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Application of Foot Massage with Lavender Essential Oil on Elderly Hypertension

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ABSTRACT

Background: Hypertension is a common health problem and one of the leading causes of premature death worldwide. It is characterized by persistently elevated systolic and/or diastolic blood pressure and may lead to various serious complications. The increasing prevalence of hypertension is closely associated with population growth and aging. Older adults are particularly vulnerable to hypertension and its complications. Therefore, complementary non-pharmacological interventions are needed to help control blood pressure and improve the quality of life of older adults. **Methods:** This study employed a quantitative experimental design using a one-group pretest-posttest approach. The study population consisted of older adults with hypertension residing at the Embun Kehidupan Bangsa Nursing Home. A total of 20 participants were selected using a total sampling technique. Blood pressure was measured before and after the intervention. The intervention consisted of foot massage using lavender essential oil. Data were analyzed using the paired t-test to determine differences in systolic and diastolic blood pressure before and after the intervention. **Results:** The mean systolic blood pressure before the intervention was 175 mmHg, while the mean diastolic blood pressure was 90 mmHg. Following foot massage with lavender essential oil, the mean systolic blood pressure decreased to 144.80 mmHg, and the mean diastolic blood pressure decreased to 73.80 mmHg. The paired t-test showed a statistically significant difference in blood pressure before and after the intervention, with a p-value of 0.000 ($p < 0.05$). **Conclusion:** Foot massage using lavender essential oil significantly reduced systolic and diastolic blood pressure among older adults with hypertension at the Embun Kehidupan Bangsa Nursing Home. This intervention may be considered a complementary non-pharmacological therapy for supporting blood pressure control in older adults with hypertension.

Introduction

Hypertension is one of the most important modifiable risk factors for cardiovascular morbidity and mortality worldwide and is a major contributor to stroke, coronary artery disease, heart failure, chronic kidney disease, and other forms of target-organ damage (World Health Organization [WHO], 2023; Mancia et al., 2023; Jones et al., 2025). The global burden of hypertension

remains substantial because many individuals remain undiagnosed, untreated, or inadequately controlled (WHO, 2021, 2023). Older adults are particularly vulnerable because aging is accompanied by increased arterial stiffness, reduced vascular compliance, and alterations in autonomic and baroreflex regulation, which contribute particularly to elevated systolic blood pressure (Mancia et al., 2023; Charchar et al., 2024). In addition,



hypertension in older adults is influenced by multiple interacting factors, including physical inactivity, dietary sodium intake, psychological stress, comorbidities, and medication adherence (Li et al., 2022; Choudhry et al., 2022; Wan et al., 2022). In Indonesia, hypertension remains a major public-health concern; the prevalence of hypertension based on measured blood pressure increased from 25.8% in 2013 to 34.1% in the 2018 Basic Health Research survey (Ministry of Health of the Republic of Indonesia, 2018, 2021). Therefore, improving blood-pressure control among older adults requires not only appropriate pharmacological management but also feasible complementary strategies that can be integrated into routine care.

Current hypertension guidelines recommend lifestyle modification alongside pharmacological treatment, including regular physical activity, weight management, dietary improvement, sodium reduction, and appropriate stress management (WHO, 2021; Mancia et al., 2023; Charchar et al., 2024; Jones et al., 2025). Evidence from systematic reviews indicates that non-pharmacological interventions can reduce blood pressure in older adults, although the magnitude and certainty of effects vary according to the intervention (Li et al., 2022). Physical activity has demonstrated significant blood-pressure-lowering effects in hypertensive populations (Zhu et al., 2022), while sodium-reduction interventions have also been associated with reductions in systolic and diastolic blood pressure (Gholizadeh et al., 2022). Medication adherence is another important determinant of blood-pressure control, particularly among older adults who commonly receive multiple medications (Choudhry et al., 2022; Wan et al., 2022). In this context, complementary interventions such as massage therapy may be useful as adjunctive approaches because they are

non-invasive and may promote relaxation without replacing established antihypertensive treatment. Previous meta-analytic evidence suggests that massage may reduce blood pressure, although considerable heterogeneity and methodological limitations remain across studies (Liao et al., 2016; Vijayakumar et al., 2024).

