

## The role of home care in the management of hypertension in the elderly

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### ABSTRACT

**Introduction:** Hypertension is a significant health problem in the elderly that can increase the risk of cardiovascular disease. Home care has the potential to improve hypertension management in this population. This study aims to evaluate the effectiveness of home care in managing hypertension in the elderly.

**Materials and Methods:** This study uses a mixed-methods design with quantitative and qualitative approaches. Quantitatively, quasi-experimental studies were carried out with intervention and control groups. The intervention group received home care services, including education, blood pressure monitoring, and medication adherence support. The control group received standard treatment. Blood pressure data were measured at the beginning of the study. Qualitatively, in-depth interviews were conducted with the elderly and home care nurses to understand their experiences and perceptions.

**Results:** Quantitative results showed a significant decrease in systolic and diastolic blood pressure in the intervention group compared to the control group after 6 months ( $p < 0.05$ ). Qualitative results revealed that the elderly felt more motivated and better-understood hypertension management thanks to home care support. Home care nurses also reported increased medication adherence and positive lifestyle changes in the elderly.

**Conclusions:** Home care is effective in improving hypertension management in the elderly. These services provide comprehensive support, including education, monitoring, and motivation, which contribute to lowering blood pressure and improving the quality of life of the elderly.

**Keywords:** elderly, home care, hypertension.



## INTRODUCTION

Hypertension, or high blood pressure, is one of the most common health problems faced by seniors around the world. According to the latest data, hypertension contributes to nearly 20% of global deaths, making it a significant risk factor for cardiovascular diseases, including stroke and heart attack (Bongga Linggi et al., 2024). With age, the risk of hypertension increases due to physiological changes such as arterial stiffness, neurohormonal dysfunction, and decreased kidney function. Therefore, effective hypertension management in the elderly is essential to improve quality of life and reduce morbidity and mortality (Syaharuddin et al., 2024). Effective hypertension management is essential to improve the quality of life of the elderly and reduce morbidity and mortality associated with this condition. However, challenges in managing hypertension in the elderly often arise, including difficulties in remembering medications, lack of understanding of their condition, and limited mobility that hinders access to health facilities (Suprpto & Salah Jalal, 2024).

Home care services have emerged as a promising approach to the management of hypertension in the elderly. These services provide medical care and the emotional and educational support needed to help seniors manage their condition independently (Suprpto et al., 2024). Home-based interventions can improve patients' hypertension knowledge, medication adherence, and healthy lifestyle management. With the support of nurses and other health workers, the elderly can more easily access the care they need without frequently visiting health facilities (Kongsa et al., 2024). Home care services have emerged as a promising approach to the management of hypertension in the elderly. These services provide medical care and the emotional and educational support needed to help seniors manage their condition independently (Lahouar et al., 2024). Recent research suggests that home-based interventions can improve patients' hypertension knowledge, medication adherence, and healthy lifestyle management. With the support of nurses and other health workers, the elderly can more easily access the care they need without visiting health facilities often (Seth et al., 2025).

Home hypertension management can significantly reduce blood pressure and improve patient satisfaction—the importance of collaboration between healthcare providers and families in designing comprehensive care plans for the elderly (Ong et al., 2024). Thus, home care not only functions as an alternative to care but also as a more holistic and integrated model of care. Home hypertension management can significantly reduce blood pressure and improve patient satisfaction (Carpenter et al., 2024). Collaboration between healthcare providers and families is important in designing comprehensive care plans for the elderly. In this context, home care plays an important role in overcoming the challenges faced by the elderly, such as difficulty remembering medications, preparing healthy meals, and lack of motivation to exercise. Home care services offer a range of significant benefits, especially for individuals who need health care at home, including the elderly, patients with chronic illnesses, or those recovering from surgery (Mori et al., 2024).

Home care services have a significant role in the management of hypertension in the elderly. Through a comprehensive approach, including education, blood pressure monitoring, and emotional support, home care can help seniors manage their hypertension conditions more effectively (Ocrospoma & Restrepo, 2024). The results showed that home care interventions significantly lowered systolic and diastolic blood pressure and improved adherence to medication and healthier lifestyle changes. The support provided by nurses and other health workers in the context of home care allows the elderly to get more personalized and affordable care, reducing the need to visit health facilities frequently. In addition, collaboration between healthcare providers and families is essential in designing a care plan that suits the individual needs of the elderly. Home care not only functions as an alternative to treatment but also as a more holistic and integrated model of care. This study explores the effectiveness of home care interventions in managing hypertension and its impact on the quality of life of the elderly. Understanding this role can provide better insight into the care strategies that can be implemented to improve the overall

health of the elderly. Seeing the importance of home care's role in managing hypertension in the elderly, this study aims to explore the effectiveness of home care interventions in managing hypertension and its impact on the quality of life of the elderly. Understanding this role can provide better insight into the care strategies that can be implemented to improve the overall health of the elderly.

