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The Effect of Warm Water Foot Soak Therapy on Blood Pressure in Patients with Hypertension

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ABSTRACT

Hypertension is a major global health problem and increases the risk of cardiovascular, renal, and cerebrovascular diseases if not properly managed. This study aimed to determine the effect of warm water foot soak therapy on blood pressure in patients with hypertension. This study used a pre-experimental one-group pre-test and post-test design. A total of 30 respondents were selected using purposive sampling. The intervention was administered for 15 minutes for five consecutive days using water at a temperature of 39–42°C. Blood pressure was measured before and after the intervention. Data were analyzed using the Wilcoxon signed-rank test. The results showed a significant decrease in systolic and diastolic blood pressure after the intervention (p = 0.000). Warm water foot soak therapy is effective as a complementary non-pharmacological intervention for controlling blood pressure in patients with hypertension.

Keywords: Blood Pressure; Hypertension; Warm Foot Soak

INTRODUCTION

Cardiovascular diseases remain a major public health problem in many countries and contribute significantly to global morbidity and mortality (1). Among these conditions, hypertension is recognized as one of the leading causes of death worldwide due to its widespread prevalence and long-term impact on health outcomes (2). Hypertension is often referred to as a "silent killer" because it typically develops without noticeable symptoms, allowing the condition to progress unnoticed while causing subclinical organ damage (3). This asymptomatic nature complicates early detection and delays appropriate management, ultimately increasing the overall burden of disease.

According to the 2023 Global Report on Hypertension by the World Health Organization, the global prevalence of hypertension reaches approximately 33% among adults aged 30–79 years (4). In Indonesia, national data indicate that 30.8% of adults aged ≥18 years are affected by hypertension based on blood pressure measurements, while 8.6% are diagnosed through clinical evaluation (5). Despite ongoing efforts to improve awareness and treatment, a substantial proportion of patients still demonstrate poor adherence to antihypertensive therapy, with many individual taking medications irregularly or not adhering to treatment recommendations at all. This gap between diagnosis, education, and effective management highlights a persistent challenge in controlling hypertension at the population level.

The high prevalence of hypertension indicates that it remains a serious health problem requiring immediate attention (6). In many cases, the condition is only identified after symptoms or complications appear, further emphasizing the need for early and continuous management (7). If not properly controlled, hypertension can lead to various complications involving vital organs such as the heart, brain, kidneys, and other systems (8). Therefore, appropriate treatment is essential to control blood pressure and maintain it within normal limits (9). Uncontrolled hypertension may result in severe outcomes, including heart failure, stroke, aneurysm, visual impairment, kidney disorders, metabolic syndrome, and even death (10).

Hypertension can be controlled through pharmacological and non-pharmacological therapies (11). Pharmacological therapy is therapy carried out with the assistance of drugs and medical management. Commonly used drugs include diuretics, adrenergic blockers, ACE inhibitors, angiotensin II-blockers, angiotensin-converting enzyme (ACE) inhibitors, and vasodilators. Meanwhile, non-pharmacological therapy is a non-medical approach that includes physical exercise, lifestyle changes, and warm-water therapy, commonly known as hydropathy (8). Soaking feet in warm water is one complementary non-pharmacological therapy that can be performed independently within the nursing context (12-13). Soaking feet in warm water is a simple therapy that relies on the body's natural response to water temperature, known as a "low-tech" method. In this therapy, water is the primary medium for relieving physical discomfort. Using warm water can improve blood flow, reduce swelling, relax muscles, calm the nervous system, and provide a relaxing effect. Furthermore, this therapy can also improve heart health, relieve muscle pain and tension, increase capillary permeability, and provide a soothing, warm sensation. Therefore, this therapy is very effective in helping lower blood pressure in people with hypertension (14).

Soaking feet in warm water is a non-pharmacological therapy in the form of complementary hypertension therapy performed to help people with hypertension control their blood pressure. This complementary therapy aims to complement or support the effectiveness of primary treatment (15). The study by Nazaruddin et al. showed that warm foot soaks reduced blood pressure in patients with a hypertension (p-value = 0.0000). This study also found differences in average systolic blood pressure (SBP) and diastolic blood pressure (DBP) before and after the intervention. Before the intervention, the average SBP was 165.81 mmHg, after the intervention, it was 149.35 mmHg. The average DBP before the intervention was 100.97 mmHg, and after the intervention, it was 91.94 mmHg.

