



The Effectiveness of Brisk Walking Exercise on Blood Pressure Changes in Older Adults with Hypertension

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Article Information	ABSTRACT
Received : 04 May 2026 Revised : 09 June 2026 Accepted : 29 June 2026	Hypertension is a common chronic disease in the elderly population and can increase the risk of cardiovascular disorders if not optimally managed and controlled. In addition to pharmacological therapy, non-pharmacological interventions in the form of physical activity are recommended as part of hypertension management. Brisk walking exercise, also known as brisk walking, is a form of physical activity that is practical and easy for the elderly to perform. The purpose of this case study was to examine changes in blood pressure in elderly women with hypertension after brisk walking exercise. This study used a descriptive research method with a case study approach through the application of the nursing process. The study subjects consisted of four elderly women with hypertension. The nursing process was carried out through the stages of assessment, establishing a nursing diagnosis, planning, implementation, and evaluation. The brisk walking exercise intervention was administered five times over a two-week period, with each session lasting approximately 30 minutes. Blood pressure checks were performed pre-intervention and post-intervention. All participants showed a decrease in both systolic and diastolic blood pressure after the brisk walking exercise program. The results showed that brisk walking exercise is effective in reducing blood pressure in elderly women with hypertension. The implication of this study is that brisk walking exercise can be recommended as a safe, easy-to-implement, and low-cost community nursing intervention in efforts to control blood pressure and prevent complications of hypertension in the elderly.
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Introduction

As part of NCDs, hypertension is one of the main causes of increased incidence of pain and death, especially among geriatricians in various countries. The World Health Organization (2023) states that hypertension still occupies a position as one of the factors that affect the increase in the main risk of developing cardiovascular diseases, with the prevalence rate continuing to increase as the world's population ages. Physiological changes in old age, such as decreased flexibility of blood vessels accompanied by increased peripheral resistance, cause this group to be more susceptible to high blood pressure.

The still high proportion of hypertension cases in the elderly group makes this condition one of the public health issues faced by Indonesia. Blood pressure control in the elderly is often not optimal due to dependence on pharmacological therapy without being balanced by healthy lifestyle changes. In fact, effective management of hypertension requires a combination of drug therapy and ongoing nonpharmacological interventions (Rodrigues et al., 2022). Non-pharmacological efforts in controlling hypertension are carried out through food intake regulation, stress management, and regular increase in physical activity. Regular physical exercise has been shown to play a role in improving cardiovascular function, contributing to lowering blood pressure and reducing the risk of hypertension complications in the elderly (Stephen et al., 2022). Studies have shown that lifestyle modifications play an important role in helping to control blood pressure and prevent complications of hypertension. Research by Ulfa et al. (2022) proves that hypertension gymnastics is significantly able to lower systolic and diastolic blood pressure in hypertensive patients. In addition, Khodijah and Nugroho (2022) explained that the provision of *health education* combined with relaxation therapy is effective in improving healthy living behaviors while helping to lower blood pressure in hypertensive patients. Islamic research (2023) also suggests that non-pharmacological therapy through the use of herbal ingredients and lifestyle changes is an alternative that can support blood pressure control in the hypertensive elderly. The findings suggest that nonpharmacological interventions have an important role in the management of hypertension. Therefore, a form of physical exercise that is safe, easy to do, and in accordance with the abilities of the elderly is needed.

One type of physical exercise that is recommended for people with hypertension is *brisk walking exercise*. Several studies have proven the effectiveness of *brisk walking exercise* in lowering blood pressure in people with hypertension. Research conducted by Supriyanto et al. (2026) showed that regular *brisk walking exercise* provided a significant reduction in systolic

and diastolic blood pressure in the elderly with hypertension. Similar results were also reported by Prajayanti and Septiana (2023), who found that *brisk walking exercise* had a significant effect on reducing blood pressure in the hypertensive elderly after being done regularly. In addition, Julistyanissa and Chanif (2022) reported that the application of *brisk walking exercise* in hypertensive patients was able to lower blood pressure after intervention, so that it can be used as one of the complementary therapies in hypertension management. As a form of moderate-intensity aerobic exercise, brisk walking is done by walking briskly which can gradually increase heart rate, improve blood circulation, and contribute to a decrease in systolic and diastolic blood pressure (Rodrigues et al., 2022). This exercise does not require special tools, is easy to apply in a community setting, and is relatively safe for the elderly. *Brisk walking exercise* has been shown to have effects related to lowering blood pressure in the elderly population with hypertension based on research findings. According to Supriyanto et al. (2026), brisk walking exercises that are carried out regularly have been proven to have a significant effect on reducing systolic and diastolic blood pressure in the elderly with hypertension. In addition, other studies also explain that the more regularly brisk walking exercises are carried out, the more likely they are to decrease blood pressure (Sari & Puspita Sari, 2023). Although these studies have shown the effectiveness of *brisk walking exercise*, most of them use quantitative, *pre-experimental*, and intervention studies with a focus on analyzing the effect on blood pressure. Research that applies a nursing process approach through case studies in the elderly with hypertension is still relatively limited. In addition, there are not many studies that comprehensively describe the application of nursing care starting from the assessment stage, nursing diagnosis, planning, implementation, to evaluation of the results of *brisk walking exercise* interventions. Therefore, this study was conducted to describe the application of *brisk walking exercise* as a nursing intervention in elderly women with hypertension through a case study approach, so that it is expected to provide a more comprehensive picture of the implementation of the intervention in community nursing practice.

