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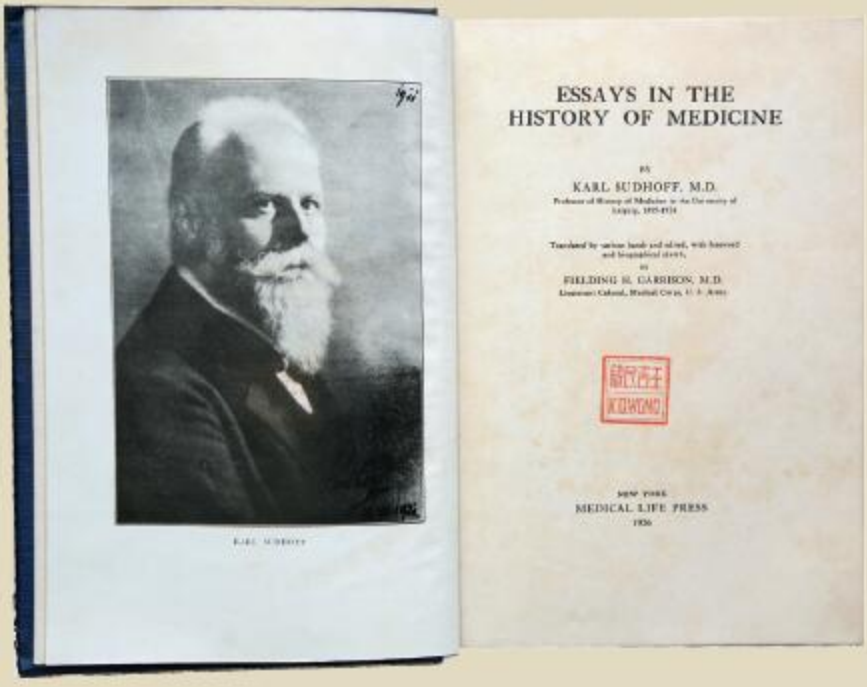


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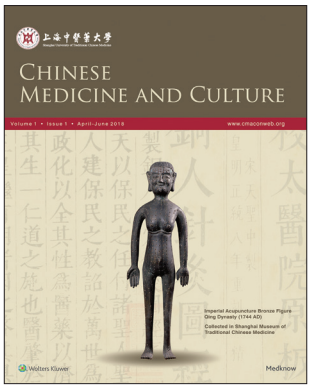


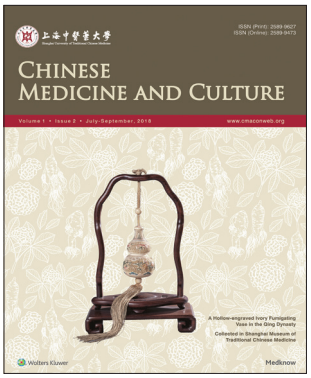


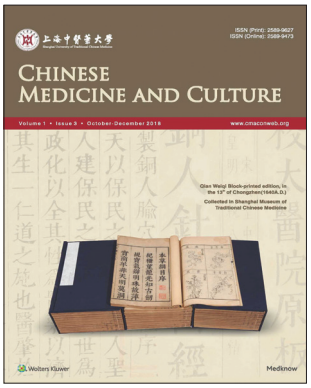


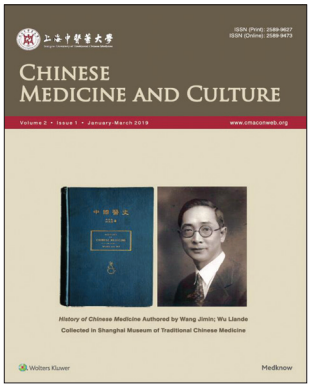


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# Chinese Medicine and Culture

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Review Article

# Revisiting the Medical Work of George Soulié De Morant

**Jean Claude Dubois**
Anti-Pain Center, Georges Pompidou European Hospital (HEGP), Paris, France

## Abstract

It is now time to revisit the medical work of George Soulié de Morant (1878–1955). Over the past 64 years, studies and research on acupuncture-moxibustion have undergone exceptional growth in China, and Western sinology has made remarkable progress. A careful rereading will bring a new light to this decisive work.

**Keywords:** Acupuncture, Chinese medicine, france, needles and moxas, sinology, Soulié de Morant

## The French Acupuncture at the End of the 19th Century

The story of the reception of Chinese acupuncture in France and then in the West is like a fire that would have smouldered for a long time. The medical work of George Soulié de Morant （苏里耶・德・莫兰，1878–1955) came at the right time to present this therapy in all its richness after three centuries of trial and error. Indeed, it was only at the end of the 19th century that two books provided the French public with sufficiently documented theoretical and practical data on *Chinese Acupuncture* (《中医针灸》）.[1]

The first, published in 1863, is *Medicine among the Chinese* （《中国人的医学》）by Philibert Dabry de Thiersant （梯尔桑，1826–1898）.[2] This naval officer had resided in China from 1857 to 1861. He describes for the first time, the pathways of the 14 meridians without confusing them with vascular paths, unlike what has been done since the 17th century. It connects these pathways with the internal organs and bowels as part of the traditional Chinese correspondence system. A large chapter is devoted to the therapeutic method using needles and moxas. However, this book still has many imperfections. The second book, *Medicine and Pharmacy among the Chinese and Annamites*（《中国人和越南人的中医药》）by Jules Regnault（玉尔・利牛，1873–1962) dates from 1902.[3] Regnault, a naval doctor who arrived in Vietnam in 1898, began studying Chinese in particular to understand the links between ancient Chinese medicine and philosophy. His book was awarded the gold medal of the Colonial Institute of Bordeaux.

He also unveiled this new therapeutic method, which was soon to be very successful: acupuncture-moxibustion. However, like Dabry de Thiersant's, it quickly fell into oblivion. In France, it was the "Belle Époque" (1875–1914), positivism and scientism triumphed, the spirits were hardly prepared for teachings from the Far East.

## The Essor of the 20th Century

The Great War (1914–1918) and the Krach of 1929 profoundly changed mentalities. At the end of the 1930s, Europe's economic, social, political, and cultural context had been completely renewed. The public was more open to new ideas. Remarkable studies and books were published on China, written by such prominent personalities as Marcel Granet and Henri Maspero. These advances in Western sinology were to be accompanied by a better understanding of Chinese medical science, particularly acupuncture and moxas.

Marcel Granet （葛兰言，1884–1940) had been a disciple of Édouard Chavannes (沙畹，1865–1918) "the master of Chinese studies throughout the Western world."[4] He was also a sociologist, a member of the French school of Durkheim. He had stayed in Beijing from 1911 to 1913 and then in 1919. His project was to decrypt the foundations of ancient China's

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society and world system. In 1934, he published La Pensée Chinoise （《中国之思维》）, which is still relevant today after 85 years.[5] This book devotes a long chapter–150 pages–to the science of Numbers in ancient China and the role it played in medicine. Several extracts from *Huang Di Nei Jing*（《黄帝内经》） are used [Figure 1].

Henri Maspéro (马伯乐，1883–1945) had been head of the Chinese teaching chair at the *École française d'Extrême-Orient*（法国远东学院） in Hanoi（河内） from 1911 to 1920. He then taught Chinese at the *Collège de France*（法兰西学院）. In 1927, he published *La Chine Antique*（《古代中国》） in which he traces the political and institutional, religious, and intellectual history of the Middle Kingdom from its origins to the foundation of the Ts'in Empire in the 3rd century B.C. Maspero also worked on Taoism. His article on "the processes of nurturing the vital principle in the ancient Taoist religion," especially the pages devoted to "embryonic breathing," made a strong impression on doctors.[6]

The influence of these scientists was comparable to that exerted on the medical community three decades later by the British biochemist Joseph Needham (李约瑟，1900–1995).[7] Though difficult to understand, notions of ancient Chinese thought, philosophy and science were becoming more familiar to a segment of the European public. Acupuncture-moxibustion no longer only appeared as an empirical practice from the Neolithic period. It was based on rational foundations, on a cosmology developed under the Han, itself dependent on much older discoveries dating back at least to the time of the Spring and Autumn and the Warring Kingdoms. Theories such as the "Covering Sky" theory（盖天说）, the four celestial Asterisms (四象，Green Dragon, White Tiger, Black Warrior, and Vermilion Bird), Yin Yang（阴阳） or the five elements（五行） deserved special attention for the role they had played in the formation of the medical corpus. Experts in the history of science were even wondering about the possible anteriority of Chinese scientific discoveries over those of ancient Greece.[8]

It was in this context of emulation and multiple questions that George Soulié de Morant's medical work appeared.

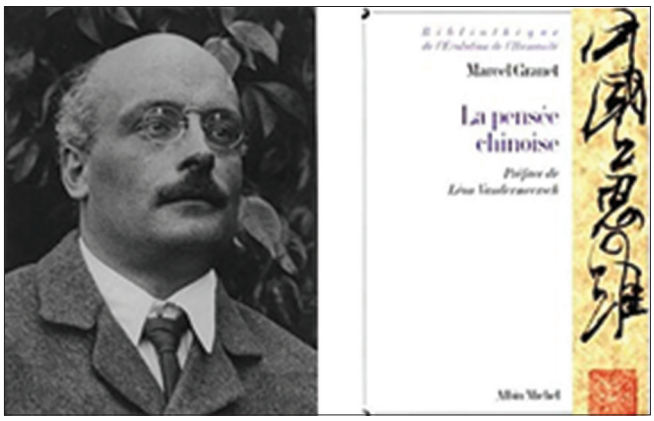


**Figure 1:** Marcel Granet, author of *Chinese thought*（葛兰言，《中国之思维》）

## The Medical Work of George Soulié De Morant

### Biographical information

Charles Georges Soulié, who became George Soulié de Morant in 1917, was born in Paris on December 2, 1878. At a very young age he had the opportunity to study Chinese, which would later prove so useful to him. As a teenager, he would have liked to study medicine, but fate decided otherwise. Appointed as an interpreter in China by the French government, he first stayed in Beijing from December 1901 to July 1902 and was appointed to the Shanghai Consulate in 1903, until March 1906. He finally resided in Kunming（昆明） from 1907 to 1909.

Following his stays in China, Soulié de Morant had an abundance of documentation at his disposal. Until 1934, he published ≥30 essays, translations of novels, Chinese poems, and a "History of China from antiquity to 1929"[9] [Figure 2].

His first article on Acupuncture dates back to 1929.[10] In 1932, under his influence, the first acupuncture consultation was created in Paris at the Bichat Hospital（比沙医院）. Other consultations in Parisian hospitals soon followed. In 1934, he published a short introductory book on Acupuncture, *Précis d'acuponcture chinoise*.[11] In 1939, the first volume of his great works appeared, followed by a second volume in 1941.[12] The complete opus in five volumes was only released after his death on May 10, 1955 at his home in Neuilly-sur-Seine（塞纳河畔讷伊）, near Paris[13] [Figure 3].

### Sources and originality of the work

We can not longer apprehend the medical work of George Soulié de Morant without considering his Chinese sources and the way he used them (here I turn to the Japanese sources, which appear secondary). The exceptional growth of studies and research carried out in China over the past three quarters of a century on acupuncture, as well as the progress made in France by medical sinology, allow for a much more refined approach than those proposed so far.[14]

Soulié de Morant himself lists these works in the Liminary of Volume I of his treatise ("L'Acupuncture Chinoise" 1939 p. 23). It is completed below with some details, using the pinyin transcription system.

