



## Section: Community Nursing

### The use of acupressure for managing hypertension in the elderly

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#### Abstract

Hypertension is defined as a systolic blood pressure above 140 mmHg and a diastolic blood pressure above 90 mmHg. If left uncontrolled, hypertension can lead to serious complications such as heart failure, heart attack, stroke, and eye damage. These complications can be prevented through two main approaches: pharmacological and non-pharmacological therapy. Pharmacological therapy involves the use of medications or medical treatments, while non-pharmacological therapy focuses on lowering blood pressure without reliance on drugs or associated side effects. One such non-pharmacological method is acupressure therapy, a form of physiotherapy that involves massaging and stimulating specific points on the body. In this case, acupressure therapy was applied over three visits. The patient cooperated well during the therapy sessions, and a significant reduction in blood pressure was observed after the intervention. Before the first session of acupressure therapy, the patient's blood pressure was recorded at 178/90 mmHg. After three days of therapy, the blood pressure had decreased to 130/83 mmHg, representing a reduction of 48 mmHg. This suggests that acupressure therapy, when applied to the Hegu, Zusanli, and Taichong points, is effective in lowering blood pressure in patients with hypertension.

**Keywords:** Acupressure; hypertension; nursing care; complementary therapy; elderly care

#### Introduction

Hypertension is defined as a systolic blood pressure above 140 mmHg and a diastolic blood pressure above 90 mmHg (Soleimani, Barone, Luo, & Zahedi, 2023). The incidence of hypertension increases with age due to a loss of arterial elasticity, which reduces the responsiveness of blood vessels (Mills, Stefanescu, & He, 2020). Hypertension affects approximately 970 million people worldwide. In the United States alone, there are 77.9 million individuals with hypertension, with a ratio of one in three people affected (Chobuo et al., 2020). In Southeast Asia, including Indonesia, around 35% of adults suffer from hypertension, resulting in approximately 1.5 million deaths annually. Hypertension is particularly prevalent in the elderly, with rates of 45.9% among those aged 55-64 years, 57.6% for those aged 65 years, and 63.8% for those aged 75 years and older (Alfaqeeh, Alfian, & Abdulah, 2023). Uncontrolled hypertension can lead to severe complications such as heart failure, heart attacks, strokes, and eye damage (Masenga & Kirabo, 2023). These complications can be managed through two main approaches: pharmacological and non-pharmacological therapies. Pharmacological therapy, which involves the use of drugs, can cause side effects such as frequent urination, edema, and hyperuricemia (Heidari, Avenatti, & Nasir, 2022). Non-pharmacological therapy, on the other hand, is aimed at lowering blood pressure without relying on medications or causing side effects. One such non-pharmacological method is acupressure therapy, which involves stimulating specific points on the body to reduce blood pressure (Zhao et al., 2020).

Acupressure is a form of physiotherapy that targets specific pressure points associated with hypertension. Some key acupressure points used for lowering blood pressure include the Hegu point (LI 4), located between the thumb and index finger in the muscle area; the Zusanli point (ST-36), located four fingers below the patella and two fingers outward; and the Taichong point (LV-3), found on the distal curve of the surface between the bases of the first and second metatarsal bones (Ni'am, Khoiriyah, & Samiasih, 2022). Pressure is applied to these points using the thumb or forefinger with a clockwise circular motion, 30 times at each point (Kamelia, Anita, & Rudiyanto, 2021). A study indicates that acupressure therapy helps reduce stress, improve blood circulation, and induce relaxation, which gradually lowers blood pressure (Aminuddin, Sudarman, & Syakib, 2020). Acupressure stimulates superficial skin nerves, which send signals to the hypothalamus in the brain. This activates the descending nervous system, releasing endogenous opiates such as endorphins. Increased endorphin levels boost the production of dopamine, which in turn activates the parasympathetic nervous system. The parasympathetic nervous system, responsible for managing the body's relaxation response, helps lower blood pressure as hypertensive patients experience touch as a calming stimulus. A study supported that acupressure is effective in reducing blood pressure (Rahayu, Sucipto, & Syahleman,

2023). That study showed a significant decrease in mean arterial pressure, with systolic blood pressure dropping by 13.98 mmHg and diastolic blood pressure by 4.78 mmHg, with a p-value of 0.000, indicating strong evidence of the therapy's efficacy. Acupressure therapy presents a viable non-pharmacological option for managing hypertension, particularly in elderly patients, by promoting relaxation and reducing blood pressure without the side effects associated with conventional medications. Therefore, the study was aimed to investigate the role of acupressure in managing hypertension in elderly.

