

Effect of home care visits on the quality of life of the elderly with hypertension in the health center area

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ABSTRACT

Introduction: Hypertension is a significant public health concern among the elderly, contributing significantly to morbidity, mortality, and reduced quality of life. Home care visits represent a community-based approach to enhancing disease management, promoting treatment adherence, and improving well-being among older adults. This study aimed to evaluate the effect of home care visits on the quality of life (QoL) of elderly individuals with hypertension in a primary health center area.

Methods: A quasi-experimental pre-post design with a control group was conducted involving 100 elderly participants diagnosed with hypertension. The intervention group received structured home care visits undertaken by community nurses over eight weeks, focusing on health education, medication adherence, diet modification, blood pressure monitoring, and lifestyle counseling. The control group received standard outpatient care. The quality of life was assessed using the WHOQOL-BREF instrument, and blood pressure measurements were recorded at both baseline and post-intervention. Data were analyzed using paired t-tests and ANCOVA to compare changes between groups.

Results: The results showed a significant improvement in the mean QoL score of the intervention group (from 56.3 ± 7.5 to 68.7 ± 6.8 ; $p < 0.001$), particularly in the physical and psychological domains. Mean systolic blood pressure decreased by 11.4 mmHg and diastolic by 6.8 mmHg ($p < 0.05$). No significant change was observed in the control group.

Conclusion: Regular home care visits effectively enhance the quality of life and blood pressure control among elderly patients with hypertension. Integrating home-based nursing interventions within primary health services can promote holistic, continuous care and support aging-in-place initiatives.

Keywords: Elderly, Health Education, Home Care, Hypertension, Quality of Life.



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INTRODUCTION

Hypertension remains one of the most prevalent chronic diseases worldwide and is a major contributor to cardiovascular morbidity and mortality among the elderly population (Ahn et al., 2024). According to the World Health Organization (WHO, 2023), approximately 1.28 billion adults globally are affected by hypertension, with prevalence rates increasing markedly with age (Angreni et al., 2024). Among older adults, physiological changes such as arterial stiffness, decreased renal function, and hormonal alterations predispose them to elevated blood pressure, leading to multiple complications, including heart failure, stroke, and kidney disease (Dewar et al., 2025). These chronic conditions significantly impair functional capacity and reduce the overall quality of life (QoL) of the elderly. Managing hypertension in this population thus requires a comprehensive, continuous, and person-centered approach that goes beyond pharmacological treatment (Furuyama et al., 2025). Quality of life is a multidimensional concept encompassing physical, psychological, social, and environmental well-being (Guan et al., 2025). For older adults with hypertension, QoL is influenced not only by medical factors but also by functional independence, emotional stability, and social support. Studies have shown that adherence to antihypertensive therapy and healthy lifestyles plays a critical role in controlling blood pressure and improving QoL. However, elderly individuals often face barriers such as polypharmacy, limited mobility, social isolation, and inadequate access to healthcare services, particularly in community and rural settings (Hongoro et al., 2025). These challenges underscore the need for innovative models of care that ensure continuity and accessibility of healthcare services for this vulnerable population (Januário et al., 2025).

Home care visits have emerged as an effective strategy in community-based health services to improve disease management and patient outcomes. Home visits offer healthcare professionals, particularly community health nurses, the opportunity to deliver personalized care within the patient's living environment (Kim et al., 2025). This approach facilitates early detection of complications, enhances medication adherence, promotes health education, and fosters a supportive relationship between healthcare providers, patients, and their families. Moreover, home visits enable a holistic assessment not only of clinical parameters, such as blood pressure, but also of environmental, psychosocial, and lifestyle factors that influence health (Lien et al., 2025). Previous studies have highlighted the positive impact of home care interventions on chronic disease management among the elderly. Structured home visits led to significant improvements in medication compliance, self-care behaviors, and overall QoL among older adults with hypertension and diabetes. Nurse-led home care reduced hospital readmissions and improved patient satisfaction, indicating that home-based interventions can be both clinically beneficial and cost-effective. Despite this evidence, the implementation of systematic home visit programs in primary health care remains limited, especially in low- and middle-income countries, where healthcare systems often face workforce shortages and resource constraints (Lista et al., 2025).