- *Zhen Jiu Da Cheng* (《针灸大成》*Grand Compendium of Needles and Moxas*) by Yang Jizhou（杨继洲）, in

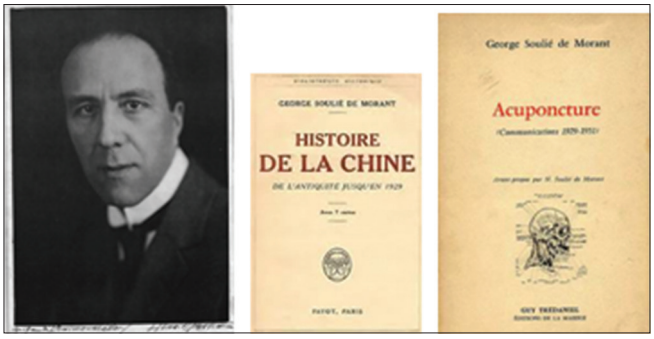


**Figure 2:** George Soulié de Morant, articles and books from 1929（苏里耶・德・莫兰）

ten volumes (1601). Soulié de Morant uses the *Zeng Bu Zhen Jiu Da Cheng* （《增补针灸大成》）, the small edition completed in six volumes published in Shanghai in 1926. According to his phonetic transcription, Soulié de Morant calls him "Tchenn tsiou ta Tchreng," in short Ta Tch.

- Li Chan's（李梴）*Yi Xue Ru Men* (《医学入门》*Gateway to Medical Studies*) was published in 1575. A book of general medicine of which, two volumes are devoted to Acupuncture. Soulié de Morant uses the *Jiao Zheng Zeng Tu Yi Xue Ru Men* (《校正增图医学入门》) small edition in ten volumes, revised and accompanied by illustrations Shanghai, 1924. He named this book I Sio Jou menn, in short ISJM
- *Zhen Jiu Yi Xue* (《针灸易学》*Easy study of Needles and Moxas*) by Li Shouxian（李守先）, three volumes 1798. Soulié de Morant has in front of him the *Hui Tu Zhen Jiu Yi Xue* (《绘图针灸易学》*Easy study of Needles and Moxas with Drawings*)， small edition of Shanghai 1918. He called it Tchenn tsiou i Sio, abbreviated to I Sio.
- *Zhen Jiu Yi Zhi* (《针灸易知》*Easy Knowledge of Needles and Moxas*), a collective book published by a group of doctors, Shanghai 1919. Soulié de Morant writes Tchenn tsiou i tche, in short I Tche.
- *Ci Yuan*（《辞源》*Dictionary of the Chinese Language*）1916 edition. Soulié de Morant uses this dictionary for the names of diseases, their definitions, and technical terms from Chinese medicine. He calls it "Tsre-iuann" [Figure 4].

In his book, Soulié de Morant juxtaposes extracts from these classic texts with his own discoveries, the fruit of his clinical practice over a quarter of a century. As he always makes sure to distinguish these Chinese sources from his own interpretation. Each loan from these ancient texts is clearly referenced, volume, page, recto verso, etc. We must be grateful to him for the honesty of this process. Thanks to his talent as a translator, these texts appear to us today in all their strength and simplicity, in a concise and clear language.

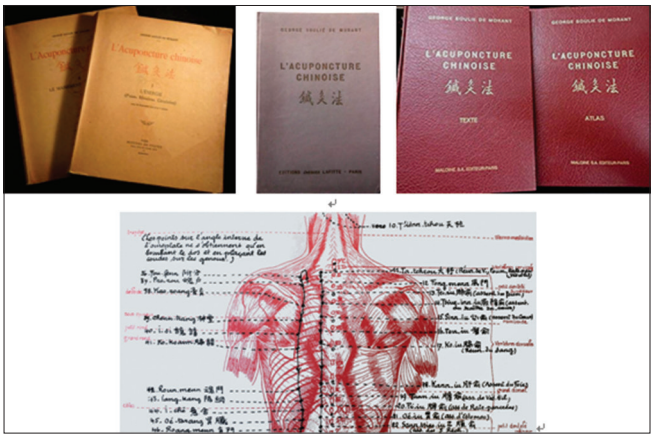


**Figure 3:** George Soulié de Morant *L' Acupuncture chinoise* (1939, 1941, 1957, and 1972)

However, Soulié de Morant adopted a new plan, different from that of the Chinese classics, to present to acupuncture-moxibustion. This seems preferable to him, keeping more in line with the European spirit. Certainly, as his work gains in originality, it is more attractive to a western audience. Nevertheless, it's at the cost of a loss of unity of the materials used, which are fragmented and distributed in new chapters, without any explanatory commentary. This defect remains the cause of many perplexities, too few of its readers having access to the original texts. Another disadvantage is the use of the *Hua Ying Zi Dian* (《华英字典》*Dictionary of the Chinese Language*) published in 1916 containing all definitions of medical technical terms and description of diseases. This reference is very interesting historically, but it has become insufficient in light of the encyclopedic data we have nowadays.

In short, the medical work of George Soulié de Morant is of great richness. It arouses the reader's admiration of and even amazement at the quality and scope of the work accomplished. Nowadays, it appears more as a springboard to go further, a precious tool for deepening the Chinese medical corpus than as a complete, definitive work, which would be sufficient on its own. It is both its size and its limit.

## Illustration

Let's illustrate this with a very simple example in the interest of this review of the work of George Soulié de Morant. In the 5th volume of *L'Acuponcture Chinoise*, devoted to therapeutics (pp. 661–989), published after his death, the author illustrates his speech with 343 quotations from the *Zhen Jiu Da Cheng*, each accompanied by his reference (volume II or III and page number) in the Small Shanghai 1926 edition. However, no further explanation is given, particularly as to the origin of the texts from which these quotations are extracted. All of them come from the group of ten Songs of Points that make up volume 2 of the original edition of Yang Jizhou's work. Here are the details:


**Figure 4:** Main Chinese sources of George Soulié de Morant

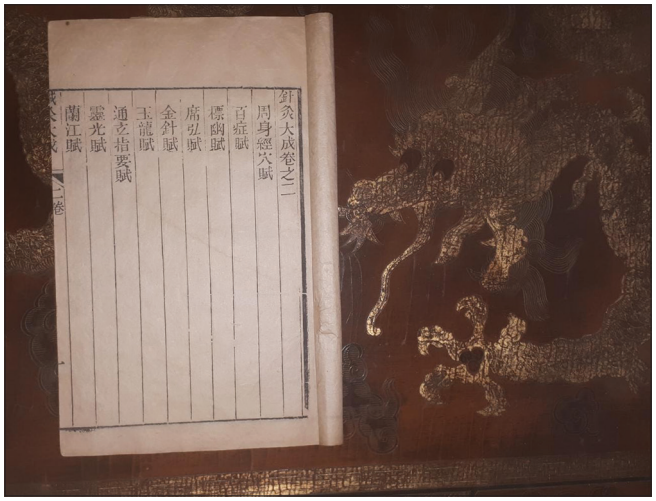


**Figure 5:** *Zhen Jiu Da Cheng*（《针灸大成》*Grand Compendium of Needles and Moxas*） summary of volume 2, edition1880

- *Song of the body points*（《周身经穴赋》） – 4 occurrences
- *Song of a hundred deseases*（《百症赋》） – 32 occurrences
- *Song of unveiling the mystery*（《标幽赋》） – 76 occurrences
- *Song of Xi Hong* （《席弘赋》） – 19 occurrences
- *Song of the gold needle* (《金针赋》) – 44 occurrences
- *Song of the jade dragon* （《玉龙赋》） – 40 occurrences
- *Song of principles to communicate with the mystery*（《通玄指要赋》） –87 occurrences
- *Song of immaterial light*（《灵光赋》） – 29 occurrences
- *Song of the orchid river*（《兰江赋》）– 7 occurrences
- *Song of the energetic circulations, or of the method midi-minuit*（《流注指微赋》） – 5 occurrences [Figure 5].

It is clear that the context of each of these quotations is important. These famous songs have their own history, their own distinctiveness, they provide a concise way for such transmission, such or such aspect of the science of needles and moxas. We can therefore report on this and thus complete George Soulié de Morant's text with an appropriate commentary.

## Conclusion

The careful review of George Soulié de Morant's medical writings invites a real deepening of the Chinese medical tradition. Soulié de Morant advocated a dialogue between modern science from the West and China's 1000-year-old tradition. In the introductory part of his major book, he proposes to *scientifically expose the ancient tradition*. Certainly, only he drafted this project. However, the perspective remains valid, joining that of Tang Zonghai (唐宗海), the leader of the Comparative School of Chinese and Western Medicine at the end of the 19th century – Zhong Xi Yi Hui Tong Pai(中西医汇通派 Comparative School of Chinese and Western Medicine)[15] [Figure 6].


**Figure 6:** Tang Zong Hai(唐宗海) and the Comparative School of Chinese and Western Medicine（中西医汇通派）

George Soulié de Morant revered "Truth," "Ancients," and "Tradition." From China, the country he deeply admired, he wrote in 1928: "The real China is the one whose past is still alive through the continuity of its traditions, the one whose immediate and more distant future weighs heavily on Europe's destiny."[16] Here, we are!.

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### Conflicts of interest

There are no conflicts of interest.

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Review Article

# Studies on Xin'an Medicine（新安医学） since the Ming and Qing Dynasties

**Jian Wang, Yebo He**

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## Abstract

This article reviews the studies on Xin'an medicine since the Ming and Qing dynasties and introduces the representative Xin'an physicians in different periods and their medical works as well as the efforts made by researchers and scholars in the 20th Century, aiming to interpret the historical values and impacts of Xin'an medicine and hence facilitate its development in future.

**Keywords:** Academic characteristics, Ming and Qing Dynasties, Xin'an medicine (新安医学)

## Introduction

Xin'an medicine (新安医学), characterized by regional culture, has a long history which can be traced back to 800 years ago. Being widely accepted and followed with interest, it is renowned for numerous prominent physicians, profound cultural heritage, and abundant medical classics. Its medical achievements in the Ming and Qing dynasties are the most remarkable. To comprehend and recognize the historical values and medical impacts of Xin'an medicine, it is imperative to review the studies on Xin'an medicine which date back to the Ming and Qing dynasties as well as to investigate its socio-cultural background.

## The Study on Xin'an Medicine in the Ming Dynasty

As far back as the 16th century when Xin'an medicine was in its golden age, a great literator and dramatist from Huizhou, Wang Daokun (汪道昆1525–1593), wrote in the foreword of *Yi Fang Kao* (《医方考》 *Investigations into Medical Prescriptions*) [Figure 1] that the TCM practitioners in out prefecture are the most prominent ones. They are respected just as the Confucian scholars are esteemed. Besides, the prominent TCM practitioners are all transferred from Confucians.

