

ENHANCING FAMILY AUTONOMY IN MANAGING RISING BLOOD PRESSURE AMONG FAMILY MEMBERS THROUGH THE IMPLEMENTATION OF BRISK WALKING EXERCISE

Haris ^{a*}, Early Bella Waliantika^b

^aKaltara Polytechnic, Jalan Pulau Lumpuran Kampung 1 Skip, Tarakan City, 77112, North Kalimantan

^bKaltara Polytechnic, Jalan Pulau Lumpuran Kampung 1 Skip, Tarakan City, 77112, North Kalimantan

**Corresponding author: hariskasuhe@gmail.com*

Abstract

Background: Hypertension is a noncommunicable disease whose prevalence continues to rise and can lead to various chronic conditions if not properly managed. Various efforts to control hypertension, in addition to pharmacological treatment, include engaging in regular and measured physical activity through brisk walking. In the context of family nursing, brisk walking is part of a family's self-management of hypertension. **Case Summary:** The client participating in this case study, a woman and single parent, had had her blood pressure measured at rest, yielding an initial baseline reading of 170/89 mmHg. The client has had elevated blood pressure for the past 5 years but has not started treatment five months ago because she did not experience any bothersome symptoms and was still carrying out her daily activities as usual. Investigation and **Diagnosis:** The client has Grade II hypertension; the nursing diagnosis identified was: ineffective health management. **Management:** The case study was conducted using a family nursing care approach, with an emphasis on achieving the family's primary tasks (TUK) by focusing on the family's independence in performing brisk walking exercises. Interventions were conducted four times a week, with each brisk walking session lasting 30 minutes. The interventions were not performed consecutively but with a 1-day interval. **Outcome:** Blood pressure measurements were taken twice, before and after the intervention. Blood pressure was measured using a digital sphygmomanometer with the client in a seated position and performed by the same nurse. The results showed a decrease in blood pressure; the baseline was 170/89 mmHg, and on the blood pressure reached 119/74 mmHg. The family gained independence in performing brisk walking exercises. **Conclusion:** Conducting a case study through family nursing care, in which the family independently performs brisk walking exercises, can help gradually lower blood pressure gradually.

Keywords: brisk walking exercise; family autonomy, Family Nursing Care; Hypertension;

INTRODUCTION

Hypertension is a noncommunicable disease that can lead to other health conditions if not properly managed. It is one of the most common risk factors for mortality in Indonesia. This condition can persist throughout a person's lifetime and often presents no noticeable symptoms, leading many people to remain unaware of it or even tend to ignore it. Consequently, hypertension leads to heart problems, narrowing of blood vessels, heart attacks, impaired kidney function, kidney failure, and stroke (Masadah et al., 2021).

According to the World Health Organization (WHO), by 2025, 1.5 billion people worldwide will suffer from hypertension, meaning one in three people will be diagnosed with this condition. The number of people with hypertension will continue to rise each year. Furthermore, hypertension is estimated to cause approximately 10.44 million deaths annually and is the leading cause of death globally (Ardi et al., 2023).

In Indonesia, based on the results of the 2023 Indonesian Health Survey (SKI), the prevalence of hypertension among people aged ≥ 15 years was recorded at 30.8%, with the total number of cases reaching approximately 63.3 million people. Of this number, the death toll reached 427,218 people, or about 10.2%, making it the fourth leading cause of death. Hypertension is also a major contributor to the high rate of disability—reaching 22.2% (affecting vision, hearing, and mobility)—in Indonesia. In North Kalimantan, the prevalence is slightly lower at around 33.02%. Meanwhile, in the city of Tarakan, the prevalence of hypertension for the same age group is even lower, at 30.21% (Ministry of Health, 2024).

People with hypertension generally need to take medication regularly to control their blood pressure. Although there are many medication options for treating hypertension, pharmacological therapy often takes a long time and can cause side effects. Therefore, supportive therapy—specifically complementary therapy—is necessary (Ningrum et al., 2024). The WHO recommends engaging in regular physical activity each week, such as light exercise, which can serve as an initial step in managing hypertension before considering medication-based treatment (Yingxiang et al., 2021).

