



The Effect of Acupuncture Therapy on Reducing Blood Pressure in Patients with Hypertension of Liver Hyperactivity Syndrome

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ABSTRACT

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Hypertension is one of the leading causes of death worldwide, accounting for approximately 7.5 million deaths annually. In Indonesia, the prevalence of hypertension has shown an increasing trend over the years. According to the 2018 Basic Health Research (Riskesdas), 34.1% of the Indonesian population suffers from hypertension. Hypertension is a pathophysiological condition characterized by elevated blood pressure above the normal limit of 120/80 mmHg. Acupuncture therapy has been shown to lower both systolic and diastolic blood pressure in patients with Liver Yang Hyperactivity Syndrome-related hypertension. This study aims to determine the effect of acupuncture therapy on blood pressure reduction in patients with hypertension due to Liver Yang Hyperactivity Syndrome. This research used a quantitative approach with a pre-experimental design, specifically a one-group pre-test and post-test design. A total of 20 participants were selected through purposive sampling at the Sumber Sehat Acupuncture Foundation, Bandung, from March to June 2025. The sample consisted of individuals aged 40–60 years who underwent four sessions of acupuncture therapy over four consecutive days. Blood pressure was measured before and after the treatment period. Statistical analysis showed a significant decrease in systolic blood pressure, from an average of 153 mmHg to 130 mmHg ($p = 0.000$), and in diastolic pressure, from 87 mmHg to 75 mmHg ($p = 0.000$), following acupuncture therapy. Traditional Chinese Medicine, particularly acupuncture, is statistically proven to significantly reduce blood pressure in patients with hypertension. Therefore, acupuncture can be considered a complementary alternative in hypertension management.

INTRODUCTION

Hypertension is a global health problem that has a major impact, including in Indonesia, where its prevalence continues to increase. This condition raises the risk of serious complications such as heart disease, stroke, and kidney damage (Kaplan & Victor, 2015). WHO data notes that hypertension causes around 7.5 million deaths annually, while in Indonesia, its prevalence reached 34.1% in 2018 (Riskesdas, 2018). Causative factors for hypertension include a combination of genetics, environment, and lifestyle, with obesity and excessive salt consumption being the dominant contributors (Thomas et al., 2021).

Insulin resistance and endothelial dysfunction also influence the pathophysiological mechanisms of hypertension, while lack of physical activity, unhealthy diets, and chronic stress are additional significant triggers (Das et al., 2023; Gasmi et al., 2021; Man, Li, & Xia, 2020; Sakr, Sirasanagandla, Das, Bima, & Elsamanoudy, 2023). Uncontrolled hypertension can accelerate vital organ damage and increase mortality risk (Whelton et al., 2018; Elliott & Bakris, 2021). Barriers in management such as drug side effects, low patient adherence, and limited

access to healthcare have prompted some patients to turn to alternative therapies, one of which is acupuncture, considered safer and with fewer side effects (Xaverius et al., 2023).

Acupuncture, as a form of traditional Chinese medicine, has been used for thousands of years and is recognized as effective in controlling blood pressure (Wang et al., 2024). Its mechanism involves stimulating body points with fine needles to balance the flow of vital energy (*Qi*), regulate the autonomic nervous system, decrease sympathetic nerve activity, and dilate blood vessels through relaxation effects (WHO, 2002). Cheng (2003) emphasized that acupuncture helps restore the body's energy balance, which influences the cardiovascular system, thereby lowering blood pressure through improved vascular tone and circulation. Modern research supports this, such as the study by Yang et al. (2018), which showed that acupuncture can reduce blood pressure in hypertensive patients by modulating the autonomic nervous system, reducing vascular tension, and increasing peripheral blood flow. Thus, acupuncture is not only a complementary therapy but also demonstrates significant potential in the holistic management of hypertension (Chen, Shen, Tan, Jiang, & Gu, 2018; Fan et al., 2020; Wong, Walid Kassab, Mohamed, Qader, & Mohammed, 2018).