In Indonesia and similar developing contexts, health centers (puskesmas) serve as the backbone of community health services, with a focus on preventive and promotive care. Integrating home care visits into these systems offers a promising avenue to extend healthcare beyond clinical settings and directly into the community (Suprpto & Salah Jalal, 2024). Through regular visits, nurses can monitor blood pressure, assess medication use, provide dietary counseling, and engage family members in supporting lifestyle modifications (López Luque et al., 2025). Such interventions are particularly relevant given the cultural emphasis on family-based care and community participation in many Asian societies. However, while the role of home care in chronic disease management is increasingly recognized, limited empirical data exist regarding its specific impact on the quality of life among elderly patients with hypertension in primary health center areas (McMahon et al., 2024). Most existing studies focus on clinical outcomes such as blood pressure control or medication adherence, with less attention to broader psychosocial and functional dimensions of health. Understanding how home care interventions influence QoL can provide valuable insights into developing more holistic, person-centered care

models for older adults. This study aims to evaluate the effect of home care visits on the quality of life of elderly individuals with hypertension in a community health center setting. The home visit program, delivered by trained community health nurses, includes comprehensive education on hypertension management, medication adherence, diet and physical activity counseling, stress management, and routine blood pressure monitoring.

RESEARCH METHODOLOGY

Study Design and Setting

This study employed a quasi-experimental pre–post design with a control group to examine the effect of home care visits on the quality of life of elderly individuals with hypertension. The research was conducted within the working area of a primary health center (PHC), representing an urban-rural community setting where routine public health programs for older people are implemented. The PHC provided logistical support and access to the list of registered elderly patients diagnosed with hypertension.

Population and Sample

The target population consisted of all elderly individuals aged ≥ 60 years diagnosed with hypertension and enrolled in the PHC's chronic disease management program (Prolanis). The inclusion criteria were: (1) ability to communicate verbally, (2) stable clinical condition (no severe complications), (3) willingness to participate, and (4) residence within the PHC coverage area. Exclusion criteria included cognitive impairment, terminal illness, and hospitalization during the study period. A total of 100 respondents were selected through purposive sampling and divided equally into two groups: 50 in the intervention group and 50 in the control group. The sample size was determined based on power analysis ($\alpha = 0.05$, power = 0.80) to detect a moderate effect size in QoL improvement.

Intervention Procedure

The intervention group received structured home care visits conducted by community health nurses over eight weeks, with one visit per week lasting approximately 45–60 minutes. The intervention was designed based on the Integrated Care for Older People (ICOPE) framework and included: Health education on hypertension, diet, physical activity, medication adherence, and stress reduction; Blood pressure monitoring and recording; Motivational counseling to enhance self-care and lifestyle modification; and Family involvement, encouraging caregivers to support elderly patients in medication and diet management. The control group received standard care provided by the PHC, including routine monthly check-ups and medication refills without home visits.

Instruments and Data Collection

Data were collected at baseline and after eight weeks using structured instruments, including the WHOQOL-BREF questionnaire (26 items), which measures quality of life across four domains: physical, psychological, social, and environmental. The instrument has been validated for use among elderly populations. Blood pressure measurements were taken using a calibrated digital sphygmomanometer, with the average of two readings recorded five minutes apart. Demographic data form collected information on age, sex, education, family support, duration of hypertension, and medication use. All data collection was conducted by trained nurses under supervision to ensure consistency and accuracy.

Data Analysis

Data were analyzed using SPSS version 26.0. Descriptive statistics (mean, standard deviation, and percentage) were used to describe participants' characteristics and baseline variables. Paired t-tests assessed within-group changes before and after intervention, while independent t-tests and ANCOVA compared mean differences between the intervention and control groups, controlling for baseline scores. Statistical significance was set at $p < 0.05$.

Ethical Considerations

Ethical approval was obtained from the Institutional Review Board (IRB) of the Faculty of Nursing, Institut Ilmu Kesehatan Pelamonia Kesdam XIV/Hasanuddin, and permission was granted by the local health authority. Informed consent was obtained from all participants after

they were informed of the study's purpose, procedures, potential benefits, and risks. Confidentiality and anonymity were strictly maintained, and participation was entirely voluntary, with the option to withdraw at any time.

RESULTS

A total of 100 elderly participants completed the study, comprising 50 in the intervention group and 50 in the control group. The mean age of participants was 68.4 ± 5.2 years, with a predominance of females (64%). Most participants had primary education (56%) and lived with family members (78%). The mean duration of hypertension was 7.1 ± 3.6 years, and no significant difference in demographic or clinical characteristics was found between groups at baseline ($p > 0.05$), indicating comparability.