## The Systematic Records on Xin'an Physicians and Their Medical Books in the Early Qing Dynasty

In 1748, Wang Yi (汪沂), a scholar in Huizhou, wrote in the foreword of the emendated version of *Yi Xue Xin Wu* (《医学心悟》 *Medical Enlightenment*),[1] "Huizhou is famous for its great mountains and beautiful rivers. People in this area are mostly renowned for their achievements in medicine. For examples, Wang Shuangxi (王双溪) wrote *Shang Han Lun Zhu* (《伤寒论注》 *Annotated Treatise on Cold Damage*); Zhang Gao (张杲) wrote *Yi Shuo* (《 医说》 *On Medical History and Treatment*); Bao Yongliang (鲍用良) wrote *Jing Yan Zhen Fa* (《经验针法》*Experiential Acupuncture*); Cheng Wenbin (程文炳) wrote *Jing Yan Fang* (《经验方》 *Experiential Effective Prescriptions*); Lu Yangong (陆彦功) wrote *Shang Han Bian Lan* (《伤寒便览》 *Brief Guide for Treatise on Cold Damage*); Wang Shishan (汪石山) wrote *Wang Shi Shan Yi Shu Ba Zhong* (《汪石山医书八种》 *Wang Shishan's Eight Medical Books*), *Tui Qiu Shi Yi* (《推求师意》 *Interpretation of the Master's Teachings*) and *Shi Shan Yi An* (《石山医案》 *Wang Shishan' Medical Cases*); Cheng Songya (程松厓) wrote *Song Ya Yi Jing* (《松厓医经》*Songya' Medical Classic*); Jiang Zhengpu (江正甫) wrote *Yi Xue Yuan Li* (《医学原理》 *Medical Principles and Theories*); Wang Huan (汪宦) wrote *Yi Xue Zhi Yi* (《医学质疑》 *Medical Queries*); Xu Chunpu (徐春甫) wrote *Gu Jin Yi Tong Da Quan* (《古今医统大全》 *Complete Compendium of Ancient and Modern Medical Works*) and

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**Figure 1:** The bamboo paper and thread-bound edition of *Yi Fang Kao* (《医方考》 *Investigations into MedicalPrescriptions*) in the Ming dynasty and its foreword (on the left) written by Wang Daokun (汪道昆)

*Yi Xue Jie Jing Liu Shu* (《医学捷径六书》 *Six Books of Medical Shortcuts*); Wang Yongbin (汪用宾) wrote *Fang Shu Ji Shuo* (《方书集说》*Collection of Theories in Prescription Books*); Wu Shanshi (吴三石) wrote *San Shi Yi Jiao* (《三石医教》*Sanshi' Medical Teachings*); Bi Maoxiang (毕懋襄) wrote *Yi Hui* (《医荟》*Medical Treasury*); Zhou Shixian (周士先) worte *Ming Yi Zhai Cui* (《明医摘粹》 *Selection of Medical Quintessence in the Ming Dynasty*); Yu Zijing (余子敬) worte *Zhu Zheng Xi Yi* (《诸证析疑》*Analysis and Clarification of TCM Patterns*); Wangang (汪昂) wrote *Su Wen Ling Shu Lei Zuan Yue Zhu* (《素问灵枢类纂约注》*Classified Compilation and Concise Annotation of Lingshu and Suwen*), *Ben Cao Bei Yao* (《本草备要》 *Complete Essentials of Materia Medica*) and *Yi Fang Ji Jie* (《医方集解》 *Collected Exegesis of Medical Prescriptions*). Moreover, there are other prominent physicians such as Zhang Zichong (张子充), Jiang Mingyuan (江明远), Wu Nanxun (吴南熏), Ma Zhuqing (马竹庆), Hu Qingyin (胡清隐), Cheng Shiqing (程时卿), Cheng Jiangtong (程敬通), and Cheng Changyu (程长裕)."

This foreword recorded 24 Xin'an physicians and 28 medical books from the Northern Song dynasty (1056–1063) to the reign of Qianlong during the Qing dynasty, not including Cheng Guopeng (程国彭) and his *Yi Xue Xin Wu* (《 医学心悟》 *Medical Enlightenment*). To be specific, there were seven physicians and three medical books in the Song and Yuan dynasties, i.e., Zhang Zichong (张子充), Wu Nanxun (吴南熏), Zhang Gao (张杲) and his *Yi Shuo* (《 医说》 *On Medical History and Treatment*), Wang Shuangxi (王双溪) and his *Shang Han Lun Zhu* (《伤寒论注》 *Annotated Treatise on Cold Damage*), Jiang Mingyuan (江明远), Bao Yongliang (鲍用良) and his *Jing Yan Zhen Fa* (《经验针法》 *Experiential Acupuncture*), and Ma Zhuqing (马竹庆); there were 17 physicians and 25 medical books in the Ming and Qing dynasties, i.e., Cheng Wenbin (程文炳) and his *Jing Yan Fang* (《经验方》*Experiential Effective Prescriptions*), Lu Yangong (陆彦功) and his *Shang Han Bian Lan* (《伤寒便览》*Brief Guide for Treatise on Cold Damage*), Wang Shishan (汪石山) and his *Wang Shi Shan Yi Shu Ba Zhong* (《汪石山医书八种》 *Wang Shishan's Eight Medical Books*), *Tui Qiu Shi Yi* (《推求师意》 *Interpretation of the Master's Teachings*) and *Shi Shan Yi An* (《石山医案》*Wang Shishan' Medical Cases*), Cheng Songya (程松厓) and his *Song Ya Yi Jing* (《松厓医经》*Songya' Medical Classic*), Jiang Zhengpu (江正甫) and his *Yi Xue Yuan Li* (《医学原理》 *Medical Principles and Theories*), Wang Huan (汪宦) and his *Yi Xue Zhi Yi* (《医学质疑》 *Medical Queries*), Xu Chunpu (徐春甫) and his *Gu Jin Yi Tong Da Quan* (《古今医统大全》 *Complete Compendium of Ancient and Modern Medical Works*) and *Yi Xue Jie Jing Liu Shu* (《医学捷径六书》 *Six Books of Medical Shortcuts*), Yu Zijing (余子敬) and his *Zhu Zheng Xi Yi* (《诸证析疑》*Analysis and Clarification of TCM Patterns*), Wang Yongbin (汪用宾) and his *Fang Shu Ji Shuo* (《方书集说》*Collection of Theories in Prescription Books*), Wu Shanshi (吴三石) and his *San Shi Yi Jiao* (《三石医教》 *Sanshi' Medical Teachings*), Bi Maoxiang (毕懋襄) and his *Yi Hui* (《医荟》*Medical Treasury*), Zhou Shixian (周士先) and his *Ming Yi Zhai Cui* (《明医摘粹》*Selection of Medical Quintessence in the Ming Dynasty*), Hu Qingyin (胡清隐), Cheng Shiqing (程时卿), Cheng Changyu (程长裕), Cheng Jingtong (程敬通), as well as Wangang (汪昂) and his *Su Wen Ling Shu Lei Zuan Yue Zhu* (《素问灵枢类纂约注》*Classified Compilation and Concise Annotation of Lingshu and Suwen*), *Ben Cao Bei Yao* (《本草备要》 *Complete Essentials of Materia Medica*). This is known to be the earliest retrospective documentation on Xin'an physicians and their medical books.

In Wang Yi's foreword of *Yi Xue Xin Wu* (《医学心悟》 *Medical Enlightenment*), the Xin'an physicians and their medical books were recorded systematically and held in esteem. Some scholars hold that Wang Yi is the first one to study Xin'an medicine. However, many physicians and their medical books or achievements recorded in this foreword were unknown today or lost in the river of history.

In the foreword of *Liao Fu Ji* (《聊复集》 *Collection of Wang Bichang's Medical Books*), Wang Ziwan (汪滋畹) said, "Most of the Xin'an people are well familiar with medicine and capable of treating diseases. They are not only proficient in medicine, but also strict about their behaviors." Gao Xuewen, a celebrity who studied in Hubei province, had a foot disorder for 3 years which many physicians were unable to treat. Wang Chunbu (汪春溥), a famous Xin'an physician, treated him for more than a month, and the disease was cured. Hence, Gao Xuewen wrote in the foreword of *Shang Han Jing Xi Yi Zheng Wu* (《伤寒经晰疑正误》 *Clarification and Correction of Treatise on Cold Damage*), "I have travelled many places over the last 20 years such as Jiangsu, Zhejiang, Fujian, and Guangdong, and I often heard that Xin'an is a place renowned for numerous great physicians." Jiangsu, Zhejiang, Fujian, and Guangdong were generally regarded as medically advanced areas in the Song, Yuan, Ming and Qing dynasties. The fact that Xin'an medicine is highly praised by people in these areas demonstrated that Xin'an medicine has been well known and highly esteemed in China since the Qing dynasty.

## The Foundation-laying Study of Xin'an Medicine in the 20th Century

In the 20th Century, the review and study of Xin'an medicine began in a real sense.

In 1930, the medical community of She County (歙县) established the Shexian Branch of General Medical Council and created the *Shexian Journal of Medicine* (《歙县医药杂志》) to oppose the draft of "Abolition of Traditional Chinese Medicine" proposed by the Kuomintang Government. The journal mainly published some Xin'an medical works popular among the people, such as *Yu Shi Yi Yan Lu* (《余氏医验录》 *Yu's Effective Medical Cases*) and *Wu Liao Shan Guan Yi Cui* (《乌聊山馆医粹》 *Yu Fushan' s Medical Quintessence*).

In 1932, a journal named [Figure 2] *Huizhou Daily* (《 徽州日报 》) was founded. In 1936, it set up a supplement named *Xin'an Medicine Semimonthly* (《 新安医药半月刊 》) which was edited by Cheng Liuru (程六如） and Bi Chengyi (毕成一). It covered seven regular columns, i.e., local medical conditions, works of medical predecessors, biographies of renowned Xin'an physicians, medical research, clinical notes, folk remedies and recipes, and medical questions and answers. The articles, written by Huizhou medical celebrities, were mostly about medical prevention, hygiene and epidemic prevention. Occasionally, there were some introductions to the medical experience of Xin'an medical predecessors. It served as a supplement to *Huizhou Daily* and published at home and abroad. From December 1936 to September 1937, it released 19 issues in total. For 5 consecutive issues, it published the biographies of renowned Xin'an physicians and introduced 29 famous Xin'an physicians in the Ming dynasty.

1946, *Huizhou Daily* set up a column named *Xin'an Medicine* (《 新安医药 》) which was edited by Huang Congzhou (黄从周), the 24th generation descendant of Huang's Gynecology. The content was changed from scientific popularization to academic research. However, there were no researches or analyses in terms of the Huizhou culture, geography, society, politics, and economics. An issue was released every 10 days, and there were 40 issues in total.

In the 1950s and 1960s, scholars began to study the prestigious Xin'an physicians represented by Wang Ji (汪机), Cheng Guopeng (程国彭), Ye Gui (叶桂), and Wang Zhongqi (王仲奇) as well as the Xin'an medical classics such as *Ming Yi Lei An* (《 名医类案 》 *Classified Case Records of Celebrated Physicians*), *Yi Xue Xin Wu* (《 医学心悟 》 *Medical Enlightenment*) and *Lin Zheng Yi An Zhi Nan* (《临证指南医案 》 *Guide to Clinical Practice with Medical Records*). There were some scattered reports and discussions in the journals. In the late 1950s, Professor Gao Ruhe (高如鹤) in Anhui College of Traditional Chinese Medicine conducted textual researches on renowned Xin'an physicians from the perspective of medical history. In September 1963, the Anhui Branch of China Association of Chinese Medicine was established. At the inauguration ceremony, professor


**Figure 2:** *The Shexian Journal of Medicine* (《歙县医药杂志》) in 1932 and *the Xin'an Medicine Semimonthly* (《 新安医药半月刊 》) of *Huizhou Daily* (《 徽州日报 》) in 1946

Cui Jiaoru (崔皎如) in Anhui College of Traditional Chinese Medicine, presented his paper entitled " *Characteristics of Xin'an Medical School*" (《新安医学派的特点简介》) and elaborated on the formation, origin, influence, achievements, and characteristics of Xin'an Medical School.

In 1978, on the initiative of Wang Renzhi [Figure 3] (who was then the deputy director of the Department of Health of Anhui Province), the Shexian Health Bureau established the "Research Team of Xin'an Medical History", aiming to collect the scattered Xin'an medical literatures. They compiled the *Xin An Ming Yi Zhu Zuo Shu Mu* (《新安名医著作书目》 *Bibliography of Xin'an Medical Classics*) which collected 218 books and recorded 275 renowned physicians. They also carried out a series of activities to exhibit the achievements

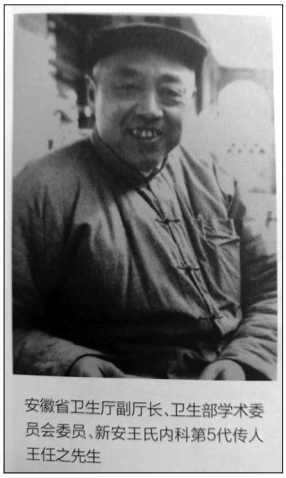


**Figure 3:** Wang Renzhi (王任之), deputy director of the Department of Health of Anhui Province, member of the Academic Committee of the Ministry of Public Health, and the fifth generation of successor to Xin'an WANGs' Internal Medicine

of Xin'an medicine. 1978, Hong Fangdu complied the *Xin An Yi Xue Shi Lue* (《 新安医学史略 》 *A Brief History of Xin'an Medicine*) and introduced the Xin'an physicians and medical books for the first time, thus filling in the gaps in the history of traditional Chinese medicine. From then on, the study on Xin'an medicine was officially initiated.