Foot massage has received particular attention because it can be relatively simple to administer and may be feasible in older adults. Studies conducted among older people with hypertension have reported reductions in blood pressure following repeated foot-massage interventions (Anwar et al., 2022; Iswati, 2022). However, the available evidence remains inconclusive. A systematic review of foot reflexology found insufficient evidence to establish a definitive blood-pressure-lowering effect in people with hypertension (Venugopal et al., 2023). Moreover, many previous studies used one-group pretest-posttest or other non-randomized designs, limiting causal interpretation because observed changes may also reflect regression to the mean, repeated measurement, rest, attention, medication effects, or other temporal factors (Barnett et al., 2004; Anwar et al., 2022). Recent meta-analysis likewise indicates that although massage may have beneficial effects on blood pressure, the available evidence is heterogeneous and further rigorous trials are needed (Vijayakumar et al., 2024). Thus, further research is warranted, particularly among older adults living in residential care settings, who may differ from community-dwelling populations in physical activity, medication use, psychosocial conditions, and patterns of health care utilization (Li et al., 2022).

Lavender essential oil may provide an additional relaxation component when

combined with foot massage. Lavender has been investigated primarily for its potential effects on anxiety, psychological stress, and physiological parameters. A systematic review and meta-analysis found that lavender interventions were associated with reductions in anxiety and depression and a small reduction in systolic blood pressure, although effects on physiological outcomes were less consistent (Kim et al., 2021). Similarly, a systematic review and meta-analysis of aromatherapy inhalation among patients with cardiovascular disease reported beneficial effects on anxiety and systolic blood pressure, although the certainty of evidence for blood-pressure outcomes was low (Kavradim et al., 2021). Recent clinical evidence is also relevant: a randomized controlled trial found that lavender-oil leg massage improved blood pressure and several psychological outcomes in patients with hypertension (Meha et al., 2024), while a randomized placebo-controlled pilot study reported reductions in anxiety and blood pressure following inhaled lavender essential oil among adults with hypertension (Wang et al., 2025). These findings suggest that lavender may contribute to relaxation through olfactory stimulation and reduction of psychological stress, which could potentially influence autonomic cardiovascular activity (Kim et al., 2021; Kavradim et al., 2021). Nevertheless, lavender essential oil should not be considered an established antihypertensive treatment, and it remains unclear whether adding lavender to foot massage provides an additional blood-pressure benefit beyond massage alone.

The combination of foot massage and lavender essential oil therefore represents a potentially useful but insufficiently investigated complementary intervention. Existing research has generally examined foot massage, reflexology, aromatherapy, or lavender massage separately, while

differences in participant characteristics, intervention duration, massage techniques, administration routes, and outcome assessment make direct comparison difficult (Anwar et al., 2022; Venugopal et al., 2023; Vijayakumar et al., 2024; Meha et al., 2024). In particular, evidence concerning older adults with hypertension living in nursing homes remains limited. The present study was conducted at Embun Kehidupan Bangsa Nursing Home, where a preliminary assessment on October 10, 2024, identified 34 older residents, including 20 with a medical diagnosis of hypertension. Interviews with five residents also indicated limited knowledge regarding foot massage with lavender essential oil as a complementary approach to blood-pressure management. This setting provides an important practical context for evaluating a low-cost, non-invasive intervention that may be feasible within nursing-home care. However, because the present study used a one-group pretest-posttest design without a control group, its findings should be interpreted as preliminary evidence of pre-post change rather than definitive evidence of treatment efficacy.

Therefore, this study aimed to examine changes in systolic and diastolic blood pressure before and after the application of foot massage with lavender essential oil among older adults with hypertension at Embun Kehidupan Bangsa Nursing Home. The study was designed to provide preliminary evidence regarding the feasibility and observed blood-pressure changes associated with this combined intervention in an older institutionalized population. The research gap addressed by this study is the limited evidence concerning the application of lavender-assisted foot massage specifically among older adults with hypertension in a nursing-home setting. Given the absence of a control group, potential explanations for any observed reduction include the

intervention itself as well as relaxation, attention, repeated measurement, regression to the mean, medication effects, and other contextual factors (Barnett et al., 2004; Choudhry et al., 2022). Accordingly, the findings should be considered hypothesis-generating and supportive of further controlled randomized research rather than conclusive evidence of efficacy.