Data from the Surakarta City Health Office for January to March 2025 showed that Ngoresan Community Health Center ranked third in hypertension prevalence, with 29.90% (1,170 patients). This data indicates that the burden of hypertension in Ngoresan Village remains quite high and requires serious attention from various parties, especially in promotive and preventive efforts. Based on a preliminary study conducted at the Ngoresan Community Health Center on hypertension management, the community health center only implemented promotive and preventive measures through education. Researchers also conducted interviews with 10 hypertension sufferers in Ngoresan Village, of the 10 hypertension sufferers, 7 of whom took morning walks to control their blood pressure, 10 respondents also revealed that when their blood pressure was hight they usually drank herbal concoctions such as boiled bay leaves. All respondents revealed that the most frequent effort to control their blood pressure was only by taking hypertension medication. Nine out of 10 respondents in this study said they did not know that warm foot soak therapy could reduce blood pressure. All respondents

in this preliminary study said they still often experience several disturbing symptoms such as back pain, nausea, and vomiting, although infrequently.

The high prevalence of hypertension, low adherence to pharmacological therapy, and limited use of non-pharmacological therapies such as hydrotherapy, along with the limited number of community-based studies in local areas like Ngoresan Village, underscore the importance of investigating the "effect of warm water foot soaks on blood pressure in hypertension patients in Ngoresan Village". Therefore, this study aims to determine the effect of warm water foot soak therapy on blood pressure in patients with hypertension in Ngoresan Village. This study contributes local evidence from Central Java using a structured five-day intervention protocol, addressing the gap in previous studies that predominantly relied on single-session applications.

METHODS

This study employed a quantitative strategy with a pre-experimental approach and a one-group pre-test post-test design. The study was conducted in Ngoresan Village, where 1170 hypertensive patients were enrolled at the Ngoresan Community Health Center. The sample size was based on the minimum sample size for experimental research; 33 respondents, with 3 as reserves. The sample was drawn using a purposive sampling technique, with inclusion and exclusion criteria in mind. The inclusion criteria were hypertensive patients with blood pressure ≥140/90 mmHg, not regularly taking antihypertensive medication, able to follow the five-day intervention protocol, and able to communicate effectively. The exclusion criteria included patients with abnormalities or injuries in the lower extremities (intervention area) and those who refused to participate or did not provide informed consent.

This study used primary data, or data collected directly by the researcher. Data were collected using a daily observation sheet to ensure the intervention was implemented consistently. Measurements were taken twice daily, in the morning before therapy (pre-test) and after therapy (post-test), for 5 consecutive days. The tools used are a basin filled with warm water, a towel, a sphygmomanometer, a stethoscope, a thermometer, and a timer. The procedure for soaking feet in warm water includes: 1) Prepare a basin. Hypertension sufferers sit on a chair, 2) The basin is filled with warm water approximately ankle-high. 3) The respondent's feet are placed in a basin filled with warm water that has been measured with a thermometer at a temperature of 39°C-42°C for 15 minutes. 4) During therapy, the basin is covered with a towel to maintain the temperature of the warm water. 5) While the feet are soaked in warm water, the toes are moved slowly. 6) The warm water foot soak therapy is carried out 5 times or for 5 days, each session is 15 minutes. Blood pressure is measured using a sphygmomanometer and a stethoscope.

Blood pressure measurements were obtained using a sphygmomanometer and a stethoscope. The normality of the data distribution was assessed using the Shapiro–Wilk test. The results indicated that the data were not normally distributed ($p < 0.05$). Therefore, a non-parametric statistical test, namely the Wilcoxon signed-rank test, was used to analyze the differences in blood pressure before and after the intervention.