In 1978, the Anhui College of Traditional Chinese Medicine matriculated the first postgraduate who focused on the study of Xin'an medicine. In 1981, it had the right to grant master's degrees. In the 1980s, the Research Office of Xin'an Medicine was set up in Anhui College of Traditional Chinese Medicine, and then the Southern Anhui Medical College followed up. Since then, the cultivation of Xinan medical talents has been on track.

From 1978 to 1985, there were more than 20 academic papers published, and some of them exerted significant influences. For examples, 1978, Yu Yingao (余瀛鳌)[2] published the "*Medical Contributions of Prestigious Physicians in Shexian County in the Ming and Qing Dynasties*" (《明清歙县名医在医学上的贡献》), which promoted the study of Xin'an medicine; in 1979, Huang Zhongmin (黄忠民)[3] published the "*Contributions of Xin'an Medicine to the Treatment of Warm Diseases*" (《浅谈"新安医学"对温病的贡献》), which reviewed the theoretical knowledge and practice of Xin'an physicians in the treatment of Warm Diseases; in 1980, Wu Jinhong (吴锦洪)[4] published the " *Humble Opinion on Xin'an Medical Schools*" (《 新安医学流派刍议 》), which ingeniously divided the Xin'an physicians into five schools; in 1985, Xiang Changsheng (项长生) published the "*Contributions of Xin'an Physicians to Traditional Chinese Medicine and Their Status in Chinese Medical History*" (《新安医家对中医学的贡献及其在中国医学史上的地位 》), which systematically introduced the medical achievements and historical status of Xin'an physicians.

In June 1985, the Department of Health of Anhui Province put forth the provincial medical development strategy of "Northern Huatuo and Southern Xin'an;" in August, the minister of the Ministry of Health, Cui Yueli (崔月犁), wrote an inscription: " *Xin'an medicine will shine forever*" (新安医学，永放光芒). In December, 101 representatives gathered in Tunxi (屯溪) to attend the Inaugural Meeting of Xin'an Medicine Research Society and the First Session of Academic Seminar. They discussed a wide range of topics covering medical history, Materia Medica, gynecology, laryngology, ophthalmology, exogenous febrile disease (cold damage), acupuncture and moxibustion, sphygmology, and nursing. There were 46 papers collected in the Document Assembly of Inaugural Meeting of Xin'an Medicine Research Society and the First Academic Seminar. In 1986, the Xin'an Medicine Research Institute was set up in Huizhou which was later changed into Huangshan Xin'an Medicine Research Center. In 1987, Hu Ximing (胡熙明), vice-minister of the Ministry of Health and director of the State Administration of Traditional Chinese Medicine, wrote an inscription " To inherit and promote the glorious traditions of Xin'an medicine." He also wrote a similar inscription in 1990. Afterward, the study of Xin'an medicine began to blossom.

In the mid-1980s, the administration departments and TCM institutes in different areas of Huizhou began to explore and research Xin'an medicine. Under such circumstances, different journals were created, such as *She Xian Zhong Yi* (《 歙县中医 》 *Shexian Journal of Traditional Chinese Medicine*), *Xiu Ning Zhong Yi* (《 休宁中医 》 *Xiuning Journal of Traditional Chinese Medicine*), *Shi Shan Yi Yuan* (《 石山医苑 》 *Shishan Journal of Traditional Chinese Medicine*), *Qian Shan Xing Lin* (《 黔山杏林 》 *Qianshan Journal of Traditional Chinese Medicine*), *Tun Xi Zhong Yi* (《 屯溪中医 》 *Tunxi Journal of Traditional Chinese Medicine*), *Huang Shan Zhong Yi Yao* (《 黄山中医药 》 *Huangshan Journal of Traditional Chinese Medicine*), and *Xin An Yi Yao Bao* (《 新安医药报 》 *Xin'an Journal of Traditional Chinese Medicine*). To promote Xin'an medical communication and research, new columns were set up in the *An Hui Zhong Yi Xue Yuan Xue Bao* (《 安徽中医学院学报 》*Journal of Anhui College of Chinese Medicine*), *An Hui Wei Sheng Zhi Tong Xun* (《 安徽卫生志通讯 》 *Anhui Journal of Health Records and Communications*) and *Hui Zhou Yi Xue* (《 徽州医学 》*Huizhou Medicine*) [Figure 4].

The last 15 years of the 20th century witnessed a series of fruitful achievements in the study of Xin'an medicine. Many of them were included in the research projects of Provincial Scientific Commission or Provincial Educational Commission. Li Jiren (李济仁) complied and published *Xing Xuan Yi An Bing An* (《 杏轩医案并按 》*Xingxuan' Medical Cases with Comments*) in 1986, *Xin An Ming Yi Kao* (《 新安名医考 》 *Investigation into Xin'an Prestigious Physicians*) in 1990, and *Da Yi Jing Yao: Xin An Yi Xue Yan Jiu* (《 大医精要—新安医学研究 》 *Essentials of Great Physicians: Study of Xin'an Medicine*) in 1999. Bian Yulin (边玉麟)


**Figure 4:** The Journals of Xin'an medicine compiled and printed in Huizhou in the 1980s and 1990s

and Xia Xuezhuan (夏学传) compiled and published *Yi Li* (《 医理 》*Medical Principles and Theories*) in 1987. Wang Letao complied and published *Xu Yi Shu* (《 续医述 》 *Supplement to Medical Narration*) in 1993 and *Xin An Yi Ji Kao* (《 新安医籍考 》 *Investigation into Xin'an Medical Books*) in 1998 which recorded 835 medical books and conducted a comprehensive and systematic textual research into Xin'an medical books. Wang Hongyi (王宏毅) and Wang Yunchang (王运长) reviewed and published *Wang Ren Zhi Yi An* (《 王任之医案 》 *Wang Renzhi's Medical Cases*) in 1998. Hong Fangdu (洪芳度) complied and published *Xin An Li Dai Ming Yi Ming Lu* (《 新安历代医家名录 》 *Records of Xin'an Physicians in Each Dynasty*) and *Xin An Hou Ke Hui Cui* (《 新安喉科荟萃》 *Collection of Xin'an Medical Theories and Therapies in Laryngology*) in 1997. Particularly, the Anhui Science and Technology Publishing House organized the editorial committee of *Xin An Yi Ji Cong Kan* (《 新安医籍丛刊 》 *Xin'an Medical Books in Series*) headed by Yu Yingao (余瀛鳌), Wang Letao (王乐匋), Li Jiren(李济仁), and Wu Jinhong (吴锦洪). From 1990 to 1995, 15 volumes were published, covering medical classics, diagnostics, herbal medicine, medical prescriptions, surgery, gynecology, pediatrics, acupuncture, laryngology, medical cases, medical history, and miscellanies. The book series contain more than 10 million words and include 54 medical books [Figure 5].

At this stage, a lot of unpublished medical books were discovered. Among them, 15 types were edited, printed, and collected, especially in the Xin'an Medical Research Institute (Center). Moreover, there were 16 types of Xin'an medical books published by other provinces such as *Ming Qing Ming Yi Quan Shu Da Cheng* (《 明清名医全书大成 》 *Complete Compendium of Prestigious Physicians in the Ming and Qing*

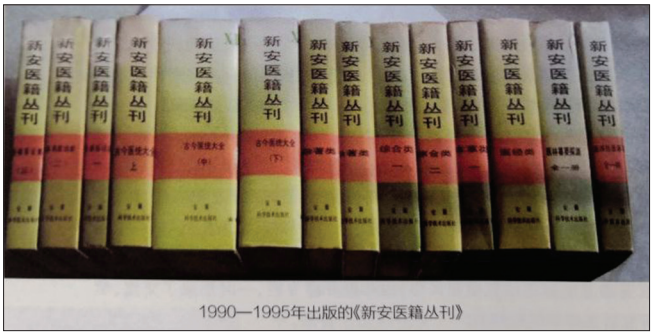


**Figure 5:** *The Xin An Yi Ji Cong Kan* (《 新安医籍丛刊 》 *Xin'an Medical Books in Series*) published in 1990–1995

*Dynasties*) published by China Press of Traditional Chinese Medicine in 1999, which also contributed significantly to the literature research of Xin'an medicine.

These achievements in literature research, as well as the discovery of new literatures, laid a foundation for the study of Xin'an medicine.

The research papers were also published constantly. According to incomplete statistics, there were more than 300 papers on Xin'an medicine published from 1986 to 2000, covering genetic analysis, historical status, textual research on medical books, physicians from a family for generations, medical schools, academic thoughts, innovations, medical classics, medical cases and notes, therapies, prescriptions, academic organizations, Huizhou merchants, Huizhou culture, Huizhou book printing, international communication, extraterritorial influence, and modern Xin'an physicians. All of these usher in a new round of research climax in the 21st century.

When the medical civilization is salvaged and the dust of history is brushed off, a brilliant, fruitful, and distinctive medical school, Xin'an medicine, appears gradually before us.

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### Conflicts of interest
There are no conflicts of interest.

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Review Article

# The Importance of the Classics in the Transmission of Chinese Medicine to the West

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## Abstract

This paper discusses the role of the classical texts (Neijing and Nanjing) in the transmission of Chinese medicine – in particular acupuncture – to the West. This is presented in the following sections: A short historical overview of acupuncture practice in the UK; Philosophy of health and nourishing life (Yang sheng 养生); The body as a complex system; Mind-body connections and the future of medicine and the problem of qi (气).

**Keywords:** Chinese medicine, Classical texts, philosophy of medicine, UK

## Historical Background

The study of Chinese medicine was first established in the UK in the early 1970s, when a group of UK medical practitioners attended a series of seminars in London with Jaques Lavier. Three attendees of those seminars went on to establish schools in the UK. The College of Traditional Acupuncture was established by J R Worsley, who created his own style of treatment based on five phase (*wu xing* 五行) correspondence. Van Buren went on to study stems and branches (天干地支) in both Taiwan and Korea, and later established the International College of Oriental Medicine (ICOM). A third college was established for doctors and other health professionals.

My own training began while living in Japan, where, in the early 1970s, acupuncture and herbal medicine were seen as quite separate disciplines, and acupuncture was still strongly influenced by its long history as a profession for the blind. In Japan, palpation skills are therefore very highly developed and have remained the most important part of acupuncture diagnosis and treatment. On my return to the UK in 1978, I enrolled at the ICOM, where I studied for 3 years, and later taught.

As students at that time, we were very aware of the lack of core material in English. The situation was much worse in the UK than in France. Very few text books were available and those that were of dubious origin. At ICOM, there was some attempt to refer to the *Neijing* (《内经》) and an attempt to teach classical philosophy. The only text book available in English was a partial and limited translation of the text by Ilza Veith. In the late 1970s, two books appeared in the West, published by Chinese publishing houses: An Outline of Chinese Medicine, and a year or so later, The Essentials of Traditional Chinese Medicine (TCM) – both of which were used as acupuncture point location text books and the latter as a basis for the understanding of TCM principles.

In the late 1970s and early 1980s, several ex-students of van Buren went to China and began to bring back TCM teachings. The first connections were made between teaching institutions in the UK and China. It is important to note that no training in herbal medicine existed in the UK at the time. Many UK acupuncturists embraced this more structured, more easily transmitted version of Chinese medicine. But, both Worsley and van Buren felt that these teachings were somehow too simplified and lacked the depth of their own work. It was in the early 1980s that the first factionalism began to appear between the old (possibly more classically based) and new (TCM) styles of working.

