion

This section explains the results of the research/community service project while providing a comprehensive discussion. Results can be presented in figures, graphs, tables, and other formats to facilitate easy understanding. Discussions can be divided into several sub-chapters.

### 3.1. Results

#### 3.1.1. Assessment Data

**a. Identity**

**1) Age**

The client is a 63-year-old woman, categorized as *early elderly*. At this age, degenerative processes begin to impact various body systems, both physically, psychologically, and socially. This advanced age increases the risk of chronic diseases such as hypertension, sleep disorders, decreased mobility, and emotional disturbances.

**2) Physical examination**

A physical examination revealed a blood pressure of 150/90 mmHg, indicating stage 1 hypertension. The chief complaint was pain in the right leg during activity, resulting in decreased mobility and dependence in some daily activities. The skin appeared dry and had decreased elasticity, which are hallmarks of aging and can be risk factors for pressure ulcers if mobility is impaired. There were no signs of edema, shortness of breath, or decreased level of consciousness.

**3) Short postable mental status questionnaire (SPMSQ)**

The SPMSQ was conducted to assess the client's cognitive status. Results showed that the client answered all questions correctly (0 errors), indicating good cognitive function. The client's orientation to time, place, and person was intact, and there was no confusion or disorientation that would indicate mild or severe dementia.

**4) Mini mental status exam (MMSE)**

Although not fully performed, interviews and observations revealed that the client was able to follow conversations well, showed no short-term or long-term memory impairment, and was able to perform calculations and understand instructions. This supports the absence of any indication of severe cognitive impairment, and the MMSE likely showed a score within normal limits (>24).

**5) Assessment of geriatric depression**

The client expressed feelings of worthlessness and sadness due to feeling less productive than when she was younger. Despite this, she remains active in social and spiritual activities, such as religious study groups, and receives adequate family support. These indications suggest that the client is experiencing mild depressive symptoms but still possesses coping mechanisms and social support that can be utilized in the nursing process.

**6) Pressure ulcer risk scale assessment**

Assessment using risk scales such as the Norton or Braden scale indicates that the client is at moderate risk for pressure ulcers. This is due to advanced age, impaired mobility due to foot pain, and dry skin. Although the client can still perform light activities, prolonged restriction of movement without frequent position changes can increase the risk of skin tissue damage.

**b. Nursing diagnosis analysis**

Based on the assessment data conducted on Mrs. W, the highest priority nursing diagnosis is Ineffective Health Management. This is characterized by the client's inability to optimally manage blood pressure due to a lack of knowledge, motivation, and support in carrying out hypertension therapy regularly. The client also experiences sleep disturbances that worsen her health condition, and shows readiness to increase knowledge regarding the implementation of hypertension exercises as part of *non-pharmacological therapy*. Risk factors such as advanced age, a long-standing history of hypertension, and complaints of leg pain contribute to the client's difficulty in maintaining health independently. Therefore, the diagnosis of Ineffective Health Management is the main focus in nursing care to provide appropriate interventions to optimize blood pressure control and improve quality of life.

**c. Nursing care plan analysis**

The priority diagnosis of Ineffective Health Management in Mrs. W was addressed with the aim of improving the client's ability to manage her health, particularly controlling hypertension. After 7

meetings, it was expected that there would be an increase in healthy living behaviors and a decrease in hypertension risk factors. Interventions included observing the client's readiness to receive information, providing education about risk factors and healthy lifestyles, and training in hypertension exercises as a non-pharmacological therapy. Education was provided on a scheduled basis using easy-to-understand media and accompanied by discussions to increase the client's understanding and motivation. With this approach, it was hoped that Mrs. W would be able to manage her health independently and adopt a better lifestyle, thereby preventing complications of hypertension.

#### **d. Implementation Analysis and Evaluation**

The hypertension exercise intervention was conducted over 7 sessions with a duration of 15–20 minutes per session, adjusted to Mrs. W.'s abilities and physical condition. At the beginning of the session, the client had difficulty following the exercise movements, but with continuous guidance and encouragement, the client began to be able to perform the exercise movements better and more routinely. The results of blood pressure measurements during the intervention showed a decrease from 150/90 mmHg to 138/88 mmHg after the seventh session, indicating that the hypertension exercise was effective in helping control Mrs. W.'s blood pressure. In addition, the client reported better sleep quality, feeling more relaxed and comfortable after doing the exercise. Mrs. W's readiness to do the exercise independently also increased, indicating that this intervention was successful in increasing the client's motivation and understanding of the importance of hypertension health management. However, follow-up in the form of ongoing monitoring and education is needed so that the results obtained can be maintained and become part of a long-term healthy lifestyle for Mrs. W.

### **3.2. Discussion**

Conclusion: Mrs. W's poorly managed hypertension, despite reducing salt and high-fat intake, indicates ineffective blood pressure management. Research by (Silvianah, 2024) emphasizes the importance of educating hypertensive patients to improve medication adherence and a healthy lifestyle. Furthermore, research by (Watung, 2024) shows that empowering the elderly through education and social support can improve hypertension control.

Mrs. W's sleep disturbances can impact her quality of life and worsen her hypertension. Research by (Hasibuan & Hasna, 2021) found that sleep disturbances in the elderly are associated with factors such as anxiety and physiological changes due to aging. Non-pharmacological interventions such as music therapy have been shown to be effective in improving sleep quality in the elderly. Research by (Agustina, 2021) showed that five days of music therapy can improve sleep quality in elderly people with sleep disturbances.