Methods

Study Design

This study used a quantitative quasi-experimental design with a one-group pretest-posttest approach. Blood pressure was measured before and after the intervention, with each participant serving as their own reference. The design was selected because the study involved the total population of eligible older adults with hypertension at the study site. However, the absence of a control group limits causal inference because changes in blood pressure may also be influenced by medication use, regression to the mean, daily activities, environmental factors, expectancy effects, or other factors occurring during the study period. The study was reported with consideration of the Transparent Reporting of Evaluations with Nonrandomized Designs (TREND) statement. TREND provides a 22-item framework intended to improve the completeness and transparency of reporting for non-randomized intervention evaluations (Des Jarlais et al., 2004).

Study Setting and Participants

The study was conducted at Embun Kehidupan Bangsa Nursing Home in December 2024. The study population consisted of older adults with hypertension residing at the nursing home.

A total of 20 participants were included using total sampling. Thus, all residents who met the eligibility criteria during the study period were included.

Inclusion Criteria

Participants were eligible if they:

- were aged 60 years or older;
 - had a documented diagnosis of hypertension;
 - were residents of Embun Kehidupan Bangsa Nursing Home;
 - were able to communicate and participate in the intervention; and
 - provided informed consent.
- f. Exclusion Criteria

Participants were excluded if they:

- had an acute medical condition requiring immediate treatment;
- had an injury, infection, open wound, or other contraindication to foot massage;
- were unable to tolerate the intervention; or
- withdrew their consent.

Note: The criteria above should be checked against the actual criteria used during participant recruitment. Criteria that were not actually applied should not be presented as if they had been prospectively defined.

Sample Size

Twenty participants were included using total sampling because 20 eligible older adults with hypertension were identified at the study site during the study period. No formal a priori sample-size or statistical-power calculation was reported in the original study protocol. This limitation should be acknowledged because the small sample size reduces statistical precision and limits the generalizability of the findings.

Intervention Procedure

Participants received foot massage using lavender essential oil for 10 minutes, twice per week, during December 2024. The intervention was intended as a complementary non-pharmacological approach rather than a replacement for

antihypertensive medication. Foot massage may promote relaxation through mechanical stimulation and reduction of muscle tension, whereas lavender aromatherapy may provide an additional sensory relaxation stimulus (Juraschek et al., 2024; Wang et al., 2025).

The original research protocol did not provide sufficient information regarding the exact massage sequence, pressure intensity, treated anatomical areas, lavender concentration, carrier oil, therapist qualifications, or standardized intervention protocol. Participants' prescribed antihypertensive medication should not be discontinued because of participation in the intervention.

Blood Pressure Measurement

Blood pressure was recorded using an observation sheet before and after the intervention. Because blood pressure is susceptible to short-term physiological and environmental variation, standardized measurement procedures are important when evaluating changes over time.

Ethical Considerations

Participation was voluntary. Participants were informed about the study procedures, potential benefits and risks, confidentiality, and their right to withdraw from the study. Written informed consent was obtained from participants before the intervention.

Statistical Analysis

Descriptive statistics were used to summarize systolic and diastolic blood pressure before and after the intervention.

Means, standard deviations, minimum values, and maximum values were reported for continuous variables. Because the sample consisted of 20 participants, the Shapiro-Wilk test was used to assess normality. However, for a paired t-test, the relevant assumption is the approximate normality of the paired differences between post-intervention and pre-intervention values, rather than normality of the pretest and posttest variables considered separately. A p-value greater than 0.05 indicates that there is insufficient evidence to reject the assumption of normality, whereas a p-value of 0.05 or less indicates evidence against normality. The original analysis incorrectly interpreted $p < 0.05$ as evidence that the data were normally distributed. This interpretation has been corrected. The reported Shapiro-Wilk result for post-intervention diastolic blood pressure was $p = 0.001$, indicating that this variable itself was not normally distributed. Therefore, the original justification for using the paired t-test was insufficient. The normality of the paired differences should be examined using the raw participant-level data. If the paired differences are approximately normally distributed, a paired t-test may be used. If the paired differences are not normally distributed, the Wilcoxon signed-rank test is more appropriate.

The final analysis should report the magnitude of change, 95% confidence intervals, exact p-values, and an appropriate effect size. Statistical significance was set at $\alpha = 0.05$.

Results

Table 1 Distribution of Average Frequency of Systolic and Diastolic Blood Pressure Before Foot Massage Therapy with Lavender Essential Oil (Pretest) at the Embun Kehidupan Bangsa Nursing Home.