Based on the results of initial observations in Siwal Village, Baki District, Sukoharjo Regency, there are still many elderly people with hypertension who have not done regular physical activity and only rely on pharmacological treatment. This condition has the potential to cause blood pressure to not be optimally controlled. Therefore, community-based

interventions that are simple and easy to apply are needed, one of which is through *brisk walking exercises*.

Based on this presentation, *brisk walking exercise* has been proven to provide benefits in lowering blood pressure in hypertensive patients. However, research examining the application of these interventions through a nursing process approach with a case study design on the elderly at the community level is still limited. In addition, the implementation of *brisk walking exercises* on the elderly in Siwal Village, Baki, Sukoharjo has never been reported, so the effectiveness of this intervention in the context of local community characteristics is not yet known. Therefore, this study is important to provide an overview of the application of *brisk walking exercise* as a nonpharmacological nursing intervention and evaluate its effectiveness on changes in blood pressure in the elderly with hypertension. The results of this study are expected to be additional scientific evidence as well as a basis for community nurses to develop simple, safe, easy-to-implement, and low-cost interventions to help control hypertension in the elderly. The researcher is interested in conducting a study entitled "The Effectiveness of *Brisk Walking Exercise* on Changes in Blood Pressure in the Elderly with Hypertension" to determine the effectiveness of these non-pharmacological interventions in blood pressure management in the population of elderly women with hypertension in Siwal Village, Baki, Sukoharjo.

Method

This study applies a case study method with a descriptive design through the application of a nursing care process approach. The approach consists of a series of review processes, determination of nursing diagnoses, preparation of action plans, implementation of interventions, and evaluation of nursing care outcomes. Through this approach, the process of providing nursing care to the elderly with hypertension is described systematically. This case study used four elderly female participants who were diagnosed with hypertension and met the established inclusion criteria. The nursing intervention provided was in the form of *brisk walking exercise* as a non-pharmacological therapy. The implementation of *brisk walking exercises* was given five times over a two-week period, each exercise session lasted about 30 minutes. The exercise is carried out by combining brisk walking and light aerobic movements, adjusted to the condition and physical ability of the elderly. Walking speed was set in moderation to keep respondents safe and comfortable during the intervention. Regular *administration of brisk walking exercise* is expected to affect the cardiovascular system through

increased cardiac output and improved heart function. These physiological adaptations play a role in increasing the capacity of the heart ventricles and the efficiency of blood pumping, thus playing a role in lowering blood pressure in the elderly with hypertension. The assessment is carried out through a comparison of systolic and diastolic blood pressure results before and after therapy is given

Research Results

This study involved four elderly women who suffered from hypertension and participated in *the brisk walking exercise* intervention. All respondents are in the elderly age range and are able to participate in physical exercise without significant obstacles.

Table 1. Characteristics of Research Subjects

Respondent	Age (Years)	Gender	Category: Hypertensile
Mrs. M	63	Women	Hypertension of the 1st degree
Mrs. S	70	Women	Hypertension degree 2
Mrs. P	65	Women	Hypertension of the 1st degree
Mrs. A	69	Women	Hypertension degree 2

Blood Pressure Before Intervention

In the pre-intervention *stage of brisk walking exercise*, all respondents were in the category of 1st and 2nd degree hypertension based on their blood pressure.

Table 2. Blood Pressure Before Intervention

Respondent	Sistolic (mmHg)	Diastolic (mmHg)
Ny. M	153	92
Mrs. S	166	98
Ny. P	148	94
Ny. A	172	100

Blood Pressure After Intervention

All respondents experienced decreased changes in systolic and diastolic blood pressure after undergoing *the brisk walking exercise* intervention five times over a two-week period.

