

## **The Effects of Acupuncture on Hypertension**

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### **Abstract**

*Hypertension is a chronic medical condition that can lead to additional physiological complications including stroke, heart attack, and chronic kidney disease. Due to this, development of new and alternative methods to treat hypertension is necessary. This project emphasizes the treatment of hypertension by the stringent use of acupuncture. Acupuncture show's promise as an alternative method to eliminate this disease from an inflicted individual. In this work, numerous studies were utilized to promote the use of acupuncture as an unconventional yet superior healing method for hypertension. Two studies demonstrate that acupuncture treatment of allotted patients with hypertension experienced a decline in blood pressure following the treatment. One study shows how acupuncture directly affects the neuroendocrine system leading to a decrease in sympathetic neural activity and ultimately a decrease blood pressure. These observations indicate that acupuncture is an effective treatment against hypertension.*

### **Introduction**

Numerous scientific studies have shown that stress is at the root of many diseases and symptoms. Acute stress causes an increase in heart rate and blood pressure; however, further studies are finding that constant acute stressors in the environment lead to the dangerous condition of chronic stress. One major consequence of prolonged stress, recent studies indicate, is hypertension. Africans worldwide suffer from chronic stress in various forms due to socio-economic factors that create impoverished conditions. Michelle Alexander cites in her book *The New Jim Crow* that more African-American adults are in jail or prison, on probation or parole than were enslaved in 1850. Furthermore, she states that black men have been admitted to state prison on drug charges at a rate that is more than thirteen times higher than white men. These statistics give evidence to the existence of a pervading world system of racism and colonialism that creates a societal ambience of stress that is experienced by Africans all over the world. The environmental stress placed on Africans is manifested by the disproportionate levels of disease, namely hypertension. The prevalence of hypertension amongst the Diaspora is at epidemic proportions. Despite the many drug treatments that have been administered to suppress the symptoms, the problem still persists at an alarming rate. Conventional treatment methods for hypertension have proven to be elaborate band-aid approaches that have not reached the cause of this deadly disease that claims the lives of millions of Africans each year. Although the current hypertension status of Africans looks bleak, the alternative healing method of acupuncture is steadily gaining acceptance as an effective treatment against this disease. This ancient healing modality, utilizing specific points on the body to bring a balanced energy flow, is becoming recognized as a

legitimate treatment for hypertension. This development is particularly promising to the global African community because it has the potential to completely cure conditions that were merely treated in the past. The continued acceptance of the time-tested healing method of acupuncture will make a substantial impact to the overall health status of the Pan-African community.

### **Theoretical Framework**

*'Neuroendocrine mechanisms of acupuncture in the treatment of hypertension'* [2], emphasizes electroacupuncture stimulus at specific regions in the human body, such as 5 P-6, and L1 10-11. These regions proved most effective in lowering blood pressure by inhibiting the activation of Rostral ventrolateral medulla (rVLM). Activation of neurons in the arcuate nucleus of the hypothalamus, vIPAG in the midbrain, and NRP in the medulla by Electroacupuncture can inhibit the activity of premotor sympathetic neurons in the rVLM. Increased sympathetic nerve activity elevates blood pressure through arteriolar constriction and by increasing the force and rate of contraction of the heart to increase cardiac output. Renal sympathetic nerve activity also stimulates renin secretion that activates the systemic renin-angiotensin system leading to angiotensin (Ang) II-induced vasoconstriction and sodium retention. Increased sodium retention directly effects the diffusion of water into capillaries, which effects the blood plasma volume and pressure.

*'The Effect of Acupuncture on Blood Pressure in Hypertensive Patients Treated in a Complementary Medicine Clinic'* [3], emphasizes the energetic aspect of acupuncture treatment for hypertension. Vital energy called chi circulates throughout the body and helps to establish homeostasis. Chi circulates the body through 12 main pathways called meridians. Each meridian is named in reference to a specific organ, however the term more so relates to the function of that organ as it pertains to its energetic disposition. For each meridian, there are both surface and internal projections. The surface projections contain acupuncture points where needles are inserted to influence the circulation of chi.

