

## Literature Review on Acupuncture Treatment for Parkinson's Disease

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### Abstract

Parkinson's Disease is a degradation of brain functions leads to deterioration in movement, sleep, mental health, pain, memory, self-care, daily activity and other health issues. In modern medicine, treatment of Parkinson's Disease provided mostly involves symptom control which can lead to side effects. Acupuncture treatment in Traditional Chinese Medicine has been researched to be able to relieve the symptoms, reduce the side-effects caused by medication as well as slowing down the progression of the disease. The objective of this thesis is to review the frequency of acupoint selections as well as meridian used to treat Parkinson's Disease. In this thesis, all the data are collected from online databases based on the inclusion and exclusion criteria. The data collected will be tabulated and calculated to conclude the result. There were total 46 journals selected and the most frequently appeared acupoints are Bai Hui appeared 27 times, Tai Chong appeared 25 times, He Gu appeared 24 times, San Yin Jiao appeared 21 times, Zu San Li appeared 20 times and Si Shen Cong appeared 20 times which are the top 6 acupoints. Meanwhile Tai Yang Bladder of the Foot (BL) appeared 24 times and Governor Vessel (GV) appeared 20 times were the top 2 meridians that most frequently used. The World Health Organisation (WHO) defines a Sustainable Healthcare System as a system that improves, maintains or restores health, while minimizing negative impacts on the environment and leveraging opportunities to benefit of the health and well-being of current and future generations. In fact, acupuncture treatment can improve the health and well-being of the Parkinson's disease patient with long term cost savings as a sustainable health care.

### Keywords

Sustainable healthcare, Traditional Chinese Medicine, Acupuncture, Parkinson's Disease

### Introduction

Parkinson's Disease (PD) is a neurological disorder that causes unintended or uncontrolled movement such as tremors and shakiness as well as difficulty with balancing and coordination. As a chronic disease, progression of the disease might lead to mobility issues such

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as difficulty walking and talking as well as mental issues such as behavioral changes, depression, and insomnia (Sveinbjornsdottir, 2016). While virtually anyone is at risk for PD, a clear risk factor is age. Most commonly PD becomes more common in individuals above the age of 60, however about 5 to 10% of people experience onset as early as age 50. The forms of early onset PD are often but not always linked to genetics through inheritance. PD occurs when the nerve cells or neurons in the Basal Ganglia, an area of the brain which controls movement, becomes impaired or die. In healthy individual, dopamine is produced by these nerve cells to facilitate movement in human body, however, in patients that are suffering from PD, the impairment or death of neurons leads to a decrease in dopamine production leading to movement related issue, though the cause of death of neurons in PD is still unknown (Elbaz et al., 2016). There is no known cure for PD, however medicine such as Levodopa allows for the control of symptoms by increasing the body's dopamine supply by replacing missing dopamine supply in the brain. This is often combined with Carbidopa to control the side effects of Levodopa such as Hypotension, restlessness and nausea as well as reducing the dosage needed for improvement to symptoms(Wang et al., 2022).

In Traditional Chinese Medicine, PD is classified as “Tremors”, seen earliest in the classic literature Nei Jing, Su Wen · Zhi Zhen Yao Da Pian Lun and states: “Wind leads to dizziness and tremors, and is linked to Liver wind”, Su Wen · Wu Chang Zhen Da Lun Pian also states that “This disease (PD) causes shakiness or tremors” and “A severe disease that causes dizziness”, stating the disease's close relation to the Liver and Kidney. The disease's nature is deficiency on the inside and excess on the outside as stated “Caused by external evil with Liver and Kidney deficiency, leading to malnourishment of the tendons causing stiffness of the tendons manifesting as tremors or spasm” (Li & Le, 2021). As such PD is also classified as a Meridian disease(Yang et al., 2010). Meridian disease includes the nervous system, muscular system and tendons with symptoms of tendon traction, rigidity, cramps and spasm. PD is a disease of deficiency in the root and excess in the superficiality, being common for elderly patients due to deficiency in their constitution with excess such as blood stasis and wind being the pathogenesis of the disease(Li & Le, 2021). Acupuncture is a widely considered alternative to PD symptom control as some patients experience side effects with taking modern medication. It is speculated that acupuncture is effective at controlling the symptoms of PD as well as slowing down the progression of the disease. Various research also found out that acupuncture is effective at improving neurotransmission (M.S. et al., 2008). This study is to review the acupuncture points and meridians on treating Parkinson's Disease.