In their study, Yang et al. (2018) explained that acupuncture can increase parasympathetic system activity, which counteracts sympathetic nervous system activity linked with elevated blood pressure. By stimulating specific acupuncture points, particularly those related to cardiovascular system regulation, acupuncture promotes the release of neurotransmitters that regulate blood pressure and induce vascular relaxation. It also helps lower stress hormone levels such as cortisol, known to contribute to hypertension (Yang et al., 2018). Furthermore, their findings indicate that acupuncture can serve as a complementary therapy in hypertension management, providing improved outcomes when combined with conventional treatment. This highlights that acupuncture possesses not only traditional grounding but also scientific support reinforcing its safety and effectiveness in managing hypertension (Goyal & Chauhan, 2024; Green-Gonzalez, 2020; Harvie, 2021; King & Ac, 2025).

Research by Andayani et al. (2020) demonstrated that acupuncture therapy effectively lowers both systolic and diastolic blood pressure in elderly patients with hypertension residing at the Mojopahit Nursing Home, Mojokerto. These findings suggest that acupuncture is a valuable therapeutic alternative for the elderly, especially since this group is vulnerable to the side effects of conventional antihypertensive drugs. Similarly, Pratama and Sari (2021) from the Prima Medistra Acupuncture General Clinic Medan reported that hypertensive patients who routinely undergo acupuncture therapy experienced significant decreases in blood pressure. They noted that therapy outcomes are more optimal with multiple sessions, underscoring the importance of consistency in treatment (Eilertsen & Eilertsen, 2023; Tschuschke et al., 2015).

Yuliawati et al. (2022), in their Palembang study, also found that acupuncture significantly impacts blood pressure reduction in hypertensive patients, both as a stand-alone therapy and as an adjunctive treatment. They concluded that acupuncture reduces sympathetic nervous system activity and stimulates hormone release essential for vascular relaxation. Rahmawati and Setiawan (2023) similarly found acupuncture effective in reducing blood pressure in hypertensive patients, recommending its routine use as part of a non-pharmacological management approach. Research by Firmansyah et al. (2023) further highlighted acupuncture's role in managing high blood pressure in Indonesia, revealing that it significantly lowers blood pressure, particularly in individuals with chronic hypertension.

Preliminary data from the "SS" Acupuncture Foundation in Bandung also supports this potential. Between January and March 2025, the Foundation reported that, of 50 hypertensive patients who underwent acupuncture therapy, 70% experienced a significant reduction in blood pressure after four sessions.

With increasing public awareness of non-pharmacological treatment approaches, this study seeks to analyze the effect of acupuncture on blood pressure in patients with hypertension at the "SS" Acupuncture Foundation Bandung. The study aims to contribute scientifically to the application of acupuncture as a safe, effective, and evidence-based complementary therapy in hypertension management. Based on this background, the author is interested in conducting a study on the effect of acupuncture therapy on reducing blood pressure in patients with hypertension of Liver Yang Hyperactivity Syndrome at the "SS" Bandung Acupuncture Foundation.

The purpose of this study is to determine the effect of acupuncture therapy on reducing blood pressure in patients with *Liver Yang Hyperactivity Syndrome* at the "SS" Bandung Acupuncture Foundation, with a focus on its effectiveness in lowering systolic and diastolic blood pressure and analyzing its complementary role in hypertension management. Theoretically, this research is expected to support the development of complementary therapies, particularly acupuncture, in the treatment of hypertension and serve as a reference for future studies. Practically, the findings may provide additional educational resources for academic institutions, serve as a data source for clinics regarding acupuncture's effectiveness in hypertension with *Yang* hyperactivity, and offer insights for other researchers pursuing similar areas with different approaches and variables.

RESEARCH METHOD

This research used a quantitative method with a quasi-experimental design of the One Group Pretest-Posttest type, in which one group of participants received acupuncture therapy and their blood pressure was measured before and after the intervention to observe the changes. The study population consisted of 102 patients with *Liver Yang Hyperactivity Syndrome* at the "SS" Bandung Acupuncture Foundation during the period of January–June 2025, with a sample of 20 participants selected through purposive sampling based on inclusion and exclusion criteria. The independent variable of this study was acupuncture therapy, while the dependent variable was the reduction in blood pressure. Data were collected through direct observation, questionnaires, and blood pressure measurements using digital sphygmomanometers, then processed through the stages of editing, coding, entry, and tabulation with the assistance of SPSS software. Data analysis was carried out univariately to describe the distribution of data and bivariately to assess the effect of acupuncture therapy on blood pressure using normality, homogeneity, and hypothesis tests with the Independent Sample t-test or Wilcoxon test according to the data distribution. This research was conducted at the "SS" Acupuncture Foundation Bandung in May–June 2025.