### **Experimental Setup**

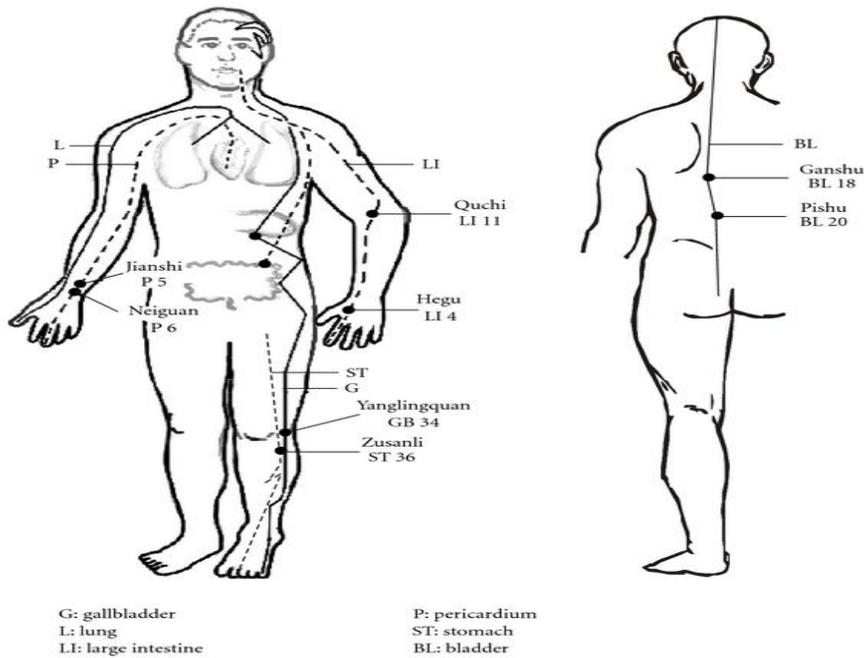
*'The Effect of Acupuncture on Blood Pressure in Hypertensive Patients Treated in a Complementary Medicine Clinic'*, comprised of 29 hypertensive patients Each patient received 5 to 7 acupuncture treatments weekly, on the same day and at the same hour. One of the methods used was the Kiiko Matsu- moto acupuncture technique for blood pressure imbalance. This is a Japanese acupuncture technique that is based on abdominal diagnosis. At each session needles were inserted regularly into all of the seven main points: Sp. 6—strengthens the kidneys, especially kidney yin and essential hypertension due to kidney yin insufficiency. Sp. 9—regulates and strengthens the spleen, hypertension due to dampness. Pc. 8—regulates the heart. Pc. 3—regulates the heart and expands and relaxes the chest. Pc. 5—regulates and strengthens the heart and relaxes the chest. Pc. 6—regulates and strengthens the heart and regulates the vessels. Pc. 4—regulates the heart for rheumatic heart disease, chest pain and palpitations [3].

Acupuncture is carried out with needles (needles CE-02, size 0.2 × 30, Acumed, China). The patients remain with the needles inserted for 25 minutes. The same practitioner (NW)

treated all study patients. Blood pressure measurements taken prior to and following therapy were recorded from the patients' charts. All measurements were done with digital blood pressure equipment (Omeron model MX3, Omeron, Japan). Blood pressure was measured in each participant before and after each treatment at a minimum of 5 consecutive weekly sessions [3].