## **Methodology**

This review study of this research was done by referring to and collecting data from other multiple online databases, including China National Knowledge Infrastructure, known as CNKI in shortform from year 2015 to 2024. All the inclusion data should be included from any articles that fulfill of TCM and western diagnostic symptoms; research with acupuncture treatment in conjunction with Prescription, Electroacupuncture or other method for patients diagnosed with Parkinson's Disease. All the exclusion data should be excluded from any articles that deal with animal experiments, research without Parkinson's Disease diagnosis; and research with topics of review, progress, case reports or experience sharing. The data collection was tabulated in

Microsoft Excel and frequency of the acupuncture point and meridian used were calculated. The usage of acupuncture points and meridians were analyzed in narrative passages.

## Result and Discussion

A total of 46 journals are eligible for the inclusive criteria that is stated in the methodology and are selected from journals that are published in CNKI. The frequency of Acupoint's appearances is calculated as well as the meridians of the Acupoints, the results are as follows.

### Frequency of acupuncture point

There are a total of 144 acupuncture points appeared in 46 journals which shown in the Table 1 below. The 6 most common acupoints are Bai Hui, Tai Chong, He Gu, San Yin Jiao, Zu San Li and Si Shen Cong.

Table 1 Frequency of Acupuncture point

Acupoints	Frequency	Acupoints	Frequency
Bai Hui	27	Zan Zhu	1
Tai Chong	25	She Jian	1
He Gu	24	Da Dun	1
San Yin Jiao	21	Yang Lao	1
Zu San Li	20	Tian Zhu	1
Si Shen Cong	20	Xin Hui	1
Feng Chi	19	Jian Jing	1
Qu Chi	15	Shui Gou	1
Wu Dao Zhen Chan Qu	14	Hui Zong	1
Yang Ling Quan	13	Shou Wu Li	1
Da Zhui	12	Fu Tu	1
Shen Shu	12	Nao Hui	1
Gan Shu	10	Tai Bai	1
Guan Yuan	10	Yang Fu	1
Wai Guan	10	Fu Liu	1
Feng Long	9	Shuai Gu	1
Nei Guan	9	Zu Lin Qi	1
Tai Xi	9	Zhong Ji	1

Zhong Wan	9	Qi Xue	1
Yin Tang	9	Shui Fen	1
Qi Hai	9	Shui Dao	1
Tian Shu	9	Gui Lai	1
Yin Lin Quan	8	Zhi Gou	1
Chi Ze	8	Xia Xi	1
Ming Men	7	Xing Jian	1
Shen Ting	7	Yi Feng	1
Shou San Li	7	Da Ying	1
Wei Zhong	7	Nao Kong	1
Feng Fu	6	Luo Que	1
Yao Yang Guan	6	Tai Yi	1
Jia Ji	6	Hua Rou Men	1
Xue Hai	6	Da Ling	1
Xuan Zhong	6	Lao Gong	1
Bi Nao	6	Tong Gu	1
Da Chang Shu	6	Shao Hai	1
Qi Hai Shu	6	Feng Men	1
Ge Shu	5	Du Shu	1
Jin Suo	5	Guan Yuan Shu	1
Pi Shu	5	Zhong Shu	1
Shen Mai	5	Yong Quan	1
Xin Shu	5	Shu Qi	1
Lian Quan	5	Liang Qiu	1
Yun Dong Qu	5	Tai Yang	1
Jian Liao	5	Feng Shi	1
Fei Yang	5	Da Heng	1
Jue Yin Shu	5	Ning Shen	1
Shen Men	4	Ying Xiang	1
Shen Zhu	4	Sun Shi Fu Zhen	1
Zhao Hai	4	Ding Nie Qian Xie Xian	1