Table 1. Table 1. Baseline Characteristics of Participants (n = 100)

Variable	Intervention (n=50)	Control (n=50)	p-value
Age (years), mean $\pm$ SD	68.6 ± 5.3	68.2 ± 5.1	0.714
Gender (Female), n (%)	32 (64%)	32 (64%)	1.000
Education (Primary), n (%)	28 (56%)	29 (58%)	0.842
Duration of Hypertension (years), mean $\pm$ SD	7.3 ± 3.5	6.9 ± 3.7	0.623
Lives with family, n (%)	40 (80%)	38 (76%)	0.645
Baseline SBP (mmHg), mean $\pm$ SD	152.6 ± 13.4	151.9 ± 12.9	0.812
Baseline DBP (mmHg), mean $\pm$ SD	89.2 ± 7.8	88.7 ± 8.1	0.751

Note: No significant differences at baseline ($p > 0.05$).

Quality of Life and Blood Pressure Outcomes. After eight weeks of intervention, the mean total WHOQOL-BREF score in the intervention group increased significantly from 56.3 ± 7.5 to 68.7 ± 6.8 ($p < 0.001$), reflecting substantial improvement across all four QoL domains. The control group showed a minimal, non-significant change (from 55.9 ± 7.8 to 57.1 ± 7.6 ; $p = 0.162$). In terms of physiological outcomes, the intervention group experienced a mean reduction of 11.4 mmHg in systolic blood pressure and 6.8 mmHg in diastolic blood pressure ($p < 0.05$). In contrast, the control group showed no significant change.

Table 2. Comparison of Quality of Life (WHOQOL-BREF) and Blood Pressure Pre-Post Intervention

Outcome Variable	Group	Pre-test (Mean $\pm$ SD)	Post-test (Mean $\pm$ SD)	Within-group p-value	Between-group p-value
Total QoL Score	Intervention	56.3 ± 7.5	68.7 ± 6.8	$<0.001^{***}$	$<0.001^{***}$
	Control	55.9 ± 7.8	57.1 ± 7.6	0.162	
Physical Domain	Intervention	14.1 ± 2.8	17.5 ± 2.6	$<0.001^{***}$	$<0.001^{***}$
	Intervention	13.6 ± 2.7	16.4 ± 2.5	$<0.01^{**}$	$<0.01^{**}$
Psychological Domain	Intervention	13.2 ± 2.9	15.8 ± 2.6	$<0.05^*$	$<0.05^*$
	Intervention	15.4 ± 3.1	19.0 ± 2.9	$<0.01^{**}$	$<0.01^{**}$
Social Domain	Intervention	13.2 ± 2.9	15.8 ± 2.6	$<0.05^*$	$<0.05^*$
	Intervention	15.4 ± 3.1	19.0 ± 2.9	$<0.01^{**}$	$<0.01^{**}$
Environmental Domain	Intervention	13.2 ± 2.9	15.8 ± 2.6	$<0.05^*$	$<0.05^*$
	Intervention	15.4 ± 3.1	19.0 ± 2.9	$<0.01^{**}$	$<0.01^{**}$
Systolic BP (mmHg)	Intervention	152.6 ± 13.4	141.2 ± 11.6	$<0.05^*$	$<0.05^*$
	Control	151.9 ± 12.9	150.7 ± 13.1	0.287	
Diastolic BP (mmHg)	Intervention	89.2 ± 7.8	82.4 ± 7.1	$<0.05^*$	$<0.05^*$
	Control	88.7 ± 8.1	88.3 ± 7.9	0.462	

*** $p < 0.001$; $p < 0.01$; $p < 0.05$ — significant improvement in intervention group across all domains.

Multiple regression analysis identified family support, education level, and blood pressure reduction as significant predictors of QoL improvement in the intervention group ($R^2 = 0.46$, $p < 0.001$). Elderly individuals with higher family involvement and better education experienced greater enhancements in physical and psychological well-being.