It was into this milieu that the teachings of French sinologist Claude Larre arrived in the early 1980s. He spoke at an UK acupuncture conference and was in discussion with

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German scholar Manfred Porkert on the nature of *qi* (气). Porkert's scholarship was very welcome at that time, and his books were the first to present classical ideas of *qi* (气), *yin yang* (阴阳), and *wu xing* (五行) in a structured way. He famously translated many of the Chinese medical terms into Latin – further confusing most UK students – and gave *qi* (气) 38 different names and qualities. Claude Larre reminded us that as practitioners we are dealing with human beings, that *qi* (气) is the substance of life, and that although we can dissect it intellectually, in order to treat patients, it must be felt and touched and experienced.

A Jesuit priest, Claude Larre had spent several years in China, Vietnam, and Taiwan – he was a classical Chinese scholar, and his doctorate from the University of Paris was on chapter 7 of the *Huainanzi* (《淮南子》), Jing Shen (精神). He established the Ricci Institute in Paris and devoted some 20 years to the task of creating the Ricci dictionary – a seven volume Chinese/French dictionary, which was at that time the most comprehensive classical dictionary available in any Western language.

With Elisabeth Rochat de la Vallée (sinologist and Chinese medical practitioner) and Western medical doctor Jean Schatz, he began translation and teaching of the classical medical texts of the *Neijing* and later the Nanjing – always informed by his deep understanding of the philosophical texts on which they draw. He taught regularly in the UK until his death in 2001, when Elisabeth Rochat continued the work.

For many of us, confused or bemused by the factionalism that had developed within the UK schools, this introduction to the very practical philosophy of classical Chinese medicine provided a foundation for our practice, teaching, and further study. In 1987, three students of Claude and Elisabeth established Monkey Press publishing to make their teachings more available to an English-speaking audience. This is the work that I have continued.

Since that time, Chinese medicine in the UK has changed considerably – more Western practitioners have studied Chinese, and more translations are available. But, there is still very little scholarship devoted to the Neijing, and most academic work has tended toward the transmission of herbal medicine.

## Importance of the Classical Texts

Although the classical medical texts contain much information on pathology and the treatment of illness, this has also been added to, refined, and maybe improved over the centuries. My interest in the texts is more in their ability to define health and to provide an understanding of the correct functioning of the body and its energetic systems. The texts do not simply provide a method to treat symptoms but a system of medicine which is able to promote and maintain health – a philosophy of health and well-being.

### A philosophy of health

Medicine in the West has lacked a philosophy of health for many decades. Even common sense about health which would have been abundant in our grandparents' lifetimes, has been reduced by a medical system based on drug taking and dependence on machines to tell us whether we are well or sick.

One reason for the popularity of Chinese medicine (and possibly other forms of alternative medicine) in the UK is that it gives the patient a context for their illness. It explains how this condition may have arisen and is able to suggest ways in which the patient may be able to engage with their own healing process.

The early chapters of the Neijing Suwen explain the reasons for health and disease in terms of fluctuations of *yin yang* (阴阳) and the resonances of *wu xing* (五行) and suggest that human beings should model their behavior on the four seasons (*si shi* 四时) to remain in balance with the *qi* (气) of the universe.

"The four seasons of *yin yang* (阴阳) are the end and the beginning of the 10,000 things, the root of death and life. Going against their succession destroys life, going with their succession prevents illness. This is to obtain the way." (*Suwen* chapter 2)

It may seem that these ideas would be foreign and unacceptable to westerners, but they are usually accepted as simple "common sense." Traditional systems of medicine are similar worldwide because they apply observation of nature and observation of the human condition. The system of Greek medicine is in fact very similar in its reference to the seasons, humors, body types, and internal organs – though Chinese medicine is essentially concerned with constant change and transformation (*bian hua* 变化), whereas the Greek system is more interested in material constituents. The traditional Greek system remained central to medicine in Europe until the last century and is still used by some traditional naturopaths and herbalists. As human beings, living on the earth, we share the experience of living in a physical body. Chinese medicine has a special role to play in human health because its traditional medical systems have remained intact over the centuries.

The early chapters of the Neijing Suwen establish the basic principles of health and disease, the laws governing the *zangfu* (脏腑), which allow the practitioner to apply the tools of the medicine with skill and understanding – not simply to follow a prescription. They allow the practitioner to treat each patient in their individual life situation, rather than applying the same treatment to a western disease name, and to teach individual patients to maintain their health and nourish their life so that disease will not recur.

The understanding of the human condition expressed in the classical texts can be felt and understood by all human beings. We have become divorced from our natural "body knowing," and the health crises of the modern western world come directly from this lack of understanding. We need a philosophy of health and well-being that will help to combat unhealthy lifestyles. The teachings of the medical classics can help us to regain that understanding.

## The body as a complex system

Western scientific medicine has little understanding of mind/body relationship, or of the relationship between different parts of the body. The body has been dissected – but never quite reassembled and understood as a working whole. As biomedicine became more highly specialized, it also became more fragmented. This specialist approach has helped to create the many significant breakthroughs of modern medicine, but it has become increasingly difficult to understand the relationships between the different parts.

Some researchers in the UK are discussing what they call "network pathologies" – symptoms which affect the whole body, or the relationship between its parts. Michael Highland, Professor of Health Psychology at Plymouth University, has suggested:

"Complexity theory shows us that the properties of some complex systems – networks in particular – cannot be attributed to individual components but emerge from whole systems. So why shouldn't disease emerge from the body in a similar way? If so, conventional medicine (scientific biomedicine) will never be enough to cure all our ills. And the assumptions of complementary and alternative medicine may not be as unscientific as they seem."

Many of the terms used in modern physics and systems theory reflect the terminology of classical Chinese medicine. The body can be seen as a complex system, which is inherently self-regulating. Classical Chinese medicine provides a way to see the body and mind as a dynamic self-regulating interconnected whole.

The modern life sciences have much in common with the language of Chinese medicine. Ideas of connection, networks, and information patterning are alien to western biomedicine, but fit quite comfortably with systems theory, chaos, and complexity. The new life sciences recognize what they call "web-like patterns of organization" within living systems, which "maintain the integrity of the whole while undergoing continual structural change." Life processes are described as circular rather than linear, the regulation of body temperature, and blood chemistry as "emerging" through the cyclical interrelationships of body systems. They describe "matrixes of messaging material;" mind as immanent within all matter – life as immanently "self-healing."

If we reduce Chinese medicine to a system of formula for disease patterns, we lose its most valuable asset – that of understanding the body – and the body/mind – as a whole.

## Mind/body connections

Western scientific medicine has no language to describe the relationship between mind and body, although as human beings, we all experience their obvious interconnections. Today, western-trained doctors will discuss "stress" as a cause of disease and label certain conditions "psychosomatic" – often when they can find no other cause or cure. But, there is no concept of the way that different emotions may affect the body in different ways. Classical Chinese medicine describes emotion as having a very specific effect on the *qi* (气):

"Elation and anger (*xi nu* 喜怒) injure the *qi* (气).

Cold and heat injure the bodily form."

and also the relationship between the emotions and the five *zang* (五脏):

"Heaven has four seasons (四时) and five phases (五行) for giving life, growth, limit and storage, and to produce cold, heat, dryness, damp and wind.

Human beings have five *zang* (脏), and through transformation, five *qi* (气) which produce elation (喜), anger (怒), sadness (悲), oppression (忧) and fear (恐)."

By attributing to each emotion a specific effect on the qi (气), we begin to understand the ways in which our emotions affect the physical body. This is described in Suwen chapter 39:

"In anger the *qi* rises up

In elation the *qi* becomes loose

In sadness the *qi* disappears

In fear the *qi* descends…

In fright the *qi* is in disorder

In obsessive thought the *qi* is knotted"

怒 则 气 上

喜 则 气 缓

悲 则 气 消

恐 则 气 下

惊 则 气 乱

思 则 气 结

This passage provides an elegant example of the concept of mutual resonance (*gan ying* 感应) – and the way in which the movement of *qi* follows the movement of the five phases and in turn has an effect on the five *zang* (*wu zang* 五脏).

## The future of Chinese medicine in the West and the problem of *qi* (气)

The Chinese medical community within the UK often struggles to define its place in the modern world and is sometimes tempted to discard the more "archaic" elements of its past in an attempt to become more modern and scientific. But perhaps, we should engage more fully with the "strange" and "unexplainable" aspects of Chinese medicine and examine those aspects in the light of the new disciplines in science.

During the time that I lived in Japan, I worked with physicists attempting to understand the nature of *qi* (气). Can it be defined? Can it be measured? What are the meridians (经络)? We imagined that in 20 years' time, we would have more of an understanding of these subtle mechanisms of life.

But instead, we have tended to push those unexplainable aspects of the medicine into the background, while we concentrate on proving that acupuncture is useful in treating back pain.

But what if a scientific investigation into the nature of *qi* (气) could provide insight into the subtle interconnections of the immune system, the nervous system, and the endocrine system? Maybe the very precise descriptions of *qi* flow within the traditional texts could inform emerging disciplines such as psychoneuroimmunology? What if an investigation into the classical insistence on "spirit" (*shen* 神) was able to throw new light on the role of consciousness in healing?

And maybe, new research in embryology will find that there is some residual cellular memory connecting tissues of similar origin as they migrate through the developing fetus that can explain some of the more obscure connections made within both meridian (*jing luo* 经络) and *zangfu* (脏腑) theory. With increasingly subtle tools available for exploration, and the fields of biochemistry and biophysics moving toward more subtle levels of knowledge, maybe we will come closer to understanding the more obscure aspects of our medicine.

It is by looking into the very mechanisms of life that the new sciences of biophysics and biochemistry are returning to a holistic and self-organizing view of the world. And with this return to an understanding of patterns of relationship, and the emergence of self-organizing structures, there is a new reverence toward life.

The language of the Chinese medical classics fits very well with the language of this new science. It is important that we do not discard this information as archaic and out of date. We may find that it will be the source of the medicine of the future.

## Conclusion

Chinese medicine is a wide and all inclusive discipline. My hope is that it flourishes in the West in all its possible diversities. But in the attempt to make this medicine acceptable to a modern scientific community, I hope that we do not lose sight of the deep wisdom and detailed observation contained within the classical texts. It is my belief that the study of these texts is necessary to understand the depths of the medicine and to create a more effective medicine for the future.

### Financial support and sponsorship

Nil.

### Conflicts of interest

There are no conflicts of interest.

Review Article

# Traditional Chinese Medicine in Malaysia: A Brief Historical Overview of the Associations

**Hon Foong Wong[1,2], Shih Chau Ng[1,2], Wen Tien Tan[1], Huiying Wang[1], Xun Lin[1], Si Woei Goh[1], Bao Ling Hoo[1], Chyong En Chai[1], Jun Liu[1]**

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## Abstract

The increasing number of TCM practitioners and herbal suppliers, both of which accelerated by the formation of various TCM institutions, substantiated the creation of regional traditional Chinese medicine (TCM) associations in post-World War II Malaya. In response to the restrictions and levies imposed by the British colonial government, these regional associations united and formed a national organisation now known as the Federation of Chinese Physicians and Medicine Dealers Association of Malaya (FCPMDAM). The current designated TCM practitioner body, the Malaysian Chinese Medical Association (MCMA) were also originally established to nurture local talents in the face of import restrictions. Owing to difference with MCMA, a separate association named the Federation of Chinese Physicians and Acupuncturists Associations of Malaysia (FCPAAM) was setup in 2003 to absorb self-studied and patrimonial-educated TCM practitioners.

**Keywords:** Association, development, history, Malaysia, traditional Chinese medicine

This article is the continuation of a previously published article in issue 1 of the *Chinese Medicine and Culture* 2019. The previous article examined the development of traditional Chinese medicine (TCM) institutions in the Malay Peninsula. Chinese medical halls were the first setup to supply herbs to the Chinese immigrants. As the Chinese communities continued to grow, charitable TCM institutions were then established to provide TCM consultation and treatments. The shift from Chinese medical hall to charitable institution demonstrates that the needs of affordable medical services for the community are met through concerted community efforts. It also marks the beginning of professional TCM services in Malaya.