Yan Hou Bi	4	Zan Zhu	1
Yu Yu	4	She Jian	1
Dan Shu	4	Da Dun	1
Ju Liao	4	Yang Lao	1
Xi Yang Guan	4	Tian Zhu	1
Ji Quan	4	Xin Hui	1
Fei Shu	3	Jian Jing	1
Hou Xi	3	Shui Gou	1
Ji Zhong	3	Hui Zong	1
Xuan Shu	3	Shou Wu Li	1
Zhi Yang	3	Fu Tu	1
Nei Ting	3	Nao Hui	1
Gong Sun	3	Tai Bai	1
Xia Wan	3	Yang Fu	1
Shang Ju Xu	3	Fu Liu	1
Jian Qian	3	Shuai Gu	1
Qu Ze	3	Zu Lin Qi	1
Bi Guan	3	Zhong Ji	1
Qu Quan	3	Qi Xue	1
Yang Chi	3	Shui Fen	1
Shu Xi	3	Shui Dao	1
Ben Shen	2	Gui Lai	1
Cheng Jiang	2	Zhi Gou	1

In TCM, Bai Hui Acupoint is coined as the acupoint of gathering Yang, the acupoint can stimulate Yang Qi, governing the Qi and Blood on the Yang meridian of the body. Professor Fu Wen Bin inspired by the quote in classical literature Nei Jing, Chapter Su Wen · Sheng Qi Tong Tian Lun Pian, “Yang in its natural state being calm and stable is able to optimally nourish the mind; with Yang’s natural ability to ascend and descend in the state of movement, it’s able to nourish the tendon for strength, allowing the muscle to function normally” states that the cause of the disease is related to the deficiency of Yang (Fu et al., 2021). He Gu can help controlling the movement and action of the hand, noted in Zhen Jiu Da Quan “Shakiness of both hands, inability to hold and grab items, consider needling of He Gu.” the acupoints also has the ability to help in the controlling of head and face, the specialty being quoted in Si Zhong Xue Ge 四总穴歌 as “Face and mouth are controlled by He Gu” allowing for the alleviation of symptom of decrease in facial

control in PD (Xu Feng, 2021). As Tai Chong belongs to the Liver Meridian, it is effective at treating the syndrome of Liver wind by calming wind as well as tremor syndrome alike, as PD is linked to the syndrome of Liver wind causing spasm and tremor, Tai Chong can be effective at treating and relieving the symptom, quoted in Zhen Jiu Da Quan “Treat foot tremor accompanied by inability to walk with Tai Chong.” as well as “Limb tremors with inability to hold onto items, select the acupoint Tai Chong”(Xu Feng, 2021).

San Yin Jiao belongs to the Tai Yin Spleen Channel of Foot (SP), San Yin Jiao, acupoints where three of the Foot Yin meridians intersects with each other, the acupoints intersects with Spleen, providing it with the ability to tonify the Spleen to remove dampness, as phlegm is a main form of excess in PD (L. & S.-M., 2006). As phlegm originates from accumulation of dampness and can lead to blockages of meridian. San Yin Jiao intersects with the Liver and Kidney meridian, as stated above, majority of the research and findings suspect PD to be caused by Liver and Kidney deficiency, intersecting with Liver meridian allows for the therapeutic effect of tonifying Liver and calming Liver wind, as Liver is related to the tendon and stores Blood (L. & S.-M., 2006). Zu San Li is an acupoint belonging to the Yang Ming Stomach Channel of the Foot (ST), is one of the most commonly used acupoint, it is an acupoint with the ability to be bidirectional in the aspect of adjustment, tonifying the deficient while purging the excess, on top of the vast amount of therapeutic effect that is applicable on the acupoint, this includes adjusting both Spleen and Stomach, tonifying Qi, expel wind, transform dampness, supporting Healthy Qi and dispel Evil. Si Shen Cong are 4 acupoints situated at the head, 1 cun to the left, right, up and down of Bai Hui, the acupoint to have the effect of tonifying the brain and calming Heart, having the ability to unblock orifices as well as awaken the mind while calming the Heart, suitable for mobility issue caused by the abnormality in the brain as well calming Shen to avoid any extreme or swinging emotion (Cao et al., 2020).

### Frequency of Acupuncture meridian

There is total 16 meridians and vessels categorized from the 144 acupuncture points and the 2 meridians with the highest number of unique acupoints appearances are the Tai Yang Bladder of the Foot (BL) and the Governor Vessel as shown in Table 2 below.