## Case Description

The assessment was conducted on May 19, 2024, at 09:00 WIB on Mrs. M, a 66-year-old female laborer from Paremono Village, who has been suffering from hypertension for 5 years. She frequently complained of aches and occasional pain in both shoulders, along with a heavy and stiff sensation in the back of her neck. During the assessment, her vital signs were recorded as follows: blood pressure of 178/90 mmHg, pulse rate of 89 beats per minute, temperature of 36.7°C, and respiratory rate of 20 breaths per minute. Based on this data, the nursing diagnosis formulated is "risk for ineffective peripheral perfusion" as evidenced by hypertension. After implementing nursing interventions over three visits, the goal is to improve peripheral perfusion, with the criteria being a systolic blood pressure between 120-140 mmHg, diastolic blood pressure between 80-100 mmHg, and a reduction in pain sensation. The nursing diagnosis for this patient is "risk for ineffective peripheral perfusion" (L.02011), and the corresponding intervention is circulation care (I.02079). The intervention includes monitoring blood pressure, assessing peripheral pulses, avoiding blood pressure measurements in extremities with limited perfusion, and teaching non-pharmacological techniques, such as acupressure, to lower blood pressure. The implementation was carried out over three visits, from May 19, 2024, to May 21, 2024. During each visit, the author administered acupressure therapy and evaluated blood pressure daily. The initial blood pressure measurement before the first acupressure session was 178/90 mmHg. After three days of therapy, the blood pressure had decreased to 130/83 mmHg.

## Discussion

On May 19, 2024, at 09:00 WIB, an assessment was conducted on Mrs. M, a 66-year-old female laborer from Paremono Village, who had been suffering from hypertension for 5 years. Mrs. M frequently complained of aches and occasional pain in her shoulders, neck, and legs. These complaints align with a study that states that hypertensive patients often experience symptoms such as headaches, anxiety, neck stiffness, dizziness, blurred vision, chest pain, and fatigue (Adrian & Tommy, 2019). During the assessment, her vital signs were as follows: blood pressure at 178/90 mmHg, pulse rate at 89 beats per minute, temperature at 36.7°C, and respiratory rate at 20 breaths per minute. This study documented that Mrs. M falls into the category of grade 2 hypertension. This is consistent with a study described that that hypertension symptoms often include headaches, a heavy sensation in the nape of the neck, shoulder pain, fatigue, palpitations, tinnitus, and even nosebleeds (Mills, Stefanescu, & He, 2020). Based on the patient's assessment, the primary complaints were shoulder aches, a heavy sensation in the neck, and high blood pressure (178/90 mmHg). These findings formed the basis for diagnosing the risk of ineffective peripheral perfusion due to hypertension. In this case, there is consistency between theory and practice, with no gaps identified. The nursing diagnosis was established based on Maslow's hierarchy of needs, with the risk of ineffective peripheral perfusion prioritized under physiological needs. These needs involve issues like respiration, circulation, pain, fluids, and mobility.