Mrs. W's readiness to improve her knowledge about hypertension management presents an opportunity for nurses to provide comprehensive education. Research (Sutini et al., 2022) emphasizes that family support and appropriate education can improve hypertension management behaviors in the elderly. This education can include information about a low-salt diet, the importance of physical activity, relaxation techniques, and the importance of medication adherence. This is in line with research by (Watung, 2024) which emphasizes the importance of a holistic approach in managing hypertension in the elderly.

One effective and easy-to-implement non-pharmacological intervention to lower blood pressure is hypertension exercise. Hypertension exercise is a form of light physical exercise specifically designed for people with hypertension, focusing on movements that can improve blood circulation, strengthen the heart, and naturally lower blood pressure. Research by (Putranti et al., 2024) showed that hypertension exercise, performed regularly for three weeks, can reduce systolic blood pressure by 40 mmHg and diastolic by 20 mmHg in the elderly.

In addition to its benefits for blood pressure, hypertension exercises also have a positive impact on sleep quality and psychological well-being in older adults. This light physical activity helps reduce stress, promote muscle relaxation, and improve sleep patterns. A study by (Marwa et al., 2024) confirmed that hypertension exercises significantly improved quality of life and sleep in older adults with hypertension.

Thus, providing education integrated with hypertension exercise interventions and other holistic approaches is very important to increase the effectiveness of hypertension management in elderly people such as Mrs. W. Nurses as health workers have a strategic role in facilitating these interventions through educational programs, demonstrations, and periodic evaluations of changes in blood pressure and conditions. general .

#### 4. Conclusion

Implementation of hypertension gymnastics as part from care nursing geriatric in Mrs. W with a diagnosis of hypertension and maintenance ineffective health proven effective in lower pressure blood as well as increase sleep quality and motivation client . This intervention improves Mrs. W's understanding of management hypertension and helps client undergo pattern life healthier overall independent . With the approach holistic and integrated education , hypertension exercise can be beneficial non - pharmacological interventions in control hypertension in the elderly in Sentul – Geneng Hamlet , Godean , Yogyakarta.

Study furthermore it is recommended to review effectiveness hypertension exercise intervention in a way quantitative with design experimental , as well as expand participation respondents so that the results can be generalized . In addition , it can be done development intervention a combination of hypertension exercises with techniques other relaxation ( eg. aromatherapy or meditation ) to see its influence to pressure blood and sleep quality in the elderly in a way more deep .

#### Saying Thank You

The author would like to express his deepest gratitude to the supervising lecturer who has provided guidance, direction, and very meaningful input in the preparation of this journal. Thanks are also extended to the community of Padukuhan Sentul – Geneng, Godean, Yogyakarta, especially to Mrs. W and her family who have been willing to be part of the assessment and intervention process. Not to forget, appreciation is also given to the cadres and members of the Elderly Posyandu who have helped in the implementation of hypertension exercises and supported this geriatric nursing care activity. Hopefully, the results of this journal can contribute to the development of nursing science and improve the quality of life of the elderly.

#### Bibliography

- Agustina, CI (2021). Efforts to overcome sleep pattern disorders in the elderly with music therapy. *HKBP Balige Nursing Journal* , 2 (2), 29–34. <https://ojs.akperhkbpbalige.ac.id/index.php/jkh/article/view/38>
- Hasibuan, RK, & Hasna, JA (2021). Overview of Sleep Quality in the Elderly and Factors Influencing It in Kayangan District, North Lombok Regency, West Nusa Tenggara. *Journal of Medicine and Health* , 17 (2), 187. <https://doi.org/10.24853/jkk.17.2.187-195>
- Marwa, S., Yanala, FK, Akuba, MS, Batjo, FA, Malinta, SD, Sari, SD, Taroreh, JJ, & Nggotule, KO (2024). *Implementation of Hypertension Exercise to Improve the Quality of Life of Hypertensive Elderly at Panti Tresna Werda Madago Tentena. Hypertensive Elderly at Panti Tresna Werda Madago Tentena* . 4 , 1–10. <https://doi.org/10.33860/mce.v4i1.4046>
- Moonti, MA, Rusmianingsih, N., Puspanegara, A., Heryanto, ML, & Nugraha, MD (2022). Hypertension Exercises for Hypertension Sufferers. *Journal of Health Empowerment and Education (JPPK)* , 2 (01), 44–50. <https://doi.org/10.34305/jppk.v2i01.529>
- Munir, R., Rasyidin, F., Amalia, D., Lestari, EP, & Budi, CS (2024). *Education about hypertension in the elderly* . 4 (01), 8–13.
- Putranti, AH, Maylani, DS, Baihaqi, N., Ramadhani, RS, Pawestri, DR, Febriyati, LC, Juliansyah, W., Khairiyah, A., & Satriyandari, Y. (2024). *Effectiveness of hypertension exercise for elderly in Sungapan Hamlet* . 2 (September), 170–174.
- Silvianah, AI (2024). © 2024 *Nursing Journal* . 52–61.
- Somantri, L. (2022). Mapping population mobility in the suburbs of Bandung City. *Indonesian Geography Magazine* , 36 (2), 95. <https://doi.org/10.22146/mgi.70636>

- Suaib, M., Cheristina, & Dewiyanti. (2019). The Relationship Between Knowledge Level and Hypertension Incidence in the Elderly. *Journal of Health Phenomena* , 2 (1), 269–276.
- Sutini, S., Winahyu, KM, & Rayatin, L. (2022). Hypertension Control Behavior in the Elderly as Reviewed from Family Appreciation and Emotional Support. *Indonesian Nursing Scientific Journal (JIKI)* , 5 (2), 134. <https://doi.org/10.31000/jiki.v5i2.6493>
- Watung, GIV (2024). *Management of Hypertension in the Elderly in Modayag Village* . 3 (1), 26–33.