The following discussion aims to provide a brief overview on the development of TCM associations in the pre-colonial and post-independent Malaysia.

## Associations of Traditional Chinese Medicine

The mushrooming institutions for the practice of TCM incubated the establishment of TCM associations. Back in the 17th–18th century, owing to few TCM practitioners, there was no need for setting up an association. However, the idea of setting up TCM associations came to spring when more TCM practitioners and herbal suppliers set their feet on Malaya at the turn of 19th century. There were various associations established in the British Colonial Malaya. The earliest known TCM association was the Muar Chinese Medicine Institute (麻坡中医研究所) in 1924.[1] Each state and the three Straits Settlements subsequently followed suit in establishing their own TCM regional associations post-World War II. Some of the examples were the Singapore Chinese Medical Society (新加坡中医师公会) which was established in 1946 [Figure 1], but renamed as the Singapore Chinese Physicians' Association in the subsequent year, the Chinese Physicians Association of Perak (霹雳中医师公会) established in 1947, and the Chinese Physicians' Association of Central Malaya (中马中医师公会) established in 1948 (renamed as the Malaysian Chinese Medical Association [MCMA] in 1989).[2,3] These early regional associations were set up mainly with the objectives of forming a support network within local TCM community and propagating TCM.[4] However, they would sometimes

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care for the benefits of their individual members only. This has occasionally resulted in discoordination and even conflict among the associations.[5]

In 1952, the Immigration Ordinance 1952 was imposed by the British Colonial Malaya government to tighten border controls.[6,7] The control restricted the importation of TCM practitioners from China. Further in 1954, the government imposed up to 25% of import excise on Chinese medicine. TCM practitioners in the whole country, including both the then Malaysia and Singapore, believed that not only would it increase the burden of patients but it would also hamper the development of TCM in Malaya. In light of the above issues, the Chinese Medicine Dealers Association of Kuala Lumpur and Selangor (雪隆华人药业公会) invited all regional TCM associations to discuss the above issues. During the meeting an agreement was made to focus on nurturing home-grown TCM practitioners instead of relying on importing TCM practitioners from China. It was also during this inaugural meeting that the idea of a national organization was born. On January 20, 1955, the Federation of Malayan Chinese Medicine (马来亚华人医药总会) was formed.[8] All TCM associations in the British Colonial Malaya were united.

In 1956, after years of lobbying and petitions, the excise duty for all Chinese medicines except ginseng was finally abolished. In 1963, the Federation was renamed as the Federation of Chinese Physicians and Medicine Dealers Association of Malaysia (FCPMDAM, 马来西亚华人医药总会) [Figure 2] in conjunction with the independence of Malaysia. Although Singapore was separated from Malaysia 2 years later, both associations in the two countries would continue to work together for the greater good of the TCM community. These collaborations between Malaysia and Singapore unfortunately came to an end in 1973 when the Registry of Societies Malaysia stipulated that only Malaysian be allowed to join member and form society.[9] Nevertheless, FCPMDAM continued striving to improve and propagate TCM in Malaysia through organizing and collaborating in various academic activities. Some of the examples included establishing the first TCM education institute in 1955, co-organizing the first Malaysia Chinese Medicine Symposium (马来西亚中医药学术研讨会) in 1984 and hosting the 2nd, 5th, 9th and 11th ASEAN Congress of TCM (亚细安中医药学术大会). Currently, there are a total of 43 member associations and more than 1900 member TCM practitioners under the umbrella of FCPMDAM.[8,10]

The MCMA (马来西亚中医总会) was a merger of the Chinese Physicians' Association of Central Malaya and the Selangor Chinese Medicine Association (雪兰莪中国医学会). Back in 1945, a group of TCM practitioners who practiced in the Klang Valley including Liew Pui Yee (廖沛如) and Professor Ngeow Sze Chan (饶师泉教授) realized that it was important to engage with the public in promoting the studies of TCM. Otherwise, TCM would soon be a history of the past. The threat later became real when the immigration restriction on TCM practitioners from China was imposed in 1952. With this in mind, they united and formed the Selangor Chinese Medicine Association. The Chinese Physicians' Association of Central Malaya, however, was formed later in 1948. Its inception was related to a fundraising campaign for floods in Fujian and Guangdong. During the campaign, the concept of having an association to unite all TCM practitioners within the central region of Malaya was well received by the donors and within 1 month, the Chinese Physicians' Association of Central Malaya had its inaugural general meeting. Due to overlapping functions and members in the two associations, members from the Selangor Chinese Medicine Association agreed to merge with the Chinese Physicians' Association of Central Malaya in 1953. To better perform its mission in promoting professional TCM education and practice for the whole Malaysia, the association was renamed as MCMA [Figure 3] in 1988.[11] MCMA hosted the International Conference of World Federation of Acupuncture and Moxibustion Societies in 2006 and had also set up a Historical Museum on Malaysia's TCM Development in 2016.[12] It is currently the designated TCM practitioner body approved by the Ministry of Health.[10]


**Figure 1:** Singapore Chinese Physicians' Association in 1956


**Figure 2:** Logo of the Federation of Chinese Physicians and Medicine Dealers Association of Malaysia


**Figure 3:** Logo of Malaysian Chinese Medical Association

In 2001, owing to disagreement with MCMA on forbidding self-studied and patrimonial-educated practitioners to register as members, a small group of practitioners established a separate association named the Federation of Chinese Physicians and Acupuncturists Associations of Selangor and Kuala Lumpur (雪隆中医师暨针灸联合总会). In 2003, it was renamed as the Federation of Chinese Physicians and Acupuncturists Associations of Malaysia (马来西亚中医师暨针灸联合总会) with its head office located in Kuala Lumpur.[13] Whether the TCM practitioners are formally educated, patrimonial-educated, or self-studied, to date, the majority of them work in the private sector. Some of them continue to work in Chinese medical halls. Some would become contractors for a few companies which offer TCM treatment in their retail chain centers. Some would even become entrepreneurs by opening their own centers. A few TCM graduates work in the recently established Traditional and Complementary Medicine units in public hospitals.

### Financial support and sponsorship
Nil.

### Conflicts of interest
There are no conflicts of interest.

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Review Article

# Essays in the History of Medicine

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## Abstract

Professor Karl Sudhoff had spent most of his career time researching the history of medical development in medieval Europe. The book collects the source fragment of the evidence of Professor Sudhoff's job.

**Keywords:** *Essays in the Histoyr of Medicine*, hygiene, Karl Sudhoff, medical history, medieval Europe

*Essays in the History of Medicine*[1] was written by the German historian of medicine Karl Sudhoff M.D.. The book was translated into English by many people, prefaced by F.H. Garrison M.D., and published in 1926 [Figure 1]. The book was collected by the first curator of Shanghai Museum of TCM, Academician Wang Jimin, in the 30s of last century, as an interesting evidence of the in-depth study of the medical history and culture about Europe before and after the Middle Ages.

Karl Sudhoff was the professor of Medical History at the University of Leipzig during 1895–1924.[2] In his long educational career, he had focused on certain topics, most were about the medieval medical environment in Europe, and he would give a summary of his research on each topic [Figure 2]; therefore, we have this essay book [Figures 3 and 4] today.

According to F.H. Garrison, the Surgeon General of Army Medical Museum and Library of the USA in 1925, who had composed the foreword and biographical sketch for this book, Professor Sudhoff had obtained "massive achievement in the history of medicine, a prodigious lifework which has not been approached in variety, extent and importance by that of any other medical historian of the past or present."

F.H. Garrison M.D., had listed the scientific achievements of investigation of Professor Sudhoff, let's take a look following the order of importance [Figures 5 and 6].

First of all, *Paracelsus Studies*. Before Professor Sudhoff's study, Paracelsus was regarded as a mystic or mountebank in the Middle Ages. Through the deep excavation by Sudhoff, a historical bibliography was published. In the bibliography contents, it enumerates the medical achievement of Paracelsus traced by the year: the treaties on open wounds (1529), on syphilis (1530), on the mineral bath at Pfeffers (1535), etc. The enormous popularity of Paracelsus who was a "people's physician" in a sense never realized before is evidenced by all records in the publications.

Second, *Basil Valentine Hoax*. Before Sudhoff's publication of *Paracelsus* bibliography, Basil Valentine was supposed to be an actual monk of the fifteenth century who was the discoverer of some chemical elements. Sudhoff found that Basil Valentine is a fictional character in the book of the seventeenth century by Johann Tholde.

Third, *Iatromathematicians of 15th and 16th centuries*. This part is quite similar as TCM. Iatromathematicians means the application of astrology to medicine. Throughout the research on Paracelsus who was regarded as the "father of astrological medicine," Sudhoff believed that the Iatromathematicians becomes the strict analog of the iatrochemist of the 16th century.

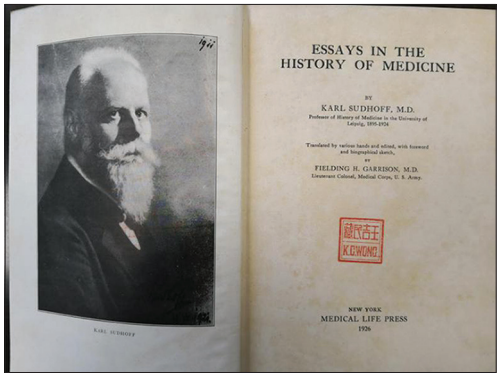


**Figure 1:** Inside front cover of the History of Medicine

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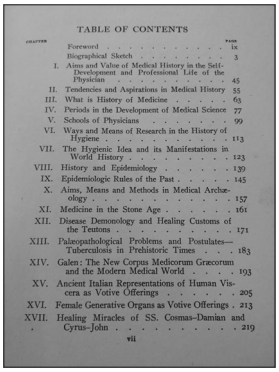
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**Figure 2:** Content of the History of Medicine

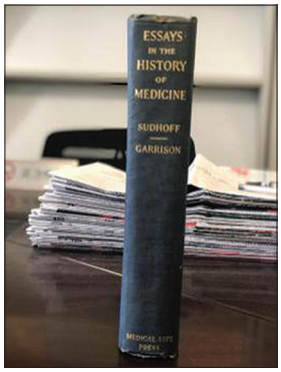


**Figure 3:** Cover of the History of Medicine

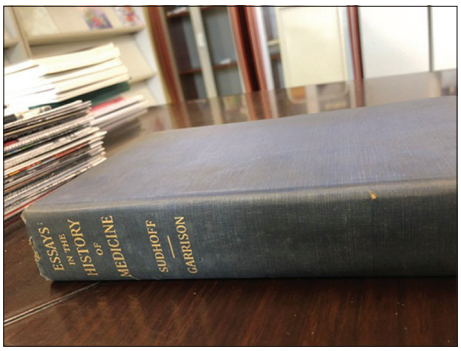


**Figure 4:** Cover


**Figure 5:** Goethe (1832)

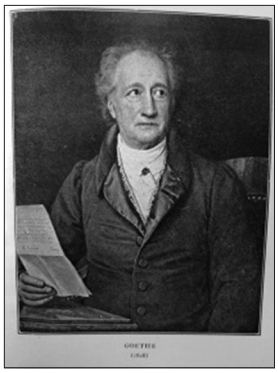


**Figure 6:** Goethe (1828)

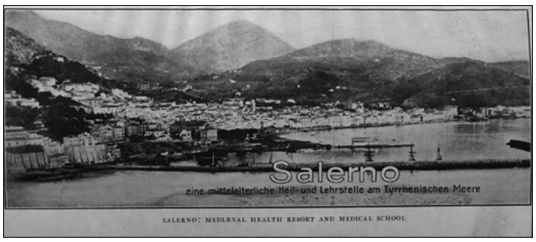


**Figure 7:** Salerno – Medieval health resort and medical school

Fourth, *Study in the anatomy of the Middle Ages.*

Fifth, *Researches in the History of Hygiene*. Comparing the perfunctory histories of hygiene in any modern script with Sudhoff's Dresden Catalogue (1911), you would perceive at once that the history of hygiene and the history of medicine are two entirely different subjects.