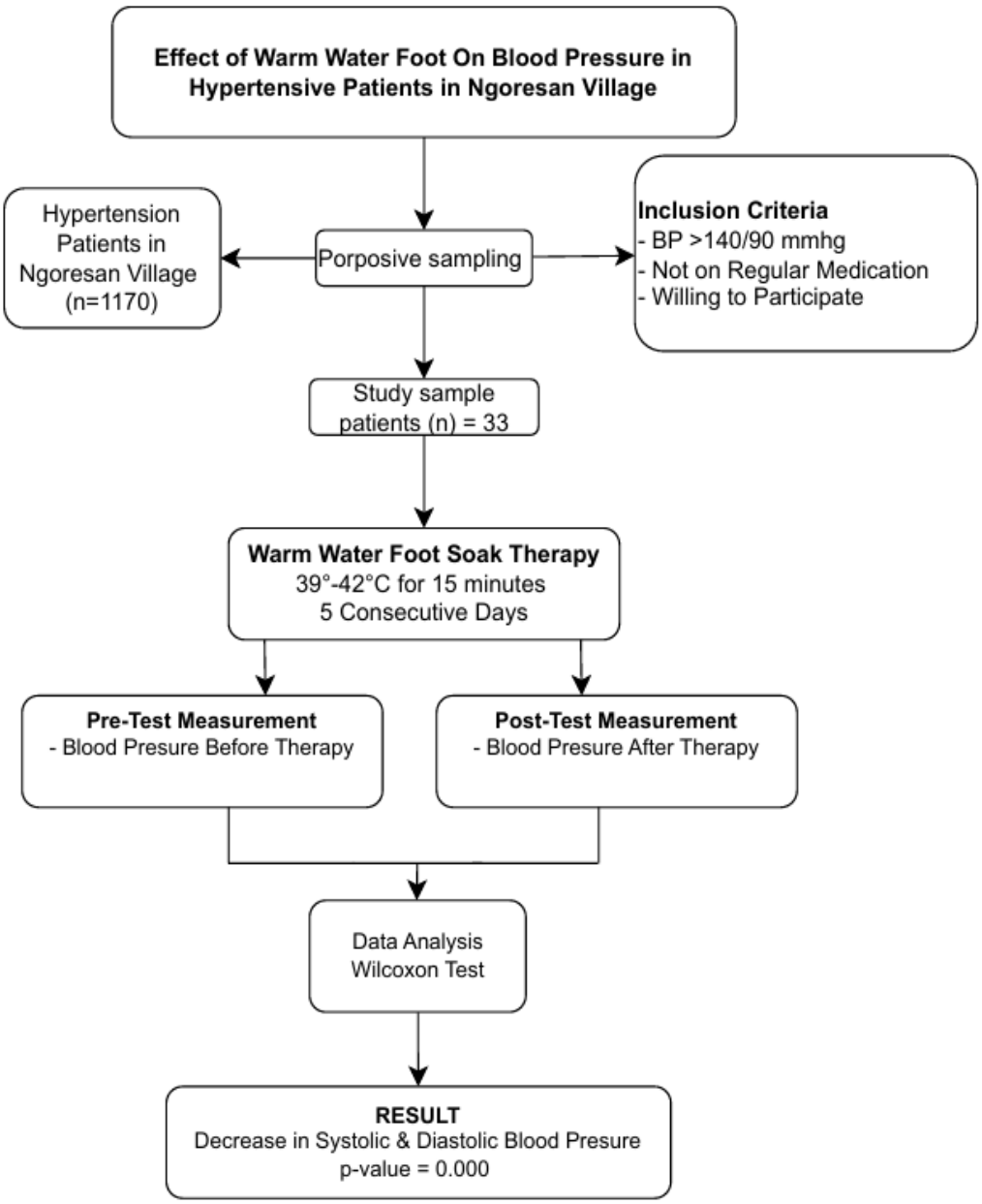

Figure 1. Research Stages Flowchart

RESULTS

Attached below are the results of blood pressure measurements for respondents before receiving warm water foot soak therapy. This data aims to determine the baseline blood pressure of hypertension patients in Ngoresan Village before the intervention. The blood pressure measurement data before therapy will be presented in the following table to illustrate the respondents' blood pressure before treatment:

Table 1. Blood pressure values before intervention

	n	Median	Minimum	Maximum
Systole	30	170	140	190
Diastole	30	100	90	110

Based on Table 1, the median systolic blood pressure before therapy was 170 mmHg, with the highest at 190 mmHg and the lowest at 140 mmHg. Meanwhile, the median diastolic blood pressure was 100 mmHg. The highest diastolic BP at pretest was 110 mmHg and, the lowest was 90 mmHg. In this study, the average age of respondents was 55.57 years.

Tabel 2. Blood pressure values after intervention

	n	Median	Minimum	Maximum
Systole	30	140	130	178
Diastole	30	80	80	94

Based on Table 2, the respondents' systolic blood pressure decreased after receiving warm water foot soak therapy compared to before therapy, with a median value of 140 mmHg, the highest at 178 mmHg, and the lowest at 130 mmHg. These results indicate a decrease in systolic blood pressure of 0.25 and a decrease in diastolic blood pressure compared to before therapy. Overall, this illustrates that warm water foot soak therapy provides a relaxing effect that can lower blood pressure in hypertensive patients in Ngoresan Village.