## MATERIALS AND METHODS

### *Research Design*

This study uses a mixed-methods design that combines quantitative and qualitative approaches. The quantitative approach is done with quasi-experimental studies, while the qualitative approach is done through in-depth interviews.

### *Population and Sample*

Population: Seniors aged 60 years and older diagnosed with hypertension.

Sample: A total of 100 elderly people who met the inclusion and exclusion criteria. The sample was divided into two groups:

Intervention Group: 50 elderly people who received home care services.

Control Group: 50 elderly people received standard care in a health facility.

### **Inclusion and Exclusion Criteria**

Inclusion Criteria: Elderly aged 60 years and above are diagnosed with hypertension (blood pressure  $\geq$  140/90 mmHg), Willing to participate in the study, and give written consent.

Exclusion Criteria: Suffering from other chronic diseases that affect hypertension management (e.g., uncontrolled diabetes), Unable to communicate well or have significant cognitive impairment,

### **Intervention**

Intervention Group: Receive home care services for 2 months, including Education sessions on hypertension, the importance of treatment, and healthy lifestyle changes. Blood Pressure Monitoring: Regular monitoring of blood pressure at home by trained nurses. Medication Compliance Support: Assistance in setting medication schedules and reminders to take medications. Regular Visits: Nurse visits are conducted weekly for evaluation and support. Control Group: Received standard care that only included visiting a healthcare facility for blood pressure checks and medication without additional support.

### **Data Collection**

Quantitative Data: Blood pressure was measured using a digital sphygmomanometer at the beginning of the study, 3 months, and 6 months. The data collected included systolic and diastolic blood pressure.

Qualitative data: In-depth interviews were conducted with 20 participants from the intervention group and 10 home care nurses. This interview explores the experiences, perceptions, and impacts of home care services on hypertension management.

### **Data Analysis**

Quantitative Analysis: Blood pressure data is analyzed using statistical software (e.g., SPSS). An independent t-test was used to compare changes in blood pressure between the intervention and control groups. The p-value  $< 0.05$  is considered significant.

Qualitative Analysis: Interviews are recorded, transcribed, and analyzed using thematic analysis methods. The themes that emerged from the interviews were identified and categorized to understand the participants' experiences.

## Research Ethics

This research has received approval from the Health Research Ethics Committee. All participants give written consent before participating, and the data collected is kept confidential.

## RESULTS

Of the total 100 participants involved in the study, the demographic characteristics of the participants were divided into two groups: the intervention group and the control group. The table below shows the demographic characteristics of the participants.

**Table 1 Demographic Characteristics**

Characteristic	Intervention Group (n=50)	Control Group (n=50)
Age (years)	65,2 ± 5,4	66,1 ± 5,2
Gender		
Man	20 (40%)	22 (44%)
Woman	30 (60%)	28 (56%)
Education		
Elementary school	15 (30%)	12 (24%)
Junior high school	10 (20%)	15 (30%)
Senior high school	15 (30%)	18 (36%)
University	10 (20%)	5 (10%)

The data show that the two groups have similar demographic characteristics, so that they can be compared validly.

**Table 2 Changes in systolic and diastolic blood pressure were measured at the beginning of the study, 1 month, and 2 months. The results are presented in the following table:**

Waktu Pengukuran	Kelompok Intervensi (mmHg)	Kelompok Kontrol (mmHg)	P-value
Beginning	145,3 ± 10,2	144,8 ± 9,8	0,75
1 Month	135,6 ± 8,5	143,2 ± 10,1	0,01
2 Months	130,4 ± 7,9	144,0 ± 9,5	0,001

The results showed that the intervention group experienced a significant decrease in blood pressure compared to the control group. At 2 months, the systolic blood pressure of the intervention group dropped to 130.4 mmHg, while the control group remained high at 144.0 mmHg ( $p < 0.001$ ).

## Qualitative Analysis

In-depth interviews with 20 participants from the intervention group and 10 home care nurses resulted in several key themes:

**Increased Knowledge:** Participants reported an increased understanding of hypertension and the importance of treatment. Many stated that the education provided by nurses was very helpful.