RESULTS AND DISCUSSION

1. Univariate Analysis

a. Characteristics of Research Subjects by Gender and Age

Based on the frequency distribution of 20 participants, most of the respondents were male, namely 16 people (80%), while only 4 people (20%) were women.

Table 1. Frequency Distribution of Research Subjects by Gender

Gender	Frequency	Percentage
Man	16	80%
Woman	4	20%
Total	20	100%

Source: Primary Data, 2025

Based on Table 1, of the total 20 participants in this study, most of them were men, namely 16 people (80%), while female participants only amounted to 4 people (20%). These findings indicate that men are more dominant as respondents with hypertension in accordance with the inclusion criteria of the study. Gender is known to play a role in influencing the risk of hypertension. In the productive to elderly age group, men generally have a higher prevalence rate of hypertension than women, especially before women experience menopause.

For age characteristics, it is known that the average age of respondents is 55.1 years, with the youngest age being 40 years and the oldest age being 60 years. The majority of subjects were in the productive age range (40–60 years), which is physiologically susceptible to increased blood pressure due to age and lifestyle factors.

Table 1. Descriptive Statistics of the Age of the Research Subject

Parameter	Value
Number of Respondents	20 people
Youngest Age	40 years
Oldest Age	60 years
Average Age	55.1 years
Baku Junction	6,11

Source: SPSS Output, 2025

Table 2 shows that the age of the study subjects was in the age range of 40 to 60 years, with an average age of 55.1 years and a standard deviation of 6.11. The oldest age is recorded at 60 years old and the youngest age is 40 years old. This shows that the study subjects belong to the middle-aged to early elderly group, which is clinically a group with a higher risk of hypertension. Increased blood pressure in this age group is generally related to the aging process of blood vessels and lifestyle factors.

b. Blood Pressure Measurement Before Intervention

Table 2. Distribution of Frequency of Study Subjects Based on Blood Pressure Levels Before Intervention

Category	Systolic (mmHg)	Frequency (n)	Percentage
Highest score	159	3	15%
Lowest value	144	1	5%
Category	Diastolic (mmHg)	Frequency (n)	Percentage
Highest score	98	1	5%
Lowest value	71	1	5%

Source: Processed data, 2025

Based on Table 3, from a total of 20 study subjects, it is known that the highest systolic blood pressure level before the intervention was recorded at 159 mmHg, experienced by 3 subjects (15%). Meanwhile, the lowest systolic blood pressure level was 144 mmHg, found in 1 subject (5%).

For diastolic blood pressure, the highest value before the intervention was 98 mmHg, which occurred in 1 subject (5%), and the lowest value was 71 mmHg, also recorded in 1 subject (5%). This shows that before acupuncture therapy, most of the subjects were in the range of systolic blood pressure of 150 to 159 mmHg and diastolic blood pressure of 85 to 95 mmHg, which belongs to the category of Level 1 hypertension.

c. Blood Pressure Levels Measurement After Intervention

Table 3. Frequency Distribution of Research Subjects Based on Blood Pressure Levels After Intervention

Category	Systolic (mmHg)	Frequency (n)	Percentage
Highest score	139	4	20%
Lowest value	119	1	5%
Category	Diastolic (mmHg)	Frequency (n)	Percentage
Highest score	86	1	5%
Lowest value	66	1	5%

Source: Processed data, 2025

Based on Table 4, out of a total of 20 study subjects after being given acupuncture therapy intervention, it was found that the highest systolic blood pressure level was 139 mmHg, which was experienced by 4 subjects (20%). Meanwhile, the lowest systolic blood pressure level was recorded at 119 mmHg, which was found in 1 subject (5%). For diastolic blood pressure, the highest value after the intervention was 86 mmHg, which was experienced by 1 subject (5%), and the lowest value was 66 mmHg, which was also recorded in 1 subject (5%).