Table 3. Results of the analysis of the effect of warm water foot soak therapy on blood pressure in hypertension sufferers in Ngoresan Village

	N	Median (Minimum-maximum)	p-value
Pre systole - post systole	30	170-140 (140-178)	0.000
Pre diastole – post diastole		100-80 (90-94)	0.000

Source: SPSS (2025)

The results of the Wilcoxon signed-rank test showed a p-value of 0.000 ($p < 0.05$), indicating a significant difference in systolic blood pressure before and after the intervention. The median systolic blood pressure decreased from 170 mmHg before the intervention to 140 mmHg after the intervention. Consistent with this finding, the results of the Wilcoxon signed-rank test for diastolic blood pressure also showed a p-value of 0.000 ($p < 0.05$), indicating a significant difference before and after the intervention. The median diastolic blood pressure decreased from 100 mmHg before the intervention to 80 mmHg after the intervention.

DISCUSSION

Age is a well-established risk factor for hypertension, as physiological changes associated with aging can significantly affect cardiovascular function. Structural and functional alterations in the vascular system, such as decreased arterial elasticity, atherosclerosis, and reduced responsiveness of vascular smooth muscle, contribute to increased peripheral resistance and elevated blood pressure (17). In addition, age-related decline in cardiac function may impair the heart’s ability to regulate blood pressure

effectively, thereby increasing the risk of hypertension and its associated complications, including cardiovascular and cerebrovascular diseases (20).

In relation to the findings of this study, the relatively high baseline blood pressure observed among respondents may be associated with these physiological characteristics. Increased peripheral vascular resistance and heightened sympathetic nervous system activity are common in hypertensive individuals and may explain why blood pressure remained elevated prior to the intervention. Following the implementation of warm water foot soak therapy, a significant reduction in both systolic and diastolic blood pressure was observed, indicating that this intervention may help counteract these physiological conditions by promoting vascular relaxation and improving blood circulation.

These findings are consistent with previous studies that have reported the effectiveness of non-pharmacological interventions, including hydrotherapy, in reducing blood pressure. However, unlike many prior studies that primarily utilized single-session interventions, this study applied a structured five-day protocol in a community-based setting, thereby providing additional evidence regarding the effectiveness of repeated interventions in real-world conditions.

Despite these findings, this study has several limitations. The use of a pre-experimental one-group design without a control group limits the ability to establish causal relationships. In addition, the relatively small sample size and the use of purposive sampling may affect the generalizability of the results. The short duration of the intervention, which was limited to five consecutive days, also restricts the ability to assess long-term effects.

Nevertheless, the results of this study have important implications for both practice and future research. Warm water foot soak therapy can be considered a simple, low-cost, and accessible complementary intervention for blood pressure management, particularly in community-based settings. Future studies are recommended to employ randomized controlled designs, larger sample sizes, and longer intervention periods to further validate these findings and strengthen the evidence base.

A foot soak is a therapy involving soaking the feet 10-15 cm above the ankles in warm water for 30 minutes. This therapy improves blood flow in the respondents' feet. Soaking the feet in warm water improves blood circulation, especially in the extremities. Respondents performed this procedure according to the standards described (16). During the study, researchers used warm water to soak the respondents' feet for 30 minutes, and the intervention was administered for five consecutive days. Warm water is a therapeutic medium that can help prevent and recover from hypertension. This is due to its hydrostatic, hydrodynamic, and warm temperature effects, which improve blood circulation. In addition to improving blood circulation, warm water also has a calming effect on the body, helping maintain balance and homeostasis (12).

When the feet are soaked, the warm water stimulates heat receptors (thermoreceptors) in the skin, which then send signals to the hypothalamus, the body's temperature-regulating center (24). In response to increased local temperature, peripheral blood vessels in the lower extremities dilate (vasodilation) (25). This vasodilation increases blood flow to the skin and peripheral tissues, thereby decreasing systemic vascular resistance. This reduction in resistance directly contributes to lower arterial blood pressure, particularly systolic blood pressure (26).