Exercise proven to be effective in lowering blood pressure and suitable for patients with hypertension is moderate-intensity aerobic exercise. One example is Brisk Walking Exercise, performed routinely using a brisk walking technique for 30 minutes per session at a speed of approximately 4 km/h—or about 2 km in 30 minutes—four times a week (Dewi et al., 2023). Brisk walking exercise stimulates muscle contraction and increases oxygen intake, which are functions of the sympathetic nervous system. After physical activity, the body releases endorphins along with sweat, leading to a more relaxed state and a reduced workload on the heart. Brisk walking differs from ordinary walking in that it is performed with the goal of covering a specific distance within 30 minutes (Utami & Silvitasari, 2025).

During aerobic exercise such as brisk walking, performed regularly, blood flow to the blood vessel walls increases due to mechanical stimulation that activates endothelial nitric oxide synthase (eNOS), which in turn stimulates the production of nitric oxide (NO) by the endothelial cells lining the blood vessels. This NO activates cyclic guanosine monophosphate (cGMP), which leads to vasodilation, thereby reducing total peripheral vascular resistance (TPR) and consequently lowering blood pressure (Liang et al., 2024). A case study conducted by Samsuri & Diana Dayaningsih (2021) showed that blood pressure decreased after brisk walking. In Subject I, systolic blood pressure decreased by an average of 3.71 mmHg and diastolic blood pressure decreased by 1.71 mmHg. Subject II experienced an average decrease of 4.41 mmHg in systolic blood pressure and

1.71 mmHg in diastolic blood pressure. Another study showed that brisk walking performed 3–4 times per week can lower blood pressure from 140/90 mmHg to 110/73 mmHg (Lestari et al., 2022). These three studies were conducted with varying frequencies ranging from 3 to 4 times per week and showed consistent results indicating that brisk walking can help lower blood pressure in individuals with hypertension.

The family is the most important element and an integral part of the nursing process. One of the family's functions that must be fulfilled is maintaining the health of family members. Family self-reliance is a goal that must be achieved by nurses working at Community Health Centers (puskesmas) that have families under their care. This family autonomy serves as a key indicator of a family's health status (Haris et al., 2020). The indicators of family autonomy, established by the Ministry of Health, consist of seven criteria. Families must be able to recognize hypertension and decide to actively participate in the nursing care process to manage hypertension in family members. One approach that can support pharmacological therapy for patients with hypertension is brisk walking exercise. This case study involves families in the implementation of a brisk walking exercise program to control blood pressure in family members with hypertension.

CASE PRESENTATION

The client in this case study is Mrs. A, a 49-year-old woman, widowed, who serves as the head of the household (single parent). Her highest level of education is junior high school (SMP). and currently works as a self-employed individual. Based on anthropometric measurements, Mrs. A weighs 63 kg and is 149 cm tall, with a Body Mass Index (BMI) of 28.38; according to the WHO, this BMI falls into the "overweight" category. During the vital signs assessment, the client's health status showed a blood pressure of 170/89 mmHg, a pulse rate of 81 beats per minute, a body temperature of 36.0°C, and a respiratory rate of 18 breaths per minute. The family assessment utilized the family nursing process theory approach by Friedman (Friedman et al., 2014) and was integrated with the family nursing care assessment format from the Indonesian Ministry of Health (Juniarti et al., 2018).

1) Family History and Developmental Stages

Currently, the family is in the adult or middle stage of family development. One unmet developmental task is the child's ongoing education, which has not yet been completed. The family has high hopes that once the child finishes school, they will be able to start working immediately and contribute to the family's economy.

2) Nuclear Family Health History

The client stated that all family members are currently in good health, except for herself, who has been suffering from hypertension for the past 5 years. The client complained of pain in the nape of the neck, heart palpitations, dizziness, blurred vision, and fatigue.

3) Previous Family Health History

The client has had hypertension for 5 months; she rarely undergoes health checkups at the community health center and last sought treatment 5 months ago. The client usually visits the community health center when symptoms such as dizziness, pain in the nape of the neck, a heavy feeling in the shoulders, heart palpitations, and fatigue begin to become increasingly bothersome. The client stated that as long as they do not experience these symptoms, they do not seek treatment because there are no complaints that interfere with their daily activities.