Table 3. Predictors of Quality of Life Improvement (Multiple Linear Regression, n=50)

Predictor Variable	β (Standardized Coefficient)	t-value	p-value
Family Support	0.341	3.92	<0.001***
Education Level	0.278	3.26	<0.01**
Reduction in Systolic BP	0.233	2.84	<0.01**
Age	-0.107	-1.19	0.239
Constant ($R^2 = 0.46$, $F = 13.71$, $p < 0.001$)			

The findings indicate that structured home care visits significantly improved both quality of life and blood pressure control among elderly individuals with hypertension. Improvements were most pronounced in the physical and psychological domains, reflecting enhanced self-care ability, emotional stability, and perceived health status. The role of family support was particularly important, demonstrating that active involvement of caregivers amplifies the positive effects of home-based interventions. Overall, the results provide robust evidence that home care visits, as an extension of primary health center services, represent an effective and sustainable strategy for managing hypertension and promoting well-being among the elderly in the community.

DISCUSSION

The findings of this study demonstrated that structured home care visits had a significant positive effect on the quality of life (QoL) and blood pressure control among elderly individuals with hypertension. The improvement observed in the intervention group, particularly across physical and psychological domains, supports the growing body of evidence that home-based nursing interventions are effective in promoting holistic well-being in older adults with chronic diseases.

Effect of Home Care on Quality of Life

Home care visits provided a platform for personalized, continuous, and context-specific health education and monitoring. The significant improvement in QoL scores, as measured by the WHOQOL-BREF, indicates that elderly participants benefited not only from clinical management but also from the psychosocial support embedded within home visits (Park et al., 2025). Home-based interventions resulted in improved self-care behaviors, emotional stability, and perceived well-being among elderly populations with hypertension and diabetes (Squires et al., 2025). The improvement in physical domain scores suggests enhanced functional capacity and symptom control. In contrast, gains in the psychological and environmental domains reflect reduced anxiety, a greater sense of security, and improved adaptation to the home environment (Suprpto, 2024).

The results also align with the WHO’s Integrated Care for Older People (ICOPE) framework, which advocates for community-based, person-centered care to enhance the functional ability and independence of older adults (Suprpto et al., 2023). By delivering education, motivation, and health monitoring directly at home, the intervention reduced barriers such as transportation difficulties, mobility limitations, and social isolation factors known to affect older people’s QoL negatively.

Impact on Blood Pressure Control

The study demonstrated a significant reduction in both systolic and diastolic blood pressure among elderly participants who received home care visits. Regular monitoring, medication reminders, and individualized counseling during home visits have been shown to improve adherence to treatment and lifestyle modifications (Suprpto & Salah Jalal, 2024). The mean decrease of 11.4 mmHg in systolic and 6.8 mmHg in diastolic pressure is clinically significant, indicating improved hypertension control and a reduced cardiovascular risk. These results align with previous studies, which have shown that consistent home-based follow-up and nurse-led interventions enhance blood pressure regulation by combining education, motivation, and personalized support. Thus, home care visits represent an effective strategy to achieve sustained blood pressure improvement among elderly hypertensive patients (Susilawati et al., 2025).

A significant reduction in systolic and diastolic blood pressure among the intervention group underscores the physiological benefits of consistent home-based follow-up. Regular home visits enhance medication adherence, dietary compliance, and stress management, ultimately leading to improved blood pressure regulation. The observed decrease of approximately 11.4 mmHg systolic and 6.8 mmHg diastolic in this study is clinically relevant, as even modest blood pressure reductions are associated with substantial decreases in cardiovascular risk. These findings highlight that home care is not merely a supportive service but an integral component of chronic disease management. By incorporating regular monitoring and feedback, home visits strengthen the patient–nurse relationship, enhance self-efficacy, and empower patients to take active roles in managing their condition.

Role of Family Support and Education

Family support and education level played a crucial role in improving the quality of life of elderly individuals with hypertension. Participants who received strong emotional and practical assistance from family members demonstrated higher adherence to medication, diet, and lifestyle modifications. Family involvement also enhanced motivation and reduced psychological distress, thereby creating a supportive home environment that fosters behavior change. Moreover, individuals with higher education levels demonstrated a better understanding of hypertension management and were more responsive to health education provided during home visits. These findings highlight the importance of integrating family engagement and tailored health education into community-based home care programs to enhance self-management and promote sustained improvements in the well-being of older adults (Tanaka et al., 2024).