These results showed that after the intervention, most subjects experienced a drop in blood pressure to a pre-hypertension range to a high normal, indicating a clinical improvement in blood pressure.

d. Analysis of Blood Pressure Levels Before and After Acupuncture Intervention

Table 4. Frequency Distribution of Study Subjects Based on Changes in Blood Pressure Before and After Acupuncture Therapy (Decrease in Systolic Blood Pressure)

Decrease (mmHg)	Frequency (n)	Percentage (%)
10	1	5.0
11	1	5.0
19	1	5.0
20	4	20.0
23	2	10.0
24	4	20.0
25	1	5.0
27	3	15.0
31	2	10.0
32	1	5.0

Source: Processed data, 2025

Based on Table 5, it is known that out of a total of 20 study subjects, the most significant decrease in systolic blood pressure occurred at 20 mmHg and 24 mmHg, experienced by 4 subjects (20%) respectively. The highest decrease of 32 mmHg occurred in 1 subject (5%), while the lowest decrease of 10 mmHg also occurred in 1 subject (5%).

Table 5. Frequency Distribution of Study Subjects Based on Changes in Blood Pressure Before and After Acupuncture Therapy (Decrease in Diastolic Blood Pressure)

Decrease (mmHg)	Frequency (n)	Percentage (%)
0	1	5.0
5	1	5.0
6	1	5.0
7	1	5.0
8	1	5.0
9	1	5.0
11	1	5.0
12	2	10.0
13	6	30.0
15	1	5.0
16	1	5.0
17	2	10.0
19	1	5.0

Source: Processed data, 2025

And according to table 6, for diastolic blood pressure, the most significant decrease occurred at 13 mmHg, experienced by 6 subjects (30%). The highest decrease of 19 mmHg occurred in 1 subject (5%), and there was 1 subject (5%) who experienced no change in diastolic blood pressure at all (decrease = 0 mmHg).

These findings show that the majority of subjects experienced a significant decrease in blood pressure, with fairly even variations in decrease, and the effectiveness of acupuncture therapy in lowering blood pressure can be seen from this distribution pattern.

2. Bivariate Analysis

a. Data Normality Test

Table 6. Data Normality Test Results

Variabel	Kolmogorov-Smirnov (Sig.)	Shapiro-Wilk (Sig.)	Distribution
TD1_Sistol	0,200	0,108	Normal
TD1_Diastol	0,058	0,041	Abnormal
TD4_Sistol	0,200	0,241	Normal
TD4_Diastol	0,056	0,346	Normal

Source: SPSS Output, 2025

Referring to the test results listed in Table 7, the majority of the data in this study included TD1_Sistol, TD4_Sistol, and TD4_Diastol, having a significance value of ≥ 0.05 in both the Kolmogorov-Smirnov and Shapiro-Wilk tests. This shows that the three variables are normally distributed. However, for the TD1_Diastol variable, the significance value on the Shapiro-Wilk test was 0.041 (≤ 0.05), indicating that the data on the variable were not normally distributed.

Overall, most of the data in this study met the assumption of normality, so parametric statistical testing such as the t-test can still be used. However, abnormal variables need to be observed in further analysis and the use of alternative statistical methods can be considered if necessary.

b. Hypothesis Test (T Test)

1) Systolic Blood Pressure Test

The test using the paired sample t-test method was performed to evaluate the significant difference between systolic blood pressure before and after acupuncture therapy. The results of the data analysis showed a significance value (p-value) of 0.000 which was below the threshold value of 0.05. This shows that acupuncture therapy has a significant influence on the reduction of systolic blood pressure.

Table 7. Paired Sample T-Test Results of Systolic Blood Pressure

Parameter	Value
Average (Before)	153,90 mmHg
Average (After)	130,80 mmHg
Average Difference	23.10 mmHg
t count	17,943
p-value (Sig. 2-tailed)	0,000

Source: SPSS Output, 2025

Based on the test results, the $p\text{-value} < 0.05$, then H_0 is rejected and H_1 is accepted. This suggests that there are significant changes in systolic blood pressure before and after acupuncture therapy. In other words, acupuncture therapy has a significant impact on lowering systolic blood pressure in people with Hypertension.