4) The Role of Family Healthcare

- a) Regarding health issues, the family demonstrated a sufficient understanding of hypertension but did not fully understand the other causes of hypertension besides genetic factors and an unhealthy diet.
- b) Regarding decision-making, Mrs. A stated that she does not yet understand the consequences of hypertension if she does not undergo regular treatment. The consequences of hypertension include heart attacks, strokes, and kidney.
- c) failure.
- d) Caring for a sick family member: The family does not yet understand how to manage hypertension, particularly through non-pharmacological methods.
- e) Modifying the environment: The client has not actively taken steps to prevent hypertension; she has only limited her intake of processed foods but has not adopted other healthy lifestyle habits, such as maintaining a healthy weight and managing stress.
- f) Utilizing healthcare facilities: The client only visits the community health center when experiencing bothersome symptoms. The client last visited the center about 5 months ago and received hypertension medication, but did not return for a follow-up checkup after the medication ran out.

5) Assessment of the ill family member

Mrs. A, a 49-year-old woman, is the family member currently experiencing health issues. The client's general condition is fully conscious (*compos mentis*) with a GCS score of 15. Vital sign

measurements show blood pressure of 170/89 mmHg, respiratory rate of 18 breaths per minute, body temperature of 36°C, pulse rate of 81 beats per minute, and no abnormalities were found in the circulatory system. The respiratory system shows no signs of serious impairment. Regarding the urinary system, the client is able to urinate independently, with a frequency of 3–4 times per day, and the urine is not foamy. Regarding the digestive system, there are no complaints regarding eating habits; the client is able to digest food well and consumes up to 4–5 glasses of water per day. A musculoskeletal examination revealed no fractures, tremors, or muscle weakness. Muscle strength was good, posture was normal, and there were no signs of paralysis. The client performed all activities independently.

6) Family Independence Level

The level of family independence is measured based on the Ministry of Health's criteria, which consists of 4 levels with 7 criteria (Juniarti et al., 2018). Mrs. A's family independence level is at Level 1, meeting five criteria: the family is willing to accept the presence of a nurse, and the family accepts health services in accordance with the nursing care plan. However, the family has not yet actively taken preventive measures and lacks the knowledge or awareness to independently carry out promotive efforts to maintain the family's health. During the implementation of the intervention, the family must meet criteria indicating their level of independence by involving one family member in each intervention. In this case study, the client's child consistently accompanied her and was actively involved throughout the intervention.

CLINICAL REASONING

The nursing diagnosis, based on the Indonesian Nursing Diagnosis Standards (PPNI, 2017) and consistent with the assessment, is "ineffective health management"—a pattern in which the regulation and integration of health problem management into daily living habits are insufficient to achieve the desired health status. This diagnosis also aligns with that established by NANDA. 80% of the major criteria have been met, namely:

Subjective: expressing difficulty adhering to the treatment plan; Objective: failure to take actions to reduce risk factors; failure to adhere to the treatment plan; and ineffective daily living activities in meeting health goals.

DIAGNOSTIC ASSESSMENT

Table 4. Summary of relevant diagnostic findings

Examination	Result	Clinical Interpretation
Blood Pressure Measurement	170/89 mmHg	Classified as Grade II Hypertension

The client did not undergo a complete blood count, chest X-ray, or ECG because these are follow-up tests performed at a referral hospital, whereas the client was being examined at a community health center.

THERAPEUTIC INTERVENTION

The recommended treatment for the client's hypertension is amlodipine 5 mg once daily. However, the client has not attended regular follow-up appointments for approximately 5 months because they have not experienced or reported any bothersome symptoms. The client is still able to carry out daily activities. The client's blood pressure measurements indicate Grade II hypertension according to the AHA classification (Johnson et al., 2025). Non-pharmacological interventions were implemented to complement the pharmacological intervention. The client resumed taking amlodipine from their

existing medication supply. After the fifth visit, once the client understood the management and prevention of hypertension, they returned to the community health center for a follow-up examination.