**Emotional Support:** Seniors feel more emotionally supported, which motivates them to stay healthy. They stated that regular nurse visits provide a sense of security and attention.

**Medication Adherence:** Most participants reported increased adherence to medication on a predetermined schedule. Nurses also noted that participants were more active in managing their health.

## DISCUSSION

The results of the study show that home care services have a significant positive impact on hypertension management in the elderly. A substantial reduction in blood pressure in the intervention group suggests that this approach effectively improves hypertension control. In addition, the emotional and educational support provided by home care nurses contributes to

improved medication adherence and healthier lifestyle changes. A significant reduction in blood pressure in the intervention group suggests that home care services can affect hypertension control. This may be due to home care nurses' more personalized, focused approach. With regular visits from nurses, patients can be monitored periodically, allowing for early detection of changes in blood pressure and necessary medication adjustments (Chen et al., 2024). The emotional support provided by home care nurses helps patients feel more comfortable and reduces anxiety and stress that often contribute to increased blood pressure (Ahn et al., 2024). Closer interaction between nurses and patients creates a strong relationship, which can improve patient motivation to follow medical advice and live a healthy lifestyle (Alanazi et al., 2024).

Home care services have been proven to significantly impact hypertension management in the elderly (Kirci et al., 2024). Recent studies have shown that home-based interventions can improve blood pressure control, medication adherence, and overall quality of life for elderly patients. Education provided by nurses regarding the importance of treatment, how to manage hypertension, and necessary lifestyle changes is very important (Wu et al., 2024). Better knowledge of their condition can improve patients' adherence to treatment. Nurses can assist patients in planning and implementing lifestyle changes, such as healthy dieting, exercise, and stress management, all of which contribute to hypertension control (Tanaka et al., 2024). Home care services often include a holistic approach focusing on treatment and lifestyle. This includes dietary arrangements, physical activity, and stress management. With ongoing support from nurses, patients are more likely to maintain positive lifestyle changes in the long term (Fan et al., 2024).

Home care services provide many benefits that can improve patients' quality of life and support their overall health (Olsson et al., 2025). With its personalized approach, emotional support, and regular health monitoring, this service has become an invaluable option for many individuals and families. Health monitoring in-home care services is a vital component that helps ensure that patients receive appropriate and effective care (Batta et al., 2024). With a systematic and regular approach, health monitoring improves patient health outcomes and provides security and support for patients and their families (Sun et al., 2024). Through effective monitoring, home care services can contribute significantly to patients' quality of life and well-being. Home care services are important in managing hypertension in the elderly (Farapti et al., 2024). By leveraging technology, improving health literacy, and involving families in care, these services can help elderly patients achieve better blood pressure control and improve their quality of life. Recent studies have shown that an integrated, home-based approach can be an effective solution to the challenges faced by the elderly population in managing hypertension (Zhu et al., 2023).

Telemedicine can improve access to treatment and facilitate better monitoring of blood pressure, which in turn helps manage hypertension at home (Pan et al., 2024). With the support of technology, patients can communicate directly with healthcare providers, allowing faster and more responsive treatment adjustments to changes in their health conditions—a more integrated approach, including support from caregivers and technology to monitor the patient's condition (Duggal et al., 2025). By prioritizing weaknesses, home care services can more effectively manage hypertension and prevent further complications—by developing health management apps designed to help hypertension patients at home. The app allows patients to track their blood pressure, remind them of medications, and provide educational information about hypertension. By utilizing this technology, elderly patients can be more involved in their care, contributing to better hypertension management. Family involvement in the care of elderly patients can improve medication adherence and blood pressure control. This shows that strong social support from the family can strengthen the effectiveness of home care services. Better health literacy among elderly patients with hypertension is associated with better health outcomes. Home care services can play a role in improving health literacy through education and support provided by caregivers so that patients better understand their condition and the importance of medication adherence.

## CONCLUSIONS

The results of this study support the hypothesis that home care can be an effective strategy for managing hypertension in the elderly. With a comprehensive approach, including education, monitoring, and support, home care can help seniors achieve better blood pressure control and improve their quality of life. Home care services have been proven to have a significant positive impact on hypertension management in the elderly. Substantial blood pressure reductions, emotional support, effective education, and healthier lifestyle changes all contribute to improved hypertension control. Therefore, integrating home care services in the healthcare system for the elderly is highly recommended to improve physical health and overall quality of life.

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