2) Diastolic Blood Pressure Test

Testing with the paired sample t-test method was used to assess the difference in diastolic blood pressure before and after acupuncture therapy. Based on the results of the analysis, a significance value (p-value) of 0.000 was obtained which < 0.05 . These findings showed a statistically significant difference in diastolic blood pressure after the intervention was performed.

Table 8. Paired Sample T-Test Results of Diastolic Blood Pressure

Parameter	Value
Average (Before)	87.30 mmHg
Average (After)	75.70 mmHg
Average Difference	11.60 mmHg
t count	11,211
p-value (Sig. 2-tailed)	0,000

Source: SPSS Output, 2025

The test results show that the $p\text{-value} < 0.05$, then H_0 is rejected and H_1 is accepted. This indicates a significant difference in diastolic blood pressure before and after acupuncture therapy. Thus, acupuncture therapy has a real impact in lowering diastolic blood pressure in Hypertension patients.

3) Hypothesis Test Conclusion

The results of the analysis using the paired sample t-test on systolic blood pressure showed that the p-value was 0.000 which was below the significance limit of 0.05. These findings indicate a rejection of the zero (H_0) hypothesis that there is no significant difference between systolic blood pressure before and after acupuncture intervention. Instead, an alternative hypothesis (H_1) is accepted, which states a significant difference. Therefore, acupuncture therapy has been shown to have a significant influence on lowering systolic blood pressure in people with Hypertension.

In addition, the results of the analysis using the paired sample t-test on diastolic blood pressure produced a p-value of 0.000 which is smaller than the significance level of 0.05.

These results suggest that the zero (H_0) hypothesis that there is no significant difference between diastolic blood pressure before and after acupuncture therapy is rejected. On the other hand, the alternative hypothesis (H_1) which states that there is a significant difference, is accepted. Thus, acupuncture therapy has been shown to have a significant influence on lowering diastolic blood pressure in people with Hypertension.

Referring to the results of the two tests that have been carried out, it can be concluded that acupuncture therapy has a beneficial effect in lowering systolic and diastolic blood pressure in patients with hypertension. Thus, this method can be used as an alternative to non-pharmacological treatment that should be considered in blood pressure management.

1. Based on Gender and Age

Based on the analysis of frequency distribution of 20 study participants, it was found that the majority of subjects were male, namely 16 people (80%), while female subjects amounted to 4 people (20%). These findings indicate that male participants dominated in this study. Gender factors also play a role in the risk of hypertension, where men are four times more likely to experience an increase in blood pressure than women. However, after women experience menopause, the prevalence of hypertension in this group has increased significantly (PTMI, 2019).

In terms of age, the average age of the participants was 55.1 years, with an age range of between 40 to 60 years. Middle-aged to elderly are known to be one of the risk factors for hypertension. As we age, the elasticity of blood vessels tends to decrease, which leads to an increase in blood pressure (WHO, 2022). In addition to physiological changes, other factors such as lifestyle, stress levels, and physical activity also affect the increase in blood pressure in this age group.

2. Based on Blood Pressure Levels Before Intervention

The results showed that the highest systolic blood pressure level before acupuncture therapy was 159 mmHg experienced by 3 subjects (15%), and the lowest systolic blood pressure was 144 mmHg experienced by 1 subject (5%). Meanwhile, the highest diastolic blood pressure before therapy was 98 mmHg experienced by 1 subject (5%), and the lowest diastolic blood pressure was 71 mmHg experienced by 1 subject (5%).

Uncontrolled high blood pressure can be caused by a variety of factors, one of which is prolonged stress and emotional disturbances. In the theory of *Traditional Chinese Medicine* (TCM), protracted stress can cause stagnation of liver qi which triggers internal heat thus contributing to an increase in blood pressure (Will, 2018). This is in accordance with the condition of the study subjects before the intervention, where the average blood pressure was in the category of Hypertension level 1.