THERAPEUTIC SEQUENCE

Family nursing interventions focus on achieving the family's primary tasks (TUK), which include the family's ability to recognize hypertension-related issues, make decisions regarding hypertension care, care for a sick family member through brisk walking exercises, modify the environment, and utilize health care facilities. Brisk walking exercises are performed 6 hours before or 18 hours after taking amlodipine. This is to prevent the immediate effects of the medication from affecting the client's blood pressure. Before starting the brisk walking exercise, the nurse ensures the client does not experience headaches, chest pain, or shortness of breath while walking. The stages of intervention using the family nursing care approach align with the implementation guidelines at the Community Health Center (Puskesmas), as shown in Table 2 below:

Nursing Diagnoses	General Goal	Specific Objectives (Family for the family)	Standard Indicators	Interventions
Ineffective health management	After conducting visits over the course of 6 visits, health management is expected to improve based on the following outcome criteria: -Taking actions to reduce risk factors -Increased implementation of compliance programs -Daily living activities that effectively meet health goals	TUK 1 Understanding Hypertension 1.1. Understanding the definition of hypertension Understanding the causes of hypertension Understanding the signs and symptoms of hypertension TUK 2 Making decisions	Hypertension is a condition in which blood pressure rises above normal limits, with a systolic pressure of more than 140 mmHg and a diastolic pressure of more than 90 mmHg (Wahyuni et al., 2023). List 4 of the 6 causes of hypertension (Agustina et al., 2024) 1.Eating foods that Are high levels of salt 2.Genetic/hereditary 3.Stress 4.Smoking 5.Age 6.Alcohol consumption List 3 of the 5 signs and Symptom of hypertension (Sugiarto & Waluyo, 2025): 1.Dizziness 2.Headache/pain in the back of the neck 3.Heart palpitations 4.Blurred vision 5. Chest pain List 3 and 4 consequences that may arise if hypertension is left untreated (Paschalia & Juwana, 2024):	Discussing the definition of hypertension Encouraging the family to express their feelings Praise the family's abilities Identifying the family's understanding of the causes of hypertension Discussing the causes and signs and symptoms of hypertension Giving the family an opportunity to ask questions Encouraging the family to identify the causes and signs and symptoms of hypertension Helping families identify the causes and signs and symptoms of hypertension Praise the family for their understanding a.1 Explaining the consequences that may occur if the family does not make a decision

		2.1 regarding the effects/complications of hypertension 2.2 together with the family, make a decision to participate in a treatment/ care	1. Stroke 2. Heart attack 3. Premature death 4. Kidney failure Making the right decision to treat	to treat hypertension 2.a.2 Giving family members the opportunity to ask questions 2.a.3 Encouraging the family to reiterate the explanations that have been provided 2.a.4 Praise the family for their capabilities.
		TUK 3 Caring for a sick family member “Teaching an individual practicing brisk walking exercises	How to demonstrate complementary therapy by performing the Brisk Walking Exercise: 1. Maintain proper posture: while walking, lift your chin and look straight ahead. Keep your back straight, your chest lifted, and your shoulders relaxed. 2. Use your arms: your arms should be at a 90° angle. Gently bend your elbows; avoid clenching your fists. Next, swing your arms from front to back, not from side to side. Make sure your arms stay in front of you and do not cross over.” 3. Take small steps: Walk short steps, while maintaining good posture. Use your arms and legs in a balanced way to make each step easier. 4. Push off with your toes: Roll your foot from heel to toe as it touches the ground. Start from the ball of your foot and continue moving forward. 5. Engage your core and glutes: While walking, make sure to keep your back straight and tilt your pelvis properly. 6. Don’t think of it as a strenuous walk: Avoid swinging your arms with steps that are too wide.	3.a.1 Exploring the family’s experience managing hypertension so far 3.a.2 Praise the family for the efforts they’ve made so far 3.a.3 Discuss with the family how to manage hypertension 3.a.4 Encouraging the family to restate how to manage hypertension at home 3.a.5. Praising the family for correct answers 3.b.1 Demonstrating the Brisk Walking Exercise to manage hypertension 3.b.2 Giving the family an opportunity to ask questions 3.b.3 Motivating the family to participate in the demonstration 3.b.4 Praise the family for their skills 3.b.5 Encouraging the family to try the Brisk Walking Exercise to lower high blood pressure 3.b.6 Asking about the effectiveness of <i>the Brisk Walking Exercise</i> that has been taught.