Table 3. Blood Pressure After Intervention

Respondent	Sistolic (mmHg)	Diastolic (mmHg)
Ny. M	139	86
Mrs. S	150	90
Ny. P	136	88
Ny. A	153	92

Pre and Post Intervention Blood Pressure Changes

Table 4. Pre-Post Blood Pressure Changes

Respondent	Systolic Decrease (mmHg)	Diastolic Decrease (mmHg)
Ny. M	-14	-6
Mrs. S	-16	-8

Ny. P	-12	-6
Ny. A	-19	-8

Average Results of Respondents' Blood Pressure

Table 5. Average Blood Pressure Before and After the Intervention

Variabel	Sistolic (mmHg)	Diastolic (mmHg)
Average before intervention	159.75	96
Average after intervention	144.50	89
Average decline	15.25	7

Blood pressure checks using pre-intervention and post-intervention sphygmomanometers showed a decrease in systolic and diastolic blood pressure in participants after the implementation of *brisk walking exercise*. A decrease in systolic values was recorded in the range of 12–19 mmHg, while diastolic blood pressure decreased by about 6–8 mmHg. The occurrence of an average decrease in blood pressure after intervention showed a positive contribution of *brisk walking exercise* in controlling blood pressure in elderly women with hypertension.

Discussion

The results of the study show that the goal of the study has been achieved, which is to prove that the administration of *brisk walking exercise* is effective in lowering blood pressure in the elderly with hypertension. The decrease was seen in both indicators measured, namely systolic blood pressure and diastolic blood pressure after respondents followed the intervention for five times in two weeks. The reduction in systolic blood pressure in this study showed that *brisk walking exercise* as a moderate-intensity aerobic activity was able to increase blood vessel elasticity, improve endothelial function, and reduce peripheral vascular resistance so that systolic blood pressure decreased (Lee et al., 2021). In addition, this study also showed a decrease in diastolic blood pressure after the administration of *brisk walking exercise*. The decrease is thought to occur due to increased production of *nitric oxide* which stimulates vasodilation and improves endothelial function, so that diastolic blood pressure becomes more controlled (Lee et al., 2021). These findings are consistent with a *systematic review and meta-analysis* by Malem et al. (2024) which reported that *brisk walking exercise* has a significant effect on reducing systolic and diastolic blood pressure in hypertensive patients through improved endothelial function and vascular vasodilation. The results of this study are also in line with Lesnussa et al. (2024) who showed that *brisk walking exercise* has a significant effect

on lowering blood pressure ($p < 0.05$), thus further strengthening the evidence that this intervention is effective as a non-pharmacological therapy to control hypertension in the elderly.

From a physiological aspect, *brisk walking exercise* can increase heart output and help improve the body's metabolic processes. This activity also encourages more optimal utilization of glucose and fat and inhibits the accumulation of plaque in blood vessels. This mechanism helps to decrease blood pressure gradually but continuously (Rachmatullah et al., 2022). Regular walking activities can also suppress the activity of the sympathetic nervous system, thereby helping to maintain blood pressure stability (Mandini et al., 2021). The findings of the analysis showed that the tendency for blood pressure drops in respondents was not uniform, with individuals with higher initial blood pressure showing greater decreases. This condition occurs due to the presence of a wider capacity for physiological change after the intervention is given. The results of this study are in line with Mandini et al. (2021) who reported that walking interventions in hypertensive patients resulted in a more pronounced reduction in blood pressure, especially in individuals with high initial blood pressure.

The decrease in blood pressure obtained in this study is suspected to be influenced by the implementation of *brisk walking exercise* which is done regularly five times for two weeks. The consistent implementation of interventions allows physiological adaptations to occur so as to have an effect on reducing blood pressure in respondents. In addition, the characteristics of the respondents, who are all elderly, also show that moderate intensity physical activity can still be applied well as an effort to control hypertension. However, the magnitude of the decrease in blood pressure in each respondent was likely influenced by individual factors that were not specifically analyzed in this study, such as body mass index (BMI), length of hypertension, level of adherence to exercise, and use of antihypertensive drugs. These factors are known to affect responses to physical activity interventions so they need to be considered in the interpretation of results and subsequent research. In people's daily lives, the conditions found in Siwal Baki Village show that most of the elderly are still more dependent on pharmacological treatment and have not carried out physical activity optimally.

This situation is in line with the results of research by Fatmawati et al. (2024) which stated that the habit of regular walking in the elderly with hypertension is still relatively low, even though the intervention has been proven to be effective in reducing blood pressure. These findings show that there is still a difference between the practices that occur in the community

and the existing scientific recommendations. Viewed from the perspective of community nursing, the results of this study make an important contribution to health service practice. Nurses can implement *brisk walking exercise* as one of the promotive and preventive measures in controlling hypertension. This intervention is relatively simple, does not require large costs, and can be adjusted to the physical abilities of the elderly. In addition, this approach also supports increasing community independence in maintaining and maintaining their health.