Variable	Mean	Min.	Max.	SD
Systolic blood pressure before foot massage with lavender essential oil	173.35	155	189	2.375
Diastolic blood pressure before foot massage with lavender essential oil	90.75	85	98	912

Based on the table above, it shows that the average systolic blood pressure before foot massage with lavender essential oil was 173.35 mmHg and the average diastolic blood pressure before foot massage with lavender essential oil was 90.75 mmHg.

Table 2 Average Systolic and Diastolic Blood Pressure After Foot Massage Therapy with Lavender Essential Oil (Posttest) at the Embun Kehidupan Bangsa Nursing Home.

Variable	Mean	Min.	Max.	SD
Systolic blood pressure after foot massage with lavender essential oil	147.25	140	160	1.537
Diastolic blood pressure after foot massage with lavender essential oil	80.95	80	84	266

Based on the table above, it shows that the average systolic blood pressure after foot massage with lavender essential oil is 147.25 mmHg and the average diastolic blood pressure after foot massage with lavender essential oil is 80.95 mmHg.

Table 3 Frequency of Data Normality Test Results Using Shapiro-Wilk (n=20)

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Post systolic	.178	20	.95	.879	20	.17
Diastolic Post	.287	20	.000	.792	20	.001

Based on the table above, it shows that the results of the normality test using Shapiro-Wilk obtained the results of post systolic blood pressure of 147.25 mmHg and post diastolic 80.95 mmHg. Therefore, the data is stated to be normally distributed because the p-value <0.05, so this study will use the Parametric test, namely the Paired T-Test.

Table 4 Application of Foot Massage with Lavender Essential Oil to Elderly Patients with Hypertension at the Embun Kehidupan Bangsa Nursing Home

Blood pressure	N	Mean	SD	p- value
Systolic blood pressure before foot massage with lavender essential oil	20	173.35	2,375	0.00
Diastolic blood pressure before foot massage with lavender essential oil	20	90.75	912	
Systolic blood pressure after foot massage with lavender essential oil	20	147.25	1.537	0.00
Diastolic blood pressure after foot massage with lavender essential oil	20	80.95	266	

Discussion

Blood Pressure Before Foot Massage Therapy with Lavender Essential Oil (Pretest)

The results of this study showed that the mean systolic blood pressure before the application of foot massage with lavender essential oil was 173.35 mmHg, while the mean diastolic blood pressure was 90.75 mmHg. These findings indicate that the participants had relatively high blood pressure before receiving the intervention, particularly with regard to systolic blood pressure.

The high systolic blood pressure observed in this study is consistent with the characteristics of hypertension in older adults. Aging is associated with increased arterial stiffness and reduced vascular compliance, which can contribute to an increase in systolic blood pressure. In addition to physiological changes associated with aging, blood pressure may be influenced

by lifestyle factors such as physical inactivity, dietary sodium intake, psychological stress, and medication adherence (Mancia et al., 2023; Charchar et al., 2024). Therefore, blood-pressure management among older adults generally requires a combination of pharmacological treatment and appropriate non-pharmacological strategies.

The findings of the present study are comparable with previous research examining massage and foot-based interventions among people with hypertension. Anwar et al. (2022), for example, reported that foot massage was associated with reductions in blood pressure and anxiety among older people with hypertension in Indonesia. Similarly, Iswati (2022) reported that foot massage was associated with improved blood-pressure control among older adults with hypertension. These findings support the potential role of

foot massage as a complementary intervention in hypertension management.

However, the relatively high baseline blood pressure in the present study should also be interpreted in relation to other factors that may influence blood-pressure measurements. Medication adherence is an important determinant of blood-pressure control, particularly among older adults who may use multiple medications (Choudhry et al., 2022; Wan et al., 2022). Research in Indonesian primary-care settings has also demonstrated that medication use and adherence are important factors associated with blood-pressure control (Setiadi et al., 2022). Dietary sodium intake and physical activity may likewise contribute to differences in blood pressure among individuals with hypertension (Gholizadeh et al., 2022; Charchar et al., 2024).

In addition, blood pressure is inherently variable and can be affected by measurement conditions, recent activity, emotional state, rest, and environmental factors. Standardized blood-pressure measurement procedures are therefore important to minimize measurement-related variation (Stergiou et al., 2021; Cheung et al., 2023). Consequently, the baseline values in this study should be understood as measurements obtained at a particular point in time rather than as a fixed representation of each participant's usual blood pressure.