		TUK 4 Modifying the environment	List at least 3 of the 5 ways to prevent hypertension from recurring: 1. Reducing salt intake 2. Getting enough rest 3. Check blood pressure regularly 4. Avoiding stress 5. Exercise on a regular basis	4.b.1 Discuss with your family ways to prevent hypertension 4.b.2 Encourage your family to restate ways to prevent high blood pressure 4.b.3 Praise the family for correct answers
		TUK 5 Utilizing health care facilities	Healthcare facilities that families can use to prevent hypertension: 1. Hospitals 2. Community health centers 3. Private practices 4. Clinics	5.a.1 Discuss the types of health care facilities available in the family's community 5.a.2 Helping families utilize health care facilities appropriate for their situation 5.a.3 Encouraging families to utilize health of their choice.

CASE TIMELINE

Table 3. Clinical case timeline

Time	Treatment	Outcome
Pre-intervention	1. Discussed with the family to understand hypertension, including its definition, causes, signs, and symptoms (TUK1) 2. Discuss with the family the impact and complications if hypertension is left untreated, and encouraging the family to decide to follow the care and treatment program (TUK 2)	The family listened enthusiastically to the explanation, actively asked questions, and identified and described their experiences regarding the causes and the signs and symptoms they were experiencing
Day 1	1. Teaching and practicing <i>brisk walking exercises</i> accompanied by family members 2. The nurse checks blood pressure before the brisk walking exercise using a digital blood pressure monitor while the patient is seated, in accordance with AHA recommendations 3. Performed <i>a warm-up</i> for about 5 minutes	Pre-exercise BP: 170/89 mmHg Post-exercise BP: 156/91 mmHg Family autonomy level 1

	4. Performing <i>the brisk walking exercise</i> together 5. Performed <i>a cool-down</i> 6. Rest for 10 minutes 7. Measuring blood pressure again	
Day 2	Follow the same steps as on Day 1 with the same nurse and blood pressure cuff	Pre-test BP: 133/81 mmHg Post-test BP: 128/78 mmHg Family autonomy level 2
Day 3	Performed the same steps as on Day 1 with the same nurse and blood pressure monitor	Pre-measurement BP: 129/81 mmHg Post-measurement BP: 125/78 mmHg
Day 4	Monitor the client's <i>brisk walking exercise technique</i> , with family members present	Pre-exercise BP: 126/80 mmHg Post-exercise BP: 119/74 mmHg Family autonomy level 2
Monitoring	Monitoring the client's <i>brisk walking exercise technique</i> , accompanied by family members	Pre-exercise BP: 121/75 mmHg Post-exercise BP: 118/74 mmHg Family autonomy level 3
Follow-up	1. Discuss with the family the preventive measures taken to control blood pressure: maintaining a healthy lifestyle (TUK 4) 2. Discussing health facilities or health resources that the family can utilize (TUK 5)	The family was very enthusiastic and able to list the preventive measures they are taking as well as the health resources available to them

OUTCOME AND FOLLOW-UP

The family-centered nursing intervention was implemented based on the family's primary tasks (TUK) 1 through 5 and focused on achieving TUK 3—specifically, the family's ability to care for a family member with hypertension by performing brisk walking exercises as the primary intervention, repeated over 4 days. The family's self-reliance also improved during the implementation of the family-centered nursing intervention. During the visits, the family demonstrated positive progress, beginning with accepting the nurse's presence, then receiving care in accordance with the provided plan, accurately articulating their concerns, properly utilizing health facilities, performing brisk walking exercises according to the jointly established program, and taking active preventive measures for the patient by reducing foods high in salt and engaging in physical activity. The family has been taking hypertension medication regularly and will have the patient's blood pressure checked at the community health center. The client has also begun taking active preventive measures within the family, such as providing healthy meals and reducing food sources or processed foods containing excessive salt, such as salted fish, instant noodles, and unhealthy snacks.