### Illustrations and Tables

**Study One, Figure 1: Location of acupoints along meridians. Abbreviations of meridians: G: gallbladder; L: lung; LI: large intestine; P: pericardium; ST: stomach; BL: bladder.**

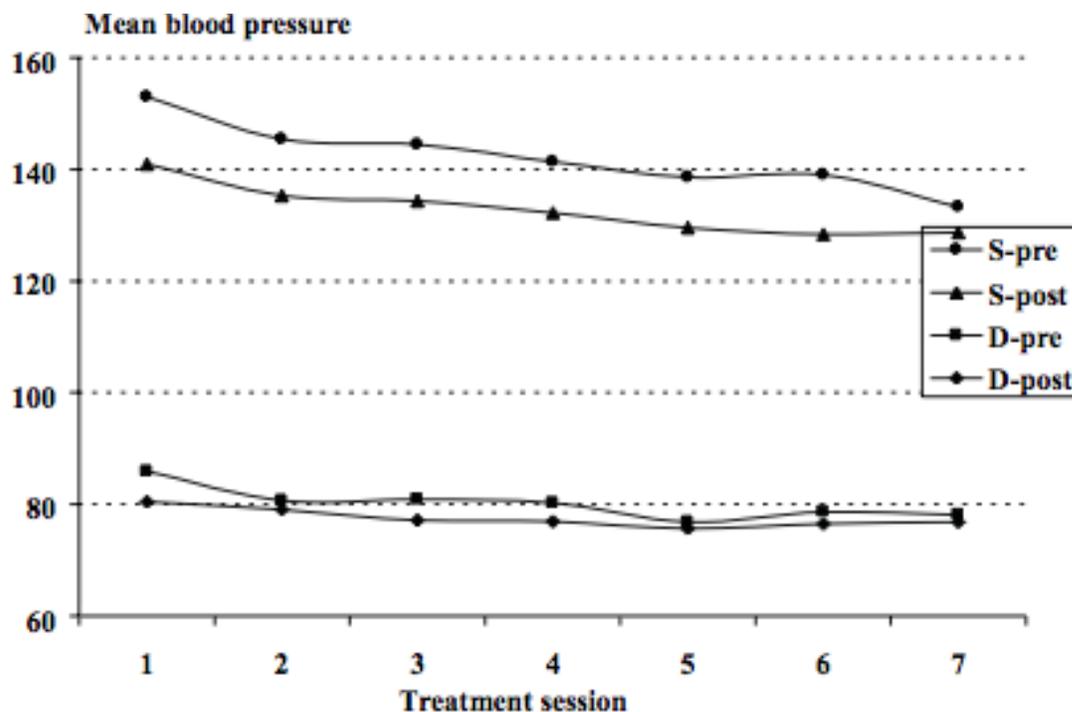


**Study two, Figure one**

**Table 1.** Mean systolic blood pressure before and after each treatment session (mean  $\pm$  SD).

#	N	Systolic blood pressure		P*	Analysis of differences	
		Before	After		Mean	SD
1	29	153.0 $\pm$ 16.2	140.9 $\pm$ 16.4	<0.001	-12.1	12.1
2	29	145.4 $\pm$ 16.8	134.3 $\pm$ 17.4	<0.001	-10.2	10.8
3	29	144.4 $\pm$ 16.2	134.3 $\pm$ 17.3	<0.001	-10.1	9.4
4	29	141.3 $\pm$ 14.8	132.2 $\pm$ 12.2	<0.001	-9.1	10.1
5	29	138.6 $\pm$ 16.0	129.5 $\pm$ 16.8	<0.001	-9.1	10.9
6	23	139.0 $\pm$ 18.0	133.3 $\pm$ 18.6	=0.09	-5.7	9.6
7	20	138.4 $\pm$ 18.7	128.6 $\pm$ 15.3	=0.01	-9.8	11.5

**Figure 2.** Mean systolic and diastolic blood pressure by treatment session. S-pre = systolic pressure before treatment; S-post = systolic pressure after treatment; D-pre = diastolic pressure before treatment; D-post = diastolic pressure after treatment.