Overall, the pretest findings demonstrate that the participants

entered the intervention with elevated blood pressure, providing a relevant clinical context for evaluating whether a complementary relaxation-oriented intervention was followed by changes in blood-pressure measurements.

Blood Pressure After Foot Massage Therapy with Lavender Essential Oil (Posttest)

Following the intervention, the mean systolic blood pressure decreased from 173.35 mmHg to 147.25 mmHg, while the mean diastolic blood pressure decreased from 90.75 mmHg to 80.95 mmHg. Thus, the observed mean reduction was 26.10 mmHg for systolic blood pressure and 9.80 mmHg for diastolic blood pressure.

The observed reduction is consistent with previous research suggesting that massage may have beneficial effects on blood pressure. A meta-analysis by Liao et al. (2016) found that massage was associated with reductions in blood pressure among individuals with hypertension or prehypertension. More recent evidence also suggests that massage may reduce blood pressure, although the magnitude of the effect varies between studies and considerable heterogeneity remains (Vijayakumar et al., 2024). Among older adults with hypertension, Anwar et al. (2022) similarly reported reductions in blood pressure following foot massage.

The findings may also be considered in relation to research specifically examining lavender-assisted massage. Meha et al. (2024), in a randomized controlled trial, reported that lavender-oil leg massage improved blood pressure

and psychological outcomes among patients with hypertension. In addition, systematic reviews have suggested that lavender interventions may have beneficial effects on anxiety and some physiological parameters, although the certainty and consistency of the evidence for blood-pressure outcomes remain variable (Kim et al., 2021; Kavradim et al., 2021). A more recent randomized placebo-controlled pilot study also reported reductions in anxiety and blood pressure following inhaled lavender essential oil among adults with hypertension (Wang et al., 2025).

One possible explanation for the observed reduction is the relaxation response associated with massage. Foot massage may reduce perceived tension and promote physical relaxation, while lavender may provide an additional sensory stimulus associated with relaxation. Psychological stress and anxiety can influence autonomic cardiovascular activity, and interventions that promote relaxation may therefore be accompanied by changes in blood pressure (Kim et al., 2021; Kavradim et al., 2021). However, the present study cannot determine whether the observed reduction was caused specifically by the mechanical effects of foot massage, the lavender essential oil, their combination, or the relaxation and attention associated with receiving the intervention.

The magnitude of the observed reduction should therefore be interpreted cautiously. The study did not include a control group, and participants' usual antihypertensive treatment was

not reported as being discontinued. Changes in medication adherence, rest before measurement, daily activity, psychological state, and other contextual factors could have contributed to the posttest values (Choudhry et al., 2022; Setiadi et al., 2022). Furthermore, repeated measurement of blood pressure can itself be associated with changes over time. Regression to the mean is particularly relevant when participants are selected on the basis of elevated measurements, because unusually high initial values may naturally be followed by lower measurements even without an effective intervention (Barnett et al., 2004; Higgins et al., 2019).

Therefore, although the posttest findings demonstrate a substantial observed reduction in blood pressure, they should be interpreted as evidence of pre-post change rather than definitive evidence that foot massage with lavender essential oil independently caused the reduction.

Changes in Blood Pressure Following Foot Massage with Lavender Essential Oil Among Older Adults with Hypertension

The present study demonstrated a decrease in mean systolic and diastolic blood pressure following the application of foot massage with lavender essential oil. The mean systolic blood pressure decreased by 26.10 mmHg, from 173.35 mmHg before the intervention to 147.25 mmHg after the intervention. Mean diastolic blood pressure decreased by 9.80 mmHg, from 90.75 mmHg to 80.95 mmHg.

These findings are broadly consistent with previous studies investigating massage-based interventions for blood-pressure management. Anwar et al. (2022) found that foot massage was associated with reductions in blood pressure and anxiety among older people with hypertension. Iswati (2022) also reported reductions in blood pressure following foot massage among older adults with hypertension. In a broader context, evidence from meta-analyses indicates that massage may have a blood-pressure-lowering effect, although differences in intervention protocols, populations, duration, and methodological quality contribute to heterogeneity between studies (Liao et al., 2016; Vijayakumar et al., 2024).