DISCUSSION

The results of this case study show a change in blood pressure following the intervention, from an initial reading of 170/89 to 119/74 on the fourth day. Blood pressure measurements were taken before and after each exercise session to assess the changes that occurred. Based on Table 3 above, during the first session, the initial blood pressure of 170/89 mmHg decreased to 156/91 mmHg after a 30-minute exercise session, indicating a decrease of 14 mmHg in systolic pressure and 15 mmHg in

diastolic pressure. Overall, the changes in blood pressure from the first to the fourth day ranged from 7 to 14 mmHg for systolic pressure and from 3 to 6 mmHg for diastolic pressure.

Overall, during the 4-day exercise period, brisk walking had a positive effect on lowering both systolic and diastolic blood pressure. A decrease approaching normal blood pressure levels was already evident on the third day, with a post-exercise blood pressure reading of 125/78 mmHg, and on the fourth day, 119/74 mmHg. Overall, over the 4-day period, there was a 51-point decrease in systolic pressure and an 18-point decrease in diastolic pressure.

The results of this case study align with the research by Simanjuntak and Purba (2024) on two different families with members suffering from hypertension; after performing brisk walking exercises three times a week, their systolic blood pressure decreased by 10–20 points. Similarly, research by Effendi, Anggreini, and Ovari (2023) demonstrated changes in blood pressure following brisk walking exercises conducted over 3 sessions lasting 15–20 minutes each, resulting in a reduction of 30 points in systolic pressure and 20 points in diastolic pressure.

This reduction in blood pressure is attributed to the blood vessels becoming more relaxed following the release of nitric oxide, decreased sympathetic nervous system activity after physical activity, and the release of endorphins—which occurs alongside sweating during physical activity—all of which allow the heart to function more efficiently after brisk walking (Rachmatullah, 2022).

Family autonomy increased in tandem with home visits, with the autonomy level rising from 1 to 3. This aligns with Haris's (2022) study, which showed that the frequency of home visits alters families' perceptions of the nursing process and increases family involvement in home care, thereby enabling families to take to actively prevent hypertension, even to the point of actively engaging in health promotion efforts.

The implementation of brisk walking exercises as part of the family intervention involves not only the client as an individual but also the support of the family as a system in the care process for family members with hypertension. This is what distinguishes the intervention when brisk walking exercises are conducted in a group setting or within the community. The family plays a significant role in achieving the intervention's goal: family self-reliance in managing hypertension at home.

The implications of this case study are that community nurses working at community health centers (Puskesmas) can implement hypertension management using a family nursing care approach. Brisk walking exercises can serve as one alternative to help families increase their self-reliance in managing hypertension. Conducting home visits as a promotive and preventive measure against hypertension within families is a core responsibility of Puskesmas nurses.

DIAGNOSTIC CHALLENGE

Determining a family nursing diagnosis presents its own challenges; data is required that demonstrates conditions consistent with the major criteria standards in the SDKI/NANDA. Establishing this diagnosis requires more specific reasoning.

LIMITATIONS

In conducting this study, the researcher acknowledges several limitations that may affect both the process and the final results of the research. The case study approach used—particularly for patients with hypertension and the nursing diagnosis of Ineffective Health Management—has limitations regarding the generalizability of the findings. This case study is limited to a single subject and lacks a comparison group (control).

Because this study focused solely on an individual case, the results cannot be directly generalized as representative of a population of patients with hypertension. This case study also has limitations in that it focuses only on specific variables and is highly susceptible to confounding variables that may influence the results. Additionally, limitations arise from patient subjectivity, varying levels of family

involvement, and the possibility of uncontrollable external factors during the intervention process, such as environmental conditions and stress levels.

Hypertension management through routine medication is not fully effective unless supported by a healthy lifestyle on the part of the client and their family. Thus, a brisk walking exercise regimen is not the only intervention to lower blood pressure, but it serves as an alternative to support the patient's hypertension treatment so that blood pressure can be controlled more effectively.