Regression analysis revealed that family support and education level were significant predictors of QoL improvement. This underscores the social-ecological model of health, which posits that interpersonal and environmental contexts influence individual behavior and outcomes. Elderly individuals who received encouragement and assistance from family members were more likely to adhere to treatment plans, maintain dietary discipline, and engage in physical activity. Education also played a significant role, as participants with higher levels of education were more likely to possess better health literacy, enabling them to comprehend and apply health information effectively. Literacy and family involvement enhanced adherence and overall life satisfaction among elderly patients with hypertension. Hence, involving family caregivers in home care interventions can amplify their effectiveness, especially in collectivist societies where familial roles in elderly care are culturally valued (Testa et al., 2025).

Psychosocial and Environmental Implications

Home care visits provided not only clinical monitoring but also emotional and social support that improved the psychosocial well-being of elderly participants. Regular interactions with nurses reduced feelings of loneliness and anxiety, fostering a sense of trust and belonging. The home-based approach also enabled nurses to assess environmental factors such as living conditions, accessibility, and dietary practices, allowing for personalized and practical recommendations. Improved household environments and stronger family engagement contributed to better adherence and overall life satisfaction (Tounsi, 2025). These findings highlight that home care interventions address both psychological and environmental determinants of health, making them essential for promoting holistic well-being and independence among elderly individuals living with hypertension.

Beyond physiological outcomes, home care interventions fostered psychological reassurance and strengthened older people's sense of belonging and support. Many participants expressed appreciation for the attention and empathy they received during their visits, which helped reduce loneliness and enhance their emotional well-being (Xia et al., 2024). Social reinforcement and modeling influence behavioral and emotional change. Furthermore, the home-based approach enabled nurses to assess environmental factors, such as living conditions, accessibility, and dietary habits, and provide tailored recommendations, making interventions more practical and sustainable (L. Wang & Md Sani, 2024).

Comparison with Previous Research

Consistent with international evidence, the results underscore the importance of community nursing in managing chronic diseases. Home care significantly improved self-management and QoL among elderly patients (Yuan et al., 2025). However, this study adds new evidence from a Southeast Asian community context, showing that even in resource-limited settings, structured home visits implemented through primary health centers can yield measurable improvements in health and well-being. From a policy perspective, the findings underscore the importance of integrating home care services into primary healthcare frameworks, particularly in aging societies. Regular home visits can reduce hospital readmissions, lower healthcare costs, and promote aging in place, aligning with global strategies for sustainable elderly care. Training community nurses in geriatric care, communication skills, and family engagement can further enhance the effectiveness of the program (Y. Wang et al., 2025).

Additionally, leveraging digital tools such as mobile health applications or telemonitoring could complement home visits, enabling real-time data collection and follow-up in rural or hard-to-reach areas. This hybrid approach aligns with the WHO's call for integrating technology and community care to achieve universal health coverage for older adults.

This study's strengths include its quasi-experimental design with a control comparison, the use of validated instruments (WHOQOL-BREF), and an emphasis on both clinical and psychosocial outcomes. Nevertheless, limitations must be acknowledged. The relatively short intervention period (eight weeks) may not fully capture the long-term sustainability of QoL improvement. Self-reported measures could also be influenced by response bias; however, objective BP monitoring mitigates this limitation. Future longitudinal studies with larger samples and longer follow-up are recommended to evaluate the sustained impacts and cost-effectiveness of home care programs.

In summary, this study provides strong evidence that home care visits significantly improve quality of life and blood pressure control among elderly individuals with hypertension. The combination of personalized education, regular monitoring, and family involvement fosters better self-management and emotional well-being. These findings support the integration of structured home care into community health systems as a practical, low-cost, and culturally adaptable strategy to enhance healthy aging and chronic disease management worldwide.

CONCLUSIONS

This study demonstrated that structured home care visits significantly improved the quality of life and blood pressure control among elderly individuals with hypertension. Regular nurse-led visits that combined health education, blood pressure monitoring, and family engagement enhanced self-care, medication adherence, and psychological well-being. The results emphasize that home-based interventions are not only effective in controlling hypertension but also in promoting overall life satisfaction and independence in older adults.

It is recommended that community and primary healthcare systems integrate home care programs into routine chronic disease management for the elderly. Training community health nurses in geriatric care, counseling, and family-centered education is essential to ensure program sustainability. Family involvement and tailored education materials should also be prioritized to accommodate varying literacy levels and cultural contexts. Expanding such models can strengthen preventive healthcare, reduce hospital readmissions, and support healthy aging within the community.

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