Sixth, *German Medical Incunabula*. Sudhoff's academic research and methodology have laid the foundation for the future research in German medical history and built a framework for research methods since him [Figures 3 and 5].

Seventh, *Studies in Alexandrian Medicine.* It is the investigation on the cultural aspects of Greek medicine in Alexandrian period, including the social status of physicians and the ritual of temple.

Sudhoff's studies and researches also involved *Ancient Balneology (the custom of bath); Manuscript of pest examination; Early History of Syphilis; Medical School in Salerno of Middle Age* [Figure 7]; and *History of Dentistry and other minor contribution.*

Let's go through the directory, to find out the hard achievement of the respective medical historian.


## Financial support and sponsorship

Nil.


## Conflicts of interest

There are no conflicts of interest.

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Review Article

# The Establishment and Spread of Acupuncture Model Based on Different Cultures

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## Abstract

The Belt and Road (B and R) brings a historic opportunity for the Chinese medicine culture communication, especially the traditional acupuncture. The high rate of acupuncture cognitive barriers is one of the important factors among patients and service providers in "B and R" countries. The proposed project, to be conducted in "B and R" countries, has the following primary aims: (1) to assess acupuncture knowledge, attitudes, and perceptions; (2) to assess acupuncture knowledge, attitudes, and perceptions among clinic staff; and (3) to adapt, develop, and deliver acupuncture education programs for patients and clinic staff. The secondary aims are as follows: (4) to explore the barriers that impact acupuncture receiving intervention and medical service and (5) to explore ways to help service providers to provide acupuncture services to patients in acupuncture clinics based on different cultures. Through an iterative process of discussion and revision, we plan to develop a comprehensive acupuncture intervention program that is appropriate for the "B and R" countries setting and that can be tested for its effectiveness in a series of controlled trials in future research.

**Keywords:** Acupuncture, Chinese medicine, culture communication, the Belt and Road

## Introduction

The Belt and Road (一带一路)[1] Initiative focuses on bringing together China, Central Asia, Russia, and Europe (the Baltic); linking China with the Persian Gulf and the Mediterranean Sea through Central Asia and West Asia; and connecting China with Southeast Asia, South Asia, and the Indian Ocean [Figure 1]. The construction of "B and R" brings a historic opportunity for the Chinese medicine culture communication, especially the traditional acupuncture.[2] Owing to the different cultures and races, traditional Chinese acupuncture is facing enormous barriers to establishment and dissemination in "B and R" countries.[3,4] Disparities in acupuncture treatment across ethnic and class categories are widely documented and this represents an urgent problem for spread of acupuncture.[5] Causal explanations for disparities in acupuncture intervention, however, are still debated, especially with respect to the relative effects of class, culture, and gender, which affect the treatment of acupuncture.[6] This difference also hinders the depth and breadth of acupuncture spread in the "B and R."

Despite the great high demand on acupuncture treatment among patients and service providers in "B and R" countries, limited acupuncture intervention/prevention strategies are available in these countries [Figure 2]. The high rate of acupuncture cognitive barriers is one of important factors among patients and service providers in "B and R" countries. In fact, Chinese acupuncture clinics can provide an efficient platform to address issues among patients.[7] However, to our knowledge, not much study was conducted on the knowledge, attitudes, and perceptions of acupuncture among both patients and service providers in "B and R" countries.[8,9] Many materials regarding acupuncture model have been developed in China, but research efforts are needed to integrate and adapt to different culture in other countries' settings and to empirically test the educational program to ensure that it is effective to increase knowledge services among patients in "B and R" countries.[2,10,11]

For the establishment of acupuncture model, we first propose to investigate acupuncture knowledge, attitudes, and perceptions

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among patients and service providers in acupuncture clinics and further explore the barriers that impact acupuncture services and medical care. The proposed project, to be conducted in "B and R" countries, has the following primary aims: (1) to assess acupuncture knowledge, attitudes, and perceptions among patients; (2) to assess acupuncture knowledge, attitudes, and perceptions among clinic staff; and (3) to adapt, develop, and deliver acupuncture education programs for patients and clinic staff. The secondary aims are as follows: (4) to explore the barriers that impact acupuncture receiving intervention and medical service and (5) to explore ways to help service providers to provide acupuncture services to patients in acupuncture clinics based on different cultures. The program to be developed and the data collected in the proposed study will establish a basis for developing recommendations of a comprehensive acupuncture intervention program based on different cultures in order to be tested in future clinical trial. If proven effective, the intervention program can be widely used in "B and R" countries to reduce acupuncture cognitive barriers. Only overcoming these barriers acupuncture can spread more widely in "B and R" countries.

## Relevance

The study is unique and important because the establishment and spread of acupuncture model based on the culture in the background of "the B and R" acupuncture cognition are major problems, especially among the "B and R" countries, but there are few people who know about acupuncture, including acupuncture knowledge level and current barriers and intervention strategies for acupuncture among patients and staff in "B and R" countries. If related consequences cannot be controlled efficiently, it will result in much greater spreading obstacles for acupuncture.[12] This study will help the readers to understand and address this important problem in "B and R" countries [Figure 3].

### Specific aims

Our program is devoted to solving the problem of acupuncture cognitive barriers in "B and R" countries. Through the investigation of acupuncture knowledge, attitude and awareness can develop appropriate solutions for different ethnic group patients and staffs. It will help for breaking the barriers of acupuncture cognitive in different races in "B and R" countries. Only overcoming these barriers acupuncture can spread more widely in "B and R" countries. Hence, we have to do the following:

#### *Primary aims*

- Aim 1: To assess acupuncture knowledge, attitudes, and perceptions among patients
- Aim 2: To assess acupuncture knowledge, attitudes, and perceptions among staff in acupuncture clinics.

Based on knowledge accumulated from studies 1 and 2, we will adopt and develop acupuncture educational programs appropriate for "B and R" countries' patients and service providers.


**Figure 1:** The 21st Century Maritime Silk Road（21世纪海上丝绸之路）

**Figure 2:** The acupuncture of different races

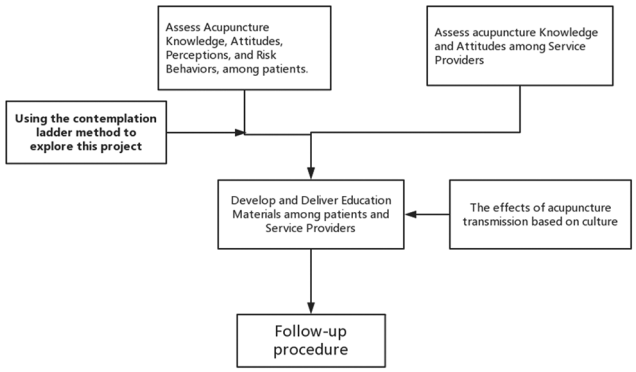


**Figure 3:** Mind map

- Aim 3: To adapt, develop, and deliver acupuncture education programs for clients and clinic staff and to assess acupuncture education outcome among the clients.

#### *Secondary aims*

- Aim 4: To study the barriers that impact acupuncture intervention and medical service
- Aim 5: To explore ways to help clinic staff to provide acupuncture services to patients.

## Innovations

Awareness of the impact of acupuncture raised in China, but in "B and R" countries, people know little about the importance of acupuncture. To our knowledge, this is the first comprehensive research which will use multiple instruments to measure acupuncture knowledge and behavior change in patients of different races who present in acupuncture clinic, as well as the acupuncture knowledge of acupuncture clinic staff. This is also the first trial which will test the effect of educational intervention. Acupuncture knowledge has had a science education among different races. However, for acupuncture education, this is the first time to collect "B and R-" related data and to develop acupuncture comprehensive intervention program. Based on this proposed study, some suggestion about promising directions for future research will be provided.

In addition, we use the contemplation ladder method to explore. This is an adapted version of the contemplation ladder.[13] It is a visual analog comprising 10 rungs and 5 anchor statements, representing stages of change. The instructions for the contemplation ladder are as follows: each rung on this ladder represents where a person might be in thinking about changing their risk behaviors and asking for acupuncture care. Select the number that best matches where you are now. Then, select the stage of change where you are. We can use this method to better understand the different acupuncture disorders in different races. To guide the proposed study, we intend to form a community advisory board (CAB) and an international expert panel (details please refer to 4).

In "B and R" countries, there were no empirical data related to acupuncture cognition barriers although it is a very critical public issue. The proposed research will add significantly to the acupuncture cognition among "B and R" countries, with potential implications for "B and R" countries' policies.

## Research Design and Methods

We propose to conduct three inter-related studies using both qualitative and quantitative research methods to address a series of research questions. First, we will begin by assessing acupuncture knowledge, attitudes, and perceptions, among acupuncture clinic in "B and R" countries (Study 1) and acupuncture knowledge, attitudes, and acupuncture services among acupuncture clinic staff (Study 2). Second, based on knowledge accumulated from Studies 1and 2, we will adapt and develop acupuncture education materials appropriate for "B and R" countries and acupuncture treatment service providers and then use the transtheoretical model of behavior change as a conceptual model to measure if our educational program will increase patients' readiness to consider getting acupuncture cognitive for patients (Study 3). Finally, by integrating findings of these three studies and by consulting with leading experts in acupuncture, we plan to develop acupuncture education program applicable in "B and R" countries, which can be tested in future formal experimental trials.

To guide the proposed study, we first plan to form a CAB[14] and an international expert panel. The CAB will consist of local experts: political leader, community leader, acupuncture providers, patients, a physician in a general hospital, and acupuncture physicians in acupuncture clinics. The CAB will provide guidance in the development of the education materials and provide feedback when the educational material is developed. The CAB will discuss the feasibility of the educational program and assure that the key issues related to acupuncture education are taken into consideration in the educational program. The CAB will also advise strategies for wider dissemination/implementation of the educational materials in acupuncture treatment settings or other related settings. An international expert panel will be established to guide the development of acupuncture educational program and intervention strategies that are evidence based. They will review and comment on educational materials as they are developed.

### Study 1 – Assess acupuncture knowledge, attitudes, perceptions, and risk behaviors, among patients

#### *Research questions*

1. What is the level of acupuncture knowledge, attitudes, and perceptions among patients in acupuncture clinics in "B and R" countries?
2. Are there differences in acupuncture knowledge and attitudes among different ethnic groups?
3. What are the barriers for patients to access acupuncture services?
4. Are there differences in patients' knowledge and in their awareness and actual use of acupuncture services?

#### *Study design*

To address these research questions, we will conduct focus groups, review medical records, and survey patients in acupuncture clinics in "B and R" countries. Patients will be recruited from four clinics, and criteria for selecting acupuncture clinics are as follows:

1. A minimum of 40 patients in the clinic
2. Adequate space to accommodate research assistants and study protocol procedures including focus group discussions
3. Able to provide complete data on individual patients regarding attendance and other laboratory test results, which will be shared upon patients' consent.

#### *Participants*

A total of 150 patients will be surveyed in this study. All patients in the acupuncture clinics will be invited to participate in the research. One hundred and twenty participants will be required to estimate a 95% confidence interval with a total width of 0.5 point. Hence, we propose to enlarge the sample to 150 to ensure reasonable power.