In addition to its physiological effects on blood vessels, warm foot soak therapy also produces a relaxing effect, both physically and psychologically. Warm temperatures activate

the parasympathetic nervous system and decrease sympathetic nervous system activity, which can increase blood pressure (27). With reduced sympathetic activity, the heart rate slows and blood pressure naturally decreases. This relaxing effect is further enhanced by the calm, comfortable therapy environment, which tends to make respondents feel more relaxed during treatment (28).

The theoretical working principle of warm water foot soak therapy is based on conduction and convection, which cause heat to transfer from the warm water into the body, thereby dilating blood vessels and improving blood circulation (29). Warm water foot soak therapy stimulates baroreceptors, sending impulses to the heart and activates the parasympathetic nervous system, reducing cardiac contractility, and lowering blood pressure (30). Warm water therapy can provide a therapeutic physiological response by removing excess heat and lowering blood pressure. It can also relax connective muscle tissue, relax muscle structures, relieve pain, and dilate blood vessels, which affect heart and lung function (31). Soaking feet in warm water for 10-30 minutes dilates arterioles and precapillary sphincters, resulting in a 10-100-fold increase in capillary opening (14).

Their research stated that soaking feet in warm water produces heat energy that has a dilating effect and improves blood circulation. It also stimulates the nerves in the feet, activating the parasympathetic nerves, and causing changes in blood pressure. Stated that the physiological mechanisms involved are very complex; several systems are related to the relaxation condition, namely muscle tissue, the endocrine system, and the nervous system. Using warm water creates a sense of comfort in the muscles by reducing muscle tension. This is due to the dilation of blood vessels and the stretching of muscle cells, which can induce a feeling of relaxation in the body (32).

Blood vessel dilation affects arterial pressure (baroreceptors) in the cortical sinus and aortic arch. Nerve fibers carry information from throughout the body to the brain about blood volume, blood pressure, and organ needs, sending impulses to the sympathetic nervous system in the medulla. This increases systolic pressure, and ventricular muscle tension, thereby increasing ventricular contraction. At the beginning of contraction, the semilunar and aortic valves are not yet open. To open these valves, ventricular pressure must exceed the aortic valve pressure. Vascular dilation facilitates smoother blood flow to the heart, allowing blood to enter the heart more easily and lowering systolic pressure. During diastolic pressure, isovolemic ventricular relaxation causes a dramatic drop inventricular pressure thereby decreasing diastolic pressure (14).

This study aligns with research by (16) that found warm water foot soaks lowered blood pressure in hypertensive patients at the Poasia Community Health Center (Puskesmas) in Kendari City, with a p-value of 0.000. (12) also found similar results, indicating that hydrotherapy (warm water foot soaks) affected lowering blood pressure in hypertensive patients in the Sikumana Community Health Center (Puskesmas) area in Kupang City, with a p-value of 0.000.

Based on the results and discussion outlined above, warm water foot soak therapy was found to reduce blood pressure in hypertensive patients, with median systolic blood pressure decreasing from 170 mmHg to 140 mmHg and diastolic blood pressure from 100 mmHg to 80 mmHg following the five-day intervention. This magnitude of reduction is not only statistically significant but also clinically meaningful, as decreases of this scale are associated with a reduced risk of cardiovascular complications. These findings are in line with previous studies that have reported the effectiveness of warm water foot soak therapy in lowering

blood pressure, although many of those studies were limited to single-session interventions. In contrast, the repeated five-day protocol applied in this study may have contributed to the greater reduction observed, suggesting the added benefit of sustained and consistent application.

The observed reduction in blood pressure may be explained by physiological mechanisms related to peripheral vasodilation. Exposure of the feet to warm water stimulates thermoreceptors in the skin, which promotes dilation of peripheral blood vessels and increases blood flow to the lower extremities. This process leads to a decrease in systemic vascular resistance, thereby contributing to a reduction in arterial blood pressure. In addition, the thermal effect of warm water may enhance relaxation by activating the parasympathetic nervous system and reducing sympathetic activity, further supporting blood pressure regulation. Therefore, changes in blood pressure following warm water foot soak therapy can be interpreted as a physiological response to thermal stimulation that supports cardiovascular stability.