The present findings are also compatible with evidence concerning lavender interventions. Kim et al. (2021) reported that lavender interventions were associated with improvements in anxiety and depression and changes in some physiological parameters. Similarly, Kavrakim et al. (2021) found that aromatherapy inhalation could improve anxiety and some hemodynamic outcomes among patients with cardiovascular disease, although the certainty of evidence for blood-pressure outcomes was limited. More specifically, Meha et al. (2024) reported beneficial effects of lavender-oil leg massage on blood pressure and psychological outcomes in patients with hypertension. These studies provide a possible basis for considering lavender-assisted massage as a complementary approach to

relaxation and blood-pressure management.

Nevertheless, the interpretation of the present findings must account for the methodological limitations of the study. This research used a one-group pretest-posttest design without a comparison group. Such a design can demonstrate that blood-pressure measurements changed after the intervention, but it cannot establish with certainty that the intervention itself was responsible for the change. Regression to the mean, repeated measurement, rest, changes in medication adherence, daily activities, psychological factors, and other temporal influences may produce similar pre-post changes (Barnett et al., 2004; Higgins et al., 2019). This limitation is particularly important when the initial blood-pressure values are substantially elevated.

The statistical interpretation should also be made carefully. A paired t-test requires the paired differences between pretest and posttest measurements to be approximately normally distributed. Normality of the posttest variable alone is not sufficient to establish this assumption. Therefore, the raw participant-level data should be examined to determine the distribution of the paired differences. If the differences are approximately normally distributed, a paired t-test may be appropriate; otherwise, a non-parametric alternative such as the Wilcoxon signed-rank test should be considered. The final analysis should also report the mean difference, 95%

confidence interval, exact p-value, and an appropriate effect-size estimate.

From a clinical perspective, foot massage with lavender essential oil may be considered a feasible complementary intervention because it is non-invasive and can potentially be incorporated into supportive care for older adults. However, it should not replace prescribed antihypertensive medication or other evidence-based lifestyle interventions. Current hypertension guidelines emphasize comprehensive management, including appropriate pharmacological treatment, physical activity, dietary modification, sodium reduction, weight management, and other healthy lifestyle practices (Mancia et al., 2023; Charchar et al., 2024; Jones et al., 2025).

Overall, the present study provides preliminary evidence that blood-pressure measurements decreased following foot massage with lavender essential oil among older adults with hypertension at Embun Kehidupan Bangsa Nursing Home. However, because of the absence of a control group and the limited sample size, the findings should be regarded as preliminary and hypothesis-generating rather than definitive evidence of treatment efficacy. Future research should use randomized controlled designs with larger samples, standardized blood-pressure measurement procedures, clearly described massage techniques, specified lavender concentrations and administration methods, and appropriate control conditions. Such studies would help determine whether

lavender provides an additional benefit beyond foot massage alone and whether the observed reductions in blood pressure can be attributed specifically to the intervention.

Conclusion

This study found that older adults with hypertension at Embun Kehidupan Bangsa Nursing Home had high blood pressure before the intervention, with a mean systolic blood pressure of 173.35 mmHg and a mean diastolic blood pressure of 90.75 mmHg. Following the application of foot massage with lavender essential oil, the mean systolic blood pressure decreased to 147.25 mmHg, while the mean diastolic blood pressure decreased to 80.95 mmHg.

These findings indicate that a reduction in both systolic and diastolic blood pressure was observed following the intervention. The observed decrease suggests that foot massage with lavender essential oil may have potential as a complementary, non-pharmacological intervention to support blood-pressure management among older adults with hypertension. However, because this study used a one-group pretest-posttest design without a control group, the observed changes cannot be attributed conclusively to the intervention alone. Other factors, including antihypertensive medication, rest, relaxation, repeated blood-pressure measurement, regression to the mean, daily activities, and environmental or psychological factors, may have contributed to the observed changes.

Therefore, foot massage with lavender essential oil should be considered a complementary approach rather than a replacement for prescribed antihypertensive treatment. Further studies using randomized controlled designs, larger samples, standardized massage procedures, clearly defined lavender concentrations, and appropriate statistical analyses are recommended to determine whether the intervention produces a causal and clinically meaningful reduction in blood pressure among older adults with hypertension.

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Conflict of Interest

The authors declare that they have no conflict of interest related to the publication of this article.

Author Contributions

All authors contributed to the development and revision of the manuscript, approved the final version, and agreed to be accountable for all aspects of the work.

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