Table 2 Frequency of acupuncture meridian

Meridians	Frequency
Tai Yang Bladder of the Foot (BL)	24
Governor Vessel (GV)	20
Shao Yang Gallbladder Channel of the Foot (GB)	15
Yang Ming Stomach Channel of the Foot (ST)	14
Yang Ming Large Intestine Channel of Hand (LI)	9
Conception Vessel (CV)	9
Extraordinary Points (EX)	7

Shao Yang Triple Energizer Channel of Hand (TE)	7
Tai Yin Spleen Channel of Foot (SP)	6
Shao Yin Kidney Channel of Foot (KI)	6
Uncategorized	6
Jue Yin Liver Channel of Foot (LR)	4
Jiao Shi Scalp Acupuncture	4
Jue Yin Pericardium Channel of Hand (PC)	4
Shao Yin Heart Channel of Hand (HT)	3
Tai Yang Small Intestine Channel of Hand (SI)	3
Tai Yin Lung Channel of Hand (LU)	1

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The Tai Yang Bladder of the Foot (BL) holds the highest number of unique acupoint appearances that is categorized under the meridian. The Bladder is closely related to the Kidney, mutually affecting each other and the Kidney meridian, both handling the external and internal respectively. PD happens more commonly in older patients, as stated in Zhen Zhi Zhun Sheng · Chan Zhen “While being rare in younger individuals, becoming more common as the middle age comes around, and peaking during old age. Older individuals suffer from Yin Blood deficiency, deficiency of water is unable to suppress flaring of fire, being extremely hard to cure” (Wang Kentang, 2014). Chapter Yin Yang Yin Xiang Da Lun in Huang Di Nei Jing mentions that “Kidney generates marrow”. Kidney is related to the bone, generates marrow, connects to the brain, PD is closely related to the brain, and many believe the location of the disease to be at the brain, so Tai Yang Bladder of the Foot meridian is widely used for strengthening (Chengzhi Zhao & Jiaxu Chen, 2017). Classic TCM literature also stated that the circulation of the Governor Vessel closely relates the meridian itself to the brain, it ascends to the head, interacting with the brain, belonging to the Kidney as well as going through the Heart, as well as circulating alongside the Bladder meridian that gathers the essence of every organ and viscera and intersects with the Liver meridian at the peak (Chengzhi Zhao & Jiaxu Chen, 2017).

Acupuncture remains as a relatively low risk and minimally invasive procedure that focuses on improving one’s health span as well as life span, as acupuncture incorporates the theory of Traditional Chinese Medicine allowing it to achieve the effect of preventing future disease by harmonizing the state of the body. Acupuncture is also a practical form of treatment that is widely available as it can be performed by skilled practitioner with minimal apparatus and resources available, being portable and effective as a form of treatment. Acupuncture uses filiform needle that is recyclable, being able to be melted down and reformed into new ones or other product reducing its effect on the environment by reducing waste production and encouraging recycling of materials.

### **Conclusion**

In the review, 6 most common acupoints are Bai Hui, Tai Chong, He Gu, San Yin Jiao, Zu San Li and Si Shen Cong and in addition the 2 meridians with the highest number of unique acupoints

appearances are the Tai Yang Bladder of the Foot (BL) and the Governor Vessel. Among the 46 journals, acupoints or meridians selected have a close relation to the brain, Kidney, or Liver, as in Traditional Chinese Medicine, Parkinson's Disease also known as Tremor syndrome, is closely related to the brain, Kidney, and Liver, as such the Governor Vessel is concluded to be essential in treating Parkinson's Disease if the method of acupuncture is chosen. The acupoints selected are also focused on tonifying the body to treat underlying deficiency as well as expelling the excess. Furthermore, acupuncture treatment considered as an option for alternative treatment which cost lower, the needle is recyclable which can be sustainable system that improves, maintains, or restores health, while minimizing negative impacts on the environment and leveraging opportunities to benefit of the health and well-being of current and future generations. So, acupuncture treatment can be considered as alternative treatment to improve the health and well-being of the Parkinson's Disease patient as a sustainable health care.

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