3. Based on Blood Pressure Levels After Intervention

After undergoing four sessions of acupuncture therapy, the highest systolic blood pressure was recorded at 139 mmHg in 4 participants (20%), while the lowest value was 119 mmHg experienced by 1 participant (5%). For diastolic blood pressure, the highest was 86 mmHg found in 1 participant (5%), and the lowest was 66 mmHg, also in 1 participant (5%).

The results of this blood pressure reduction indicate that acupuncture plays a role in helping to stabilize blood pressure in patients with hypertension. These findings are consistent with the concept of therapy in Traditional Chinese Medicine (PTT), which states that acupuncture can improve *qi* and blood flow, as well as relieve excess heat in the liver organs. In addition, the use of herbal plants such as *Xia Ku Cao* (*Prunella vulgaris*) is also believed to be able to relieve heat and help control blood pressure in people with hypertension (Xinyi *et al.*, 2021).

4. Analysis of Blood Pressure Reduction Before and After Acupuncture Therapy

From the results of the analysis, it was known that the highest decrease in systolic blood pressure was 32 mmHg and the lowest decrease was 10 mmHg, with an average decrease of 23.10 mmHg. Meanwhile, the highest decrease in diastolic blood pressure was 19 mmHg and the lowest decrease was 0 mmHg, with an average decrease of 11.60 mmHg.

This decrease in blood pressure shows the effectiveness of acupuncture therapy in overcoming hypertension. In TCM, the principle of Hypertension therapy is to lower the heart's heat, calm emotions, and facilitate qi circulation. In addition, this therapy is also believed to be able to balance yin and yang in the body, so that blood pressure can be controlled properly (Xiang *et al.*, 2013).

5. Discussion of Hypothesis Test Results

Based on the results of the analysis using the paired sample t-test, it is known that the *p-value* for systolic and diastolic blood pressure is 0.000 which is below the significance threshold of 0.05. These findings suggest a significant difference between blood pressure before and after acupuncture interventions. Therefore, the null hypothesis (H_0) is rejected and the alternative hypothesis (H_1) is accepted. These results confirm that acupuncture therapy significantly contributes to a decrease in blood pressure in people with Hypertension.

After therapy, systolic blood pressure showed an average decrease of 23.10 mmHg, while diastolic blood pressure decreased by about 11.60 mmHg. These results show that acupuncture has clinical benefits in helping to lower blood pressure. These findings are in line with the concept in Traditional Chinese Medicine (PTT), which believes that acupuncture is able to optimize the smooth flow of *qi* and blood, balance emotional states, and reduce heart heat which is believed to be one of the triggering factors for high blood pressure.

The results of the study showed that the administration of acupuncture therapy routinely had a significant effect on lowering blood pressure in Hypertension patients. These findings are reinforced by the research of Wang *et al.* (2016), which states that acupuncture therapy can effectively lower blood pressure in people with Hypertension when done regularly. In this study, the acupuncture points used included LI11 (*Quchi*) and LV3 (*Taichong*). The effectiveness of each point has been supported by the results of previous research. According to Wan *et al.* (2009), stimulation at the LI11 (*Quchi*) point significantly lowers systolic and diastolic blood pressure through the mechanism of blood vessel dilation and smooth muscle relaxation. Meanwhile, based on a study by Li *et al.* (2019), stimulation at the LV3 point (*Taichong*) is able to lower blood pressure by suppressing the activity of the sympathetic nervous system, which is often a trigger for increased blood pressure in people with hypertension.

The results of this study further strengthen that acupuncture therapy, especially with stimulation at points that have been proven to be effective, can be one of the non-pharmacological treatment methods that is useful as a supporting intervention in addition to medical treatment. With a strong theoretical basis and support from previous studies, acupuncture can be recommended as an alternative therapy to help control blood pressure in Hypertension patients.

6. Discussion of Participant's Tongue Diagnosis

The diagnosis of the tongue of participants with hypertension before therapy showed a distinctive characteristic, namely the tongue muscles appeared red and accompanied by a yellow tongue coating. In the Traditional Chinese Medicine (PTT) approach, these findings indicate the presence of Yang Hyperactivity syndrome in the Liver (*Rising Liver*), which is generally related to symptoms such as high blood pressure, flushed face,

irritability, dizziness, and heat in the upper body. The red color of the tongue muscles indicates the presence of internal heat, while the yellow membrane of the tongue indicates the accumulation of heat and the disturbance of the balance of Yin and Yang energy in the body.