**Results:**

In “*The effect of acupuncture on essential hypertension*”, twenty-eight patients with hypertension were treated with acupuncture therapy. Sixteen patients showed improvement exhibiting dramatic decrease in blood pressure and even eradication of original symptoms. Eight patients exhibited mild improvement, while the remaining four patients remained stagnant showing no alleviation [1]. In *Neuroendocrine mechanisms of*

*acupuncture in the treatment of hypertension*, electroacupuncture at specific regions in the human body, particularly P 5-6 and L1 10-11, were most effective in lowering blood pressure. This was achieved by inhibiting the activation of rostral ventrolateral medulla (rVLM) [2]. Furthermore, a study in the Complimentary Medical Clinic tested twenty-nine patients age  $58.5 \pm 16.3$  with high blood pressure. After five acupuncture treatments the patients showed a major decrease in systolic blood pressure with blood pressure starting at  $153.0 \pm 16.2$  compared with  $128.6 \pm 15.3$  after the treatment. Consequently, a multifarious of studies have confirmed that acupuncture can have a great impact on lowering blood pressure.

### **Discussion:**

The treatment of hypertension is very critical, because it inflicts many people around the world. However, treating hypertension with alternative medical practices, like acupuncture, is a controversial issue because many scientists and doctors do not support this method. Despite its lack of support, there is research that reveals how acupuncture can be used as a primary healing method for hypertension. As indicated in the results, the first studied revealed that acupuncture not only succeeded in decreasing blood pressure, but had a great impact on relieving the patients of symptoms. Specifically, this studied showed that 24 out of 28 patients showed some improvement in their blood pressure due to acupuncture treatment, thus producing an 85% success rate. In further research, it was revealed that acupuncture can decrease blood pressure by reducing sympathetic neural activity by the inactivation of the rVLM. It appears that there are specific regions of the body that show a great impact on effecting the activation of rVLM. Lastly, a study done in the Complimentary Medical Clinic showed the effect that acupuncture has on the systolic and diastolic blood pressure. According to the research, systolic blood pressure in 29 patients was tremendously reduced by using acupuncture while their diastolic pressure didn't change much. Although these studies support the idea that acupuncture can affect blood pressure further research should be done to further solidify this idea and to gain additional supporters.

### **Conclusion**

Conventional medicinal approaches to combat hypertension have done little to remediate the continued prevalence of this disease. The current hypertension status of the world is dire, especially for African worldwide, encouraging the need to look into alternative methods. This search for alternate methods has led to the discovery of acupuncture, which is proving to be an effective treatment of hypertension. The results from studies testing the effectiveness of acupuncture are irrefutable. Our findings indicate substantial improvement in systolic blood pressure in 85% of patients in conducted studies. These promising results will continue to draw attention and recognition. As studies continue to show that acupuncture treatment is effective against hypertension more and more people will begin to change to this alternative method. Although conventional medicine would like to discredit acupuncture, the scientific studies conclusively show that this alternative healing modality is effective at reducing systolic blood pressure. More studies are needed to further solidify acupuncture as a legitimate treatment for hypertension.

### **References**

- [1] Yiu, H., & Tam, K. (1975). The effect of acupuncture on essential hypertension read more: <http://www.worldscientific.com/doi/abs/10.1142/s0192415x7500044x>. *The American Journal of Chinese Medicine*, 03(4), Retrieved from <http://www.worldscientific.com/doi/abs/10.1142/S0192415X7500044X>
- [2] Zhou, W. (2012). Neuroendocrine mechanisms of acupuncture in the treatment of hypertension. *Evidence-Based Complementary and Alternative Medicine*, 2012, 1-9. Retrieved from <http://www.hindawi.com/journals/ecam/2012/878673/>
- [3] Nirit, W. *The Effect of Acupuncture on Blood Pressure in Hypertensive Patients Treated in a Complementary Medicine Clinic*. Diss. Ben Gurion University of the Negev, Beer-Sheva, Israel., 2007. Print.