The nursing interventions aimed to reduce blood pressure and improve peripheral perfusion. The nursing care plan was developed according to the Indonesian Nursing Outcome Standards (SLKI), focusing on reducing blood pressure and enhancing circulation. The intervention involved a combination of observation, therapeutic actions, patient education, and collaboration, as outlined in the Indonesian Nursing Intervention Standards (SIKI). The intervention target was set for three visits to achieve the outcome criteria for addressing the risk of ineffective peripheral perfusion. In this case, complementary therapy in the form of acupressure was used to lower blood pressure. Acupressure is a type of physiotherapy that involves massaging and stimulating specific points on the body (Saputra, Budhi, & Mahathir, 2020). Acupressure points for reducing hypertension include the Hegu (LI-4), Zusanli (ST-36), and Taichong (LR-3) points. The Hegu point, located between the thumb and index finger, helps to relieve headaches and induce relaxation. The Zusanli point, located below the knee, is connected to the stomach meridian and helps relieve fatigue, improve digestion, and reduce joint pain. The Taichong point, located between the metatarsal bones, is related to the liver meridian and aids in relieving stress and anxiety, improving sleep, and easing headaches. Pressure is applied to these points with the thumb or index finger, making 30 circular motions at each point (Jatnika, Budiana, & Yuswandi, 2023). Before starting acupressure therapy, Mrs. M's blood pressure was measured, and she then received acupressure at the Hegu, Zusanli, and Taichong points. Pressure was applied in a clockwise circular motion 30 times per point. Post-therapy, her blood pressure was measured again. The acupressure stimulates sensory nerves at these points, which send signals to the hypothalamus, activating the pituitary gland to release endorphins that produce relaxation and comfort. This relaxation effect can help lower blood pressure. Acupressure also triggers

the release of serotonin, a neurotransmitter that signals the brain stem to activate the pineal gland, which produces melatonin, another hormone that helps reduce blood pressure (Kamelia, Anita, & Rudiyanto, 2021).

The results of the therapy indicated that Mrs. M was cooperative throughout the sessions, and her blood pressure showed significant improvement. After three sessions of acupressure therapy, her blood pressure decreased from 178/90 mmHg to 130/83 mmHg, a total drop of 48 mmHg. This outcome suggests that acupressure therapy at the Hegu, Zusanli, and Taichong points is effective for managing hypertension. This finding is consistent with a study reported that acupressure therapy significantly reduces blood pressure in hypertensive patients (Aminuddin, Sudarman, & Syakib, 2020). Their study showed a statistically significant difference in both systolic and diastolic blood pressure after therapy, with a p-value of 0.000 for systolic and 0.015 for diastolic pressure. This supports the conclusion that acupressure therapy has a positive impact on lowering blood pressure in hypertensive patients.

In the context of managing hypertension through complementary therapies such as acupressure, nurses play a crucial role in both the assessment and implementation phases of patient care. Initially, nurses are responsible for conducting thorough assessments to identify symptoms and monitor vital signs, such as blood pressure, pulse, and respiratory rates. By identifying hypertensive symptoms like headaches, shoulder pain, and a heavy sensation in the neck, nurses are able to formulate appropriate nursing diagnoses. This involves prioritizing care based on patient needs, with a focus on physiological functions such as circulation and perfusion. Nurses also serve as educators, informing patients about the benefits of non-pharmacological interventions like acupressure and teaching them how these therapies can complement traditional medical treatments to improve outcomes. In addition to assessment and education, nurses are directly involved in administering acupressure therapy as part of the intervention to manage hypertension. They perform therapeutic techniques by applying pressure to specific acupressure points, such as Hegu, Zusanli, and Taichong, to help reduce stress, improve blood circulation, and lower blood pressure. During the intervention, nurses continuously evaluate the patient's response to the therapy by measuring blood pressure before and after each session. They also monitor the patient's overall physical condition and adjust the care plan as needed to ensure the best possible outcomes. By integrating complementary therapies into patient care, nurses play an essential role in promoting holistic care and improving the quality of life for hypertensive patients.

## Conclusion

The study demonstrated that this approach can effectively reduce anxiety in patients, leading to lower blood sugar levels. This therapy can be particularly beneficial for patients experiencing anxiety, helping them feel more relaxed and better able to accept their chronic condition, such as diabetes mellitus. Additionally, hypnotherapy serves as a valuable non-pharmacological treatment option for individuals with diabetes. Patients are encouraged to utilize hypnotherapy as a therapeutic method to manage anxiety, enabling them to live more peacefully without being overwhelmed by fear or stress. For nurses, it is essential to conduct thorough assessments, accurately determine diagnoses, and incorporate hypnotherapy techniques as part of nursing interventions. Ensuring the effectiveness of these techniques can significantly help in managing patient anxiety. Hospitals are encouraged to consider hypnotherapy as a reference for health workers, enabling them to implement this therapy and enhance the overall health outcomes for their patients.