After the participants underwent several times of acupuncture therapy, there was a significant change in the appearance of the tongue. The color of the tongue muscles turns pink, signifying that the internal heat has subsided and the circulation of energy (*Qi*) and blood has become more balanced. In addition, the membrane of the tongue becomes thin white, which reflects normal or near-normal conditions, in the absence of signs of pathological *dampness* or overheating. These changes indicate a positive response to therapy, in which the participant's body condition begins to return towards homeostasis or natural balance according to the PTT principle.

This change in the appearance of the tongue is one of the important visual indicators in the evaluation of the effectiveness of acupuncture therapy for hypertensive patients, because the tongue is considered a mirror of the condition of internal organs in PTT practice. Thus, these results support that acupuncture therapy contributes to clinical improvements that are visible not only from the subjective side of the patient, but also from objective indicators such as tongue diagnostics.



Figure 1. Tongue Before Therapy



Figure 2. Tongue After Therapy

Source: Researcher Documentation (2025)

B. Research Limitations

The researcher realizes that this study has several limitations that can affect the validity and generalization of the research results, including the following:

1. Limited Sample Count

This study only involved 20 subjects so the generalization of the results was limited. The study design used was a one-group pretest-posttest design without a comparative control group, so it could not be completely certain that the changes in blood pressure that occurred were caused exclusively by acupuncture interventions. The uncontrolled design makes the results susceptible to bias from unmeasurable external factors.

2. Absence of control groups

The absence of a control group meant that the results could not be directly compared with the group that did not receive acupuncture therapy. Without comparisons with control groups, it is difficult to eliminate the possibility that factors such as lifestyle changes, psychological, or placebo effects contribute to a decrease in blood pressure.

3. Limitations in Controlling External Factors

This study could not fully control external factors such as emotional state, stress levels, physical activity, and daily consumption of food and beverages that can affect the results of blood pressure measurements. These factors have the potential to be confounding variables that were not measurable in this study, so the final results may not fully reflect the pure influence of acupuncture therapy.

4. Short Research Duration

The limited duration of the study only evaluated the effects of acupuncture therapy in the short term. The study has not been able to measure the effectiveness of acupuncture therapy in lowering blood pressure in the long term, such as keeping blood pressure stable in the months or years after therapy is stopped.

5. Limitations of Literature and Supporting Journals

The limitations of literature and research references that specifically examine the effects of acupuncture therapy on the population of Hypertension patients in Indonesia or in similar cultural and lifestyle contexts are obstacles in expanding the discussion. The majority of available references come from international journals with samples that differ in demographic and clinical characteristics. Some reference journals such as research by Wang et al. (2016) and Xinyi et al. (2021) has shortcomings in the design aspect of the methodology, where the control groups used are not always given strict supervision of lifestyle factors. In addition, the two studies have not evaluated the consistency of the effects of therapy over the long term, and did not take into account variations in individual responses to acupuncture therapy that may be influenced by genetic, psychological, or daily activity patterns.

These limitations are important for future research in order to improve the design, increase the number of samples, use a strict control group, and consider external factors that have the potential to affect the results of the study.

CONCLUSION

The study found that acupuncture therapy was effective in lowering blood pressure among patients with Hypertension of Liver Yang Hyperactivity Syndrome, with systolic levels decreasing from 144–159 mmHg to 119–139 mmHg and diastolic levels from 71–98 mmHg to 66–86 mmHg after four sessions. The mean reductions were 23.10 mmHg for systolic and 11.60 mmHg for diastolic, with paired sample t-test results showing a significant difference ($p = 0.000, <0.05$). These findings support acupuncture as a valuable complementary therapy, offering both theoretical and practical contributions for education, clinical practice, and healthcare literature. Future research is recommended to employ larger sample sizes, randomized controlled designs, and explore additional variables such as treatment frequency, duration, and long-term outcomes to strengthen the evidence base.

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