CONCLUSION

This study aimed to determine the effect of warm water foot soak therapy on blood pressure in patients with hypertension, and the findings indicate that the intervention effectively reduced both systolic and diastolic blood pressure following a five-day application. These results suggest that warm water foot soak therapy can serve as a simple, low-cost, and accessible complementary intervention for blood pressure control, particularly in community-based settings. However, this study has several limitations, including the use of a pre-experimental one-group design without a control group, a relatively small sample size, and a short intervention duration, which may limit the generalizability of the findings. Therefore, future research is recommended to employ more rigorous study designs, larger samples, and longer intervention periods to further validate these results. Overall, warm water foot soak therapy has the potential to be integrated with healthy lifestyle practices as part of a comprehensive approach to hypertension management.

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REFERENCES

1. Yulianto, Indrawati, Cahyono EA. Peningkatan Pengetahuan Pasien Hipertensi dalam Melakukan Manajemen Hipertensi Secara Mandiri. J Bhakti Civ Akad. 2024;15(1):37–48.
2. Mutmainnah B, Djalal D, Suyuti A. Edukasi Bahaya Hipertensi, “The Silent Killer” dan Cara Pemeriksaan Tekanan Darah pada Mahasiswa FIK UNM. Semin Nas Pengabdi Kpd Masy 2021. 2021;284–6.

3. Fatima S, Mahmood S. Combatting a silent killer - the importance of self-screening of blood pressure from an early age. EXCLI J. 2021; 20:1326–7.
4. WHO. Global report on hypertension. Vol. 01, World Health Organitation. 2023. 1–7 p.
5. BPS. Survei Kesehatan Indonesia (SKI). Kementrian Kesehatan. 2023.
6. Octavianie G, Pakpahan J, Maspupah T, Debora T. Promosi Kesehatan Hipertensi Pada Usia Produktif Sampai Lansia di Wilayah Desa Lulut RT 04 RW 02 Kec. Klapanunggal Kab. Bogor. Pengabdi Masy Saga Komunitas. 2022;01(02):32–8.
7. Handono NP, Saputri SY. Efektifitas Rendam Kaki Air Hangat Terhadap Penurunan Tekanan Darah Pada Lansia Dengan Hipertensi Di Dusun Krisak Wetan Selogiri. J Keperawatan GSH. 2021;10(1):56–61.
8. Kristiningtyas YW. Efektifitas Rendam Kaki Dengan Air Hangat Terhadap Penurunan Tekanan Darah Pada Lansia Hipertensi. J Keperawatan GSH. 2023;12(2):26–33.
9. Lukitaningtyas D, Cahyono EA. Hipertensi; Artikel Review. J Pengemb ILMU DAN Prakt Kesehat. 2023;2(2):1–19.
10. Astutik MF, Mariyam M. Penurunan Tekanan Darah Pada Lansia Dengan Hipertensi Menggunakan Terapi Rendam Kaki Dengan Air Hangat. Holist Nurs Care Approach. 2021;1(2):77.
11. Kartika M, Subakir S, Mirsiyanto E. Faktor-Faktor Risiko Yang Berhubungan Dengan Hipertensi. J Kesmas Jambi. 2021;5(1):1–9.
12. Malibel YAA, Elisabeth H, Djogo HMA. Pengaruh pemberian hidroterapi (rendam kaki air hangat) terhadap penurunan tekanan darah pada pasien hipertensi di wilayah kerja puskesmas sikumana kota Kupang. CHMK Heal J. 2020;4(Januari):124–31.
13. Fitrina Y, Anggraini D, Anggraini L. Pengaruh Terapi Rendam Kaki Air Hangat dengan Garam dan Serai terhadap Tekanan Darah Pada Lansia Hipertensi. Pros Semin Kesehat Perintis. 2021;4(2):1–10.
14. Ambarsari EM, Ermiati E, Hidayati NO. Pengaruh Rendam Kaki Air Hangat dan Musik Klasik Terhadap Tekanan Darah Ibu Hamil dengan Hipertensi. J Nurs Care. 2020;3(3):221–8.
15. Susaldi S, Rahayu P, Okstoria MR. Penerapan Senam Hipertensi dan Rebusan Air Daun Salam untuk Hipertensi. J Pengabdi Masy Saga Komunitas. 2023;2(2):182–9.
16. Nazaruddin, Yati M, Pratiwi DS. Pengaruh Terapi Rendam Kaki Dengan Air Hangat Terhadap Penurunan Tekanan Darah Penderita Hipertensi Di Wilayah Kerja Puskesmas Poasia Kota Kendari. J Ilm Kesehat Diagnosis. 2021; 16:2302–531.
17. Rumaf F, Tutu CG, Talamati BH. Pemetaan Penderita Hipertensi pada Lansia (Studi Pada Wilayah Kerja Puskesmas Sangkub Kabupaten Bolaang Mongondow Utara). J Ilm Mhs (JIM FH) E-ISSN. 2025; VI (1):27–40.
18. Efendi Q, Ardenny, Anggreini Sn. Pengaruh Senam Hipertensi Terhadap Perubahan Tekanan Darah pada Lansia di Wilayah Kerja Puskesmas Rejosari Pekanbaru. J Ilmu Kesehat. 2023;2(12):79–85.
19. Nora R, Adelia I, Novandra H, Riana L. Penyuluhan Dan Sosialisasi Hipertensi Pada Lansia Di Aur Kuning Bukittinggi Sumatera Barat. J Abdimas Madani Lestari. 2023;5(2):25–9.
20. Iqbal AM, Jamal SF. Essential Hypertension. Karachi, Pakistan: StartPearls Publishing; 2023.