## References

- Adrian, S. J., & Tommy. (2019). Hipertensi Esensial: Diagnosis dan Tatalaksana Terbaru pada Dewasa. *Cermin Dunia Kedokteran*, 46(3), 172–178. <https://doi.org/10.55175/cdk.v46i3.491>
- Alfaqeeh, M., Alfian, S. D., & Abdulah, R. (2023). Factors Associated with Hypertension Among Adults: A Cross-Sectional Analysis of the Indonesian Family Life Survey. *Vascular health and risk management*, 19, 827–836. <https://doi.org/10.2147/VHRM.S438180>
- Aminuddin, A., Sudarman, Y., & Syakib, M. (2020). Decreased Blood Pressure in Hypertension Sufferers After Being Given Acupressure Therapy. *Manarang Health Journal*, 6(1), 57-61.
- Chobufo, M. D., Gayam, V., Soluny, J., Rahman, E. U., Enoru, S., Foryoung, J. B., Agbor, V. N., Dufresne, A., & Nfor, T. (2020). Prevalence and control rates of hypertension in the USA: 2017-2018. *International Journal of Cardiology. Hypertension*, 6, 100044. <https://doi.org/10.1016/j.ijchy.2020.100044>
- Heidari, B., Avenatti, E., & Nasir, K. (2022). Pharmacotherapy for Essential Hypertension: A Brief Review. *Methodist DeBakey cardiovascular journal*, 18(5), 5–16. <https://doi.org/10.14797/mdcvj.1175>
- Jatnika, N. G., Budiana, T. A., & Yuswandi, Y. (2023). The Effect of Acupressure Therapy on Blood Pressure At Hypertension Patient. *Media Ilmu Kesehatan*, 11(1), 29–35. <https://doi.org/10.30989/mik.v11i1.679>
- Kamelia, N. D., Anita, D. A., & Rudiyanto (2021). Acupressure Therapy for Blood Pressure in Hypertension Sufferers. *Nursing Information Journal*, 1 (1), 18-24.
- Masenga, S. K., & Kirabo, A. (2023). Hypertensive heart disease: risk factors, complications and mechanisms. *Frontiers in cardiovascular medicine*, 10, 1205475. <https://doi.org/10.3389/fcvm.2023.1205475>
- Mills, K. T., Stefanescu, A., & He, J. (2020). The global epidemiology of hypertension. *Nature reviews. Nephrology*, 16(4), 223–237. <https://doi.org/10.1038/s41581-019-0244-2>

- Ni'am, M. A., Khoiriyah, K., & Samiasih, A. (2022). Penerapan Akupresur terhadap Penurunan Tekanan Darah pada Pasien Penderita Hipertensi Di Desa Bermi Kabupaten Demak. *Holistic Nursing Care Approach*, 2(2), 65–65. <https://doi.org/10.26714/hnca.v2i2.10287>
- Rahayu, S., Sucipto, A., & Syahleman, R. (2023). Penerapan terapi akupresur mandiri sebagai upaya penurunan tekanan darah pada penderita hipertensi. *Community Development Journal : Jurnal Pengabdian Masyarakat*, 4(4), 9025–9030. Retrieved from <https://journal.universitaspahlawan.ac.id/index.php/cdj/article/view/20231>
- Saputra, R., Budhi, M., & Mahathir. (2020). Reducing Blood Pressure in Elderly People with Hypertension Through Spiritual Emotional Freedom Technique (SEFT) Therapy and Taichong Point Acupressure. *Batanghari University Jambi Scientific Journal*, 20(3) 942-945.
- Soleimani, M., Barone, S., Luo, H., & Zahedi, K. (2023). Pathogenesis of Hypertension in Metabolic Syndrome: The Role of Fructose and Salt. *International journal of molecular sciences*, 24(5), 4294. <https://doi.org/10.3390/ijms24054294>
- Zhao, Z. H., Zhou, Y., Li, W. H., Tang, Z. H., Xia, T. W., & Han-Li (2020). Auricular Acupressure in Patients with Hypertension and Insomnia: A Systematic Review and Meta-Analysis. *Evidence-based complementary and alternative medicine: eCAM*, 2020, 7279486. <https://doi.org/10.1155/2020/7279486>