LEARNING POINTS

Providing family nursing care requires extra effort. Implementation must be adapted to the family's schedule and circumstances. Systematic and continuous implementation demonstrates positive progress in family members' health. Brisk walking is a care strategy for family members with hypertension that families can perform while the patient is undergoing treatment. This brisk walking exercise is not intended to replace the medication taken by the client but serves as a complementary intervention to improve health, better control the client's blood pressure, enhance quality of life, and prevent more severe complications that may be experienced by individuals with hypertension.

CONCLUSION

Based on this case study, brisk walking for 4 days helped lower blood pressure from 170/89 mmHg to 119/76 mmHg, and family nursing care interventions helped increase the family's autonomy in managing a family member's hypertension, raising their self-management level from 1 to 3.

ETHICAL CLEARANCE

Ethical approval for this study was not sought, as the nursing care process coincided with students' field practice in family nursing; therefore, permission was obtained only from the Community Health Center (Puskesmas) to provide family nursing care within the center's service area.

PATIENT CONSENT

The client and family have given their consent for the case study, with the client's identity remaining confidential in the publication of this scientific article.

CONFLICT OF INTEREST

The author and the patient are not related, and there were no conflicts of interest during the conduct of the case study.

FUNDING SOURCE

All funding for this case study was provided independently by the two authors

AUTHORS' CONTRIBUTIONS

Authors 1 and 2 collaborated on the preparation of this case study and complemented each other's work. Author 1 focused on conceptual development and analysis, while Author 2 was responsible for data collection from the family and provided support to the family throughout the intervention process.

DATA AVAILABILITY

The data in this case study are based on the actual conditions of the client and family, and nearly all of the data have been reconfirmed with the client and family.

ACKNOWLEDGMENTS

We would like to thank the client and family for their permission and for taking the time to participate in this case study; the Community Health Center (Puskesmas) for granting permission and providing guidance in managing one of the families under its care; and the educational institution for granting permission to conduct this case study.

LIST OF ABBREVIATIONS

Askep: Nursing Care

SDKI : Indonesian Nursing

Diagnosis Standards SLKI : Indonesian Nursing Outcome Standards

FIGURE AND TABLE LEGENDS

Table 5 Changes in Blood Pressure and Family Independence

Variable	Result	Notes
Blood Pressure	From Grade 2 Hypertension to Normal Blood Pressure	Brisk walking should not replace medical treatment but should complement it
Family Independence	Family independence improved from Level 1 to Level 3	Home visits can improve family self-reliance

REFERENCES

- Agustina, H., Ginting, B., Khairunisa, S., Purba, B., Azura, R., Gurusinga, E., Syifa, F., Nasution, A., Anjani, W., Sembiring, B., & Shandy, B. (2024). Analysis of Factors Causing Hypertension at the Nila Merah Elderly Health Post in Belawan Bahari Village Neighborhood I.
- Ardi, A., Hidayat, R., & Nurman, M. (2023). WORKING AREA OF THE AIR TIRIS COMMUNITY HEALTH CENTER (UPT PUSKESMAS) IN 2023. 2, 166–171.
- Dewi, A. A. S. R. K., Rahayu, E. S., Rasdini, I. A., & Yasa, I. D. P. Gede P. (2023). The Effect of Brisk Walking Exercise on Blood Pressure in Older Adults with Hypertension. 2(1), 29–36. <https://doi.org/10.56922/mhc.v2i1.321>
- Friedman, M. M., Bowden, V. R., & Jones, E. G. (2014). Family Nursing Textbook: Research, Theory, and Practice (E. Tiar (ed.); 5th ed.). EGC.
- Haris, Herawati, L., Norhasanah, & Irmawati. (2020). The Effect of Home Visits on the Healthy Family Index (IKS) and Family Independence Levels. Media Karya Kesehatan, 3(2), 221–238. <https://www.researchgate.net/publication/345240167%0AHaris>:
- Johnson, H. M., Shimbo, D., Abdalla, M., Altieri, M. M., Bress, A. P., Carter, J., Commodore-Mensah, Y., Egan, B., Melnyk, B. M., Ogunniyi, M. O., Schott, S. L., Watson, K. E., & Williamson, J. D. (2025). Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults: A Report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines. In AHA/ACC/AANP/AAPA/ABC/ACCP/ACPM/AGS/AMA/ASPC/NMA/PCNA/SGI M (Vol. 152, Issue 11). <https://doi.org/10.1161/CIR.0000000000001356>
- Juniarti, N., Yamin, A., Lukman, M., Sari, S. P., Sari, C. W. M., Yani, D. I., & Haroen,