21. Hernita HD, Rosela K, Jl A, No B, Tengah K. Analisis Faktor-faktor yang Berhubungan dengan Kejadian Hipertensi di Wilayah Kerja Puskesmas Tumbang Talaken Kabupaten Gunung Mas STIKes Eka Harap, Indonesia kejadian hipertensi di Puskesmas Tumbang Talaken pada tahun 2021 sampai dengan tahun. J Gen Heal Pharm Sci Res. 2024;2(2).
22. Mega AP, Riwu YR, Regaletha TAL. Hubungan Konsumsi Laru Dengan Kejadian Hipertensi di Desa Penfui Timur Tahun 2019. Media Kesehat Masy. 2019;1(2):39–48.
23. Bolio R, Mappanganro A, Asfar A, Ramli R. Implementation of a Healthy Lifestyle to Lower Blood Pressure and Improve the Quality of Life of Hypertension Patients in The Songkolo Environment, Gowa. Jicn J Intelek dan Cendikiawan Nusant. 2025;4(September):7340–7.
24. Yulidar S, Ririn H, Zukhra M, Hayati M. Penerapan Rendam Kaki Dengan Air Hangat Terhadap Penurunan Suhu Tubuh pada Anak Dengan Hipertermia di Ruang Anggrek Sementara RSUD Arifin Achmad Provinsi Riau. SMASH J Soc Manag Sains Heal. 2025;2(1):66–71.
25. Saputri RY, Susilowati T. Penerapan Terapi Rendam Kaki Air Hangat Ankle Brachial Index pada Penderita. J Ilmu Kesehat. 2025;4(7):429–41.
26. Mariyanti L, Winandari F. Case Report: Efektivitas Hidroterapi Kaki Dengan Air Hangat, Garam, Dan Serai Terhadap Penurunan Tekanan Darah Pada Pasien Hipertensi Di RS Emanuel Banjarnegara. 2024;369–75.
27. Maleo ZX, Rahayu T, Wuriningsih AY. Pengaruh Rendam Kaki dengan Air Hangat terhadap Kualitas Tidur Lansia di Wilayah Kerja Puskesmas Slawi. 2025;2(September).
28. Cristina TY, Andika IPJ, Sriwiyati L, Sapta MW. The Effect of Relaxation on Blood Pressure Reduction in Elderly Patients with Hypertension: A Systematic Review. J Community Health. 2025;11(2):300–7.
29. Asdi M, Ummiyanti. Pengaruh Hipnoterapi terhadap Tekanan Darah Penderita Hipertensi. Garuda Pelamonia J Keperawatan. 2022;4(2).
30. Biahimo NUI, Mulyono S, Herlinah L. Perubahan Tekanan Darah Lansia Hipertensi Melalui Terapi Rendam Kaki Menggunakan Air Hangat. 2020;5(1):9–16.
31. Fadlilah S, Amestiasih T, Pebrianda B, Lanni F. Terapi Komplementer Kombinasi Rendam Kaki Air Hangat dan Aromaterapi Lemon dalam Menurunkan Tekanan Darah Complementary Therapy of Warm Water Foot Soak and Lemon Aromatherapy Combination to Decrease Blood Pressure. 2021;8(2):84–91.
32. Sari SM, Aisah S. Terapi Rendam Kaki Air Hangat Pada Penderita Hipertensi. Ners Muda. 2022;3(2).