The value of novelty in this study lies in the application of novelty *brisk walking exercise* through a community-based nursing care approach using a case study design. Most of the previous studies applied more experimental quantitative designs, while this study focused more on the implementation of interventions directly in nursing practice in the community. This approach is able to provide a more real and contextual picture of the application of interventions in the community environment. Although this study showed a decrease in blood pressure after administration *brisk walking exercise*, the magnitude of the effects obtained differs from the research of Wang et al. (2026). In *systematic review and Bayesian meta-analysis* involving 17 *randomized controlled trials* with 1,493 participants, *brisk walking exercise* It only shows a moderate blood pressure reduction effect. These differences may be influenced by variations in exercise duration and frequency, respondent age characteristics, hypertension severity, and much larger and heterogeneous sample sizes than in this study. In addition, the research of Wang et al. (2026) combines various intervention designs with different exercise doses, while this study applies interventions in a structured manner through a community nursing care approach so that the implementation of the exercise can be monitored directly. This condition is suspected to increase respondents' compliance during the intervention and contribute to the blood pressure reduction results obtained.

This research contributes to the development of community nursing science through three aspects of novelty. First, the novelty of the intervention, namely the application of brisk walking exercise as a nonpharmacological intervention in community nursing care for the elderly with hypertension. Second, the novelty of implementation, namely the implementation of interventions directly in the community environment through a case study approach so as to provide a contextual picture of practice. Third, the novelty of community nursing practices, which shows that brisk walking exercises can be integrated as a promotive and preventive effort in controlling hypertension in the elderly. Thus, this study not only strengthens the evidence for

the effectiveness of brisk walking exercise, but also supports its application in community nursing practice. However, the main limitation of this study is that the sample size is not large, so the resulting findings still need further study before being applied to a wider population. In addition, the use of a study design without a control group also limits the power of explaining cause-and-effect relationships. The short duration of the intervention has also not been able to describe the long-term effects of the intervention. Therefore, the next study is expected to use experimental design by increasing the number of samples and extending the intervention period to obtain more comprehensive results.

In general, this study shows that *brisk walking exercise* is an effective nonpharmacological intervention in helping to lower blood pressure in the elderly. These findings reinforce the physical activity theory that moderate-intensity aerobic exercise can improve cardiovascular function, improve endothelial function, and help lower blood pressure in people with hypertension (Rodrigues et al., 2022). In addition, the results of this study support the concept of hypertension control that places lifestyle modifications, including regular physical activity, as a key component of nonpharmacological therapy (Unger et al., 2023). These findings also reinforce the concept *self-management*, because *brisk walking exercise* is an activity that can be done independently and sustainably so as to help the elderly control their blood pressure (Irwan et al., 2022). From the perspective of community nursing, the results of this study affirm the role of nurses in developing community-based promotive and preventive interventions to increase community participation, independence, and ability to control hypertension. This is in line with the findings of Stephen et al. (2022) who showed that nurse-led interventions (*nurse-led intervention*) effective in improving blood pressure control in hypertensive patients. These results also support the development of community nursing programs that focus on increasing physical activity as an effort to maintain public health. The results of this study can be the basis for the development of a physical activity-based community nursing program for hypertension control in the elderly.

Further studies are recommended to use a Randomized Controlled Trial (RCT) design with a longer intervention duration (8–12 weeks), involving a larger sample count, and adding measures of quality of life, physical fitness, and exercise adherence. In addition, studies can compare the effectiveness of brisk walking exercise with other nonpharmacological

interventions, such as hypertension gymnastics or other aerobic exercises, resulting in more comprehensive evidence on the most effective interventions in community nursing practice.

Conclusion

This study concluded that *brisk walking exercise* has a positive impact on reducing blood pressure in the elderly who experience hypertension. The implementation of interventions has consistently been proven to be able to reduce blood pressure, so that it can be used as one of the options in non-pharmacological therapy that is effective, practical, and easy to apply in community nursing services. In addition, the application of these exercises shows that physical activity adapted to the condition and ability of the elderly can help control hypertension more optimally, especially if done in conjunction with the therapy that is being undergone. Based on the findings of the study, community nurses are advised to include *brisk walking exercises* in promotive and preventive interventions in hypertension management programs in the elderly. Health workers are also expected to be able to provide education and assistance to the elderly so that they can carry out physical activities regularly and continuously. For the public, especially the elderly with hypertension, it is recommended to start implementing *brisk walking exercises* independently while still adjusting to their respective physical conditions. The next study is recommended to develop a study with a more comprehensive methodological design, involving a larger number of respondents, and applying a longer intervention period, so that the results obtained can provide a broader picture and have more optimal generalization power.

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