- H. (2018). *Nursing Center, Sentra Keperawatan: A Model for Community Nursing and Family Nursing Applications*. Unpad Press.
- Ministry of Health. (2024). *The Dangers of Hypertension, Efforts to Prevent and Control Hypertension*. <https://kemkes.go.id/id/bahaya-hipertensi-upaya-pencegahan-dan-pengendalian-hipertensi>
- Lestari, D. D., Handayani, T. S., & Rahmawati, D. T. (2022). Brisk Walking Exercise Technique. *Journal of Nursing and Public Health*, 10(2), 168–177.
- Liang, C., Song, Z., Yao, X. Z., Xiao, Q., Fu, H., & Tang, L. (2024). Exercise interventions for the effect of endothelial function in hypertensive patients: A systematic review and meta-analysis. *Journal of Clinical Hypertension*, 26(6), 599–614. <https://doi.org/10.1111/jch.14818>
- Masadah, M., Wiantari, D. A., & Sulaeman, R. (2021). The effect of brisk walking exercise on blood pressure changes in patients with hypertension.
- Ningrum, U. C., Hartutik, S., & Haryani, N. (2024). Application of Slow Deep Breathing Exercise on Blood Pressure in Hypertension Patients in Joyotakan Village. 7(7), 2717–2722. <https://doi.org/10.56338/jks.v7i7.5814>
- Paschalia, Y. P. M., & Juwana, E. (2024). ACUTE PAIN AT ENDE REGIONAL GENERAL HOSPITAL Faculty Member
- DIII Nursing Program, Ende, NTT, Indonesia Student, DIII Nursing Program, Ende, NTT, Indonesia
- Abstract INTRODUCTION Hypertension is a condition in which a person experiences elevated blood pressure. 3(2), 312–323.
- PPNI. (2017). *Indonesian Nursing Diagnosis Standards: Definitions and Diagnostic Indicators*. Central Executive Board of the Indonesian National Nurses Association. <http://inna-ppni.or.id>
- Samsuri, S., & Ns. Diana Dayaningsih. (2021). Application of Brisk Walking Exercise Therapy for Elderly Patients with Hypertension at the Ambarawa Community Health Center. *International Journal of Health Science*, 1(3), 37–48. <https://doi.org/10.55606/ijhs.v1i3.34>
- Sugiarto, H., & Waluyo, U. N. (2025). Education on foot reflexology as an effort to reduce signs and symptoms of hypertension in the Walitelon Utara Temanggung community. 8, 27–32.
- Utami, N. S. P., & Silvitasari, I. (2025). The Effect of a Brisk Walking Exercise Program on Blood Pressure Reduction in Patients with Hypertension. *Mandira Cendikia Journal of Health Sciences*, 4(7), 50–59. <https://doi.org/10.33024/hjk.v15i2.4697>
- Wahyuni, Majid, Y. A., & Pujiana, D. (2023). The Effect of Hypertension Exercise on Blood Pressure in Elderly Patients with Hypertension. *Jurnal Inspirasi Kesehatan*, 1(1), 65–71.
- Yingxiang, Y. U., Chang, C., Yifan, W. U., Guo, C., & Xie, L. (2021). Dose-effect relationship between brisk walking and blood pressure in a Chinese occupational population with sedentary lifestyles: Exercise and blood pressure. *Journal of Clinical Hypertension*, 23(9), 1734–1743. <https://doi.org/10.1111/jch.14340>