#### *Instruments*

- The Medical Outcomes Study 36-item short-form health survey:[15] A 36-item short-form health survey (SF-36)

profile was developed in 1988 Medical Outcomes Study, on the basis of health research and development and to Boston by the United States
- Attitude scale of acupuncture: Attitude scale of acupuncture, psychometrics test scale of quality, and the general attitude test scale of acupuncture of patients
- Acupuncture knowledge: We will produce a survey on acupuncture knowledge
- Acupuncture cognitive barriers: We will ask some questions to test different racial perceptions of acupuncture
- Organizational Culture Assessment Instrument:[16] It is taught by Prof. Robert E. Quinn of the University of Michigan Business School and Professor Kim S. Cameron, in the long-term research organization culture, based on the development of the measurement of organizational culture scale.

### *Study procedures*
#### Recruitment
Based on the information from the pilot study, 70% of patients were male and 30% were female. At each selected clinic, the study will be explained to potential participants during the recruitment process. For those who decide to participate in this study, detailed informed consent procedures will outline the nature of participation, risks and benefits, and the schedule for data collection and compensation. Individuals will be reminded that they are free to decline or stop participation at any time.

#### Survey procedure
Individual and face-to-face interviews will be performed in a private room in the program. Audio Computer-Assisted Self-Interview (ACASI)[17-19] will be used to conduct the part of the interview dealing with sensitive questions such as sexual behavior. With ACASI, using headphones, respondents listen as the survey questions that appear on a computer monitor are read to them, and patients respond to these questions using a touchscreen monitor. Before responding to the survey, one of research staff will work with the patients individually using a variety of practice questions and help them become familiar with the use of ACASI. The research staff will remain nearby to answer any questions or deal with any problems in completing the instruments. All components of the interview will take a total of 0.5 h. We have successfully used this procedure in our previous studies.

### *Planned analysis*
Establishment of the database, data entry, and data management.
- Preliminary analysis: Frequencies will be run and examined for evidence of sparseness for categorical data and for nonnormality (using plots, examination of skewness, kurtosis, etc.) for continuous variables
- Quantitative data analysis: These descriptive statistics may include means and standard deviations for continuous variables and frequencies or percentages for categorical variables
- Qualitative data analysis: A flexible data analytical software package, the Analysis of Free Text for Ethnographic Research,[20] will be used for analysis of interview data.

## Study 2 – Assess acupuncture knowledge and attitudes among service providers
### *Research questions*
1. What is the level of acupuncture knowledge, attitudes, and self-efficacy among acupuncture clinic staff?
2. What kind of acupuncture services do they provide for patients?
3. What is the relationship between their knowledge and their acupuncture-related services and practices?
4. What are the barriers that prevent them from offering acupuncture care, and what can facilitate providers implementing acupuncture services?.

### *Study design*
This study includes both quantitative and qualitative questionnaires to assess acupuncture knowledge, attitudes, self-efficacy, and current barriers and to explore the relationship between knowledge and practice among service providers.

### *Participants*
About 70 acupuncture clinic staff will complete the acupuncture knowledge and attitude survey.

### Instruments (refer to Instruments)
### *Study procedures*
#### Recruitment
All acupuncture clinic staff have M. D. degrees. The questionnaire will be handed out to all staff during a routine meeting at each site.

#### Survey procedure
After obtained informed consent, participants will be asked to respond to questions about their acupuncture knowledge, attitudes, and acupuncture management practices; total survey time will be 0.5 h.

#### Focus group procedure
Same as described above for Study 1.

### *Planned analysis*
#### Quantitative data analysis
Descriptive statistical methods will be utilized to describe the measures of acupuncture knowledge, attitude, self-efficacy, and barriers (Research Questions 1 and 2). These descriptive statistics will include means and standard deviations for continuous variables and frequencies or percentages for categorical variables. Bivariate analysis will be conducted to examine relationships among acupuncture knowledge, attitude, perception, and acupuncture services and practices (Research Question 3), and regression analysis (logistic regression for categorical outcomes and multiple regression for continuous outcomes) will be conducted to assess the association of acupuncture knowledge, attitude, and perception with acupuncture management practices. Qualitative data analysis (Research Question 4) has been described above (refer to planned analysis).

### Study 3 – Develop and deliver education materials among patients and service providers

Based on knowledge accumulated from Studies 1 and 2, we will adopt and develop acupuncture educational material appropriate for "B and R" countries' patients and service providers. Study 3 will focus the following questions:

1. Does the education program increase knowledge among acupuncture clinic staff?
2. Does the education program improve knowledge and decrease acupuncture cognitive barriers among patients?
3. Are acupuncture cognitive barriers reduced in association with increased acupuncture knowledge level among patients?

#### *Study design*

This study will include a developmental phase and an intervention phase. The developmental phase has the goal of developing educational materials for patients and service providers [Figure 4]. Input from focus groups, the CAB members, expert panel members, a physician will be solicited, incorporated, and integrated. Educational material will be delivered to acupuncture clinic staff via lectures. For patients, the education material will be given via eight 2-h sessions over 4 weeks.

### Developmental phase

Our preliminary plan is to include the following contents in our education programs (owing to the limited page, we did not explain training materials in detail).

1. Acupuncture development background: We will introduce the history of acupuncture and the impact of patients
2. Acupuncture knowledge
3. Acupuncture treatment and how to deal with the disease
4. Acupuncture tool.

## Summary

We will summarize the former topics and encourage patients to discuss what they have learned and address questions they have.

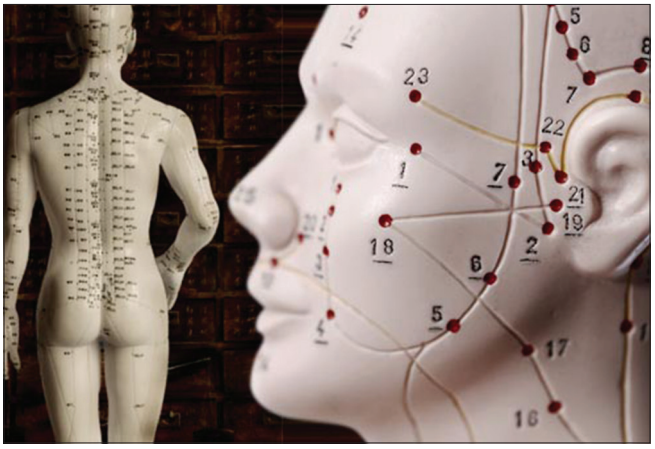


**Figure 4:** The teaching model of human acupoints

### Intervention phase

#### *Education for service providers*

The training will be conducted in two half-day sessions on 2 consecutive days. The contents will be divided into individual modules based on a training manual.

#### *Education for patients*

A total of 160 patients were randomly selected from four clinics in different countries and divided into four groups. All participants will be given a twice weekly education session over 4 weeks based on intervention manual. We will use a variety of learning techniques, including lecture, brainstorming, small and large group activity, individual worksheets, role play, and video player. Each session will last 2 h. The 1st h will be used to deliver education, and the 2nd h will include discussion and testing via questionnaire survey. Patients will be encouraged to discuss issues related to each session's topic. The posttraining test will be conducted to evaluate the educational outcome.

### Finalize education material

The CAB will review the intervention materials and provide guidance and suggestions to refine these materials after the intervention phase. The research staff will modify the drafts and then present it at the CAB meeting. This process will continue if the intervention materials are satisfactory.

### Data collection instrument and measures

The acupuncture contemplation ladder which used to assess patients' readiness to consider getting acupuncture has been described above (refer to 3).

Other instruments to be administered at baseline and follow-up are described in previous section.

### Developing recommendations for a comprehensive acupuncture intervention program in "Belt and Road" countries

Through an iterative process of discussion and revision, we plan to develop a comprehensive acupuncture intervention program that is appropriate for the "B and R" countries setting and that can be tested for its effectiveness in a series of controlled trials in future research.

### Financial support and sponsorship

This study was financially supported by the National Natural Science Foundation of China Project(NSFC:81873379).

### Conflicts of interest

There are no conflicts of interest.

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Research Article

# A Review on *Ben Cao Gang Mu Ying Jiao Dui Zhao* (《本草纲目影校对照》 *A Contrast between the Photocopy and Collation of Compendium of Materia Medica*)

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## Abstract

*Ben Cao Gang Mu Ying Jiao Dui Zhao* (《本草纲目影校对照》 *A Contrast between the Photocopy and Collation of Compendium of Materia Medica*), completed by Zhang Zhibin and Zheng Jinsheng, is the latest variorum on *Ben Cao Gang Mu* (《本草纲目》 *Compendium of Materia Medica*). Adopting five different Jinling editions as the master copy, the book carefully collates the complex contents on the original book by contrasting the photocopies with the supplement and correction, which makes it easy to use. What is more, full-form punctuation is used to mark the reference books and proper nouns, which is a big success feat in the research history of *Ben Cao Gang Mu*.

**Keywords:** *Ben Cao Gang Mu* (《本草纲目》*Compendium of Materia Medica*), *Ben Cao Gang Mu Ying Jiao Dui Zhao* (《本草纲目影校对照》*Contrast between the Photocopy and Collation of Compendium of Materia Medica*), Book review

## Introduction

In 2018, in the 500th birth anniversary of the famous ancient physician and herbal pharmacist – Li Shizhen(李时珍), various commemorative activities were held. During this event, Zhang Zhibin(张志斌) and Zheng Jinsheng (郑金生), two professors, jointly contributed their great accomplishment – *Ben Cao Gang Mu Ying Jiao Dui Zhao* (《本草纲目影校对照》*A Contrast between the Photocopy and Collation of Compendium of Materia Medica*) [Figure 1].

*Ben Cao Gang Mu* (《本草纲目》*Compendium of Materia Medica*), which took Li Shizhen about 30 years to accomplish, was called "the encyclopedia of 1596" by English biologist Charles Darwin (查尔斯·达尔文). Doctor Joseph Needham（李约瑟）, author of *Science and Civilizations in China*（《中国科学技术史》）, said: "there is no doubt that the *Ben Cao Gang Mu* is the greatest scientific achievement of Ming Dynasty and the acme of the materia medica… Shizhen Li is a scientist reaching high achievement among the people insulated from from Galileo（伽利略） and Vesalius（维萨里） science movement." "Till now, this great work is still an inexhaustible source of knowledge for the study of the Chinese history of chemical and other sciences."[1] Ben Cao Gang Mu was added into the *Di Yi Pi Guo Jia Zhen Gui Gu Ji Ming Lu* (《第一批国家珍贵古籍名录》*1st Edition of National Collection of Ancient Document Catalogue*) in 2008 and added into the *Shi Jie Ji Yi Ming Lu* (《世界记忆名录》*Memory of the World Register*) in 2011. Unfortunately, such a great scientific masterpiece does not have an ideal edition that can pass down over the years.

The first edition of *Ben Cao Gang Mu*, the *Jinling* edition（金陵版）, was designed by Li's descendants and printed by Nanjing bookseller Hu Chenglong(胡承龙). It is the most precious edition of the book because it is mostly in line with Li's original work. But the existing quantity of the book is very small. There exists only nine copies in total, six of which

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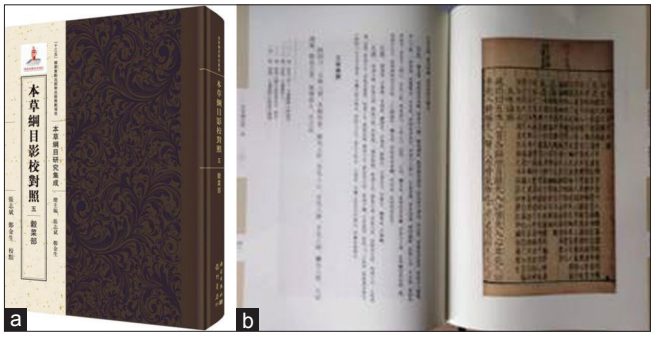


**Figure 1:** (a and b) *Ben Cao Gang Mu Ying Jiao Dui Zhao* (《本草纲目影校对照》 *A Contrast between the Photocopy and Collation of Compendium of Materia Medica*)

are stored in foreign countries and only three in China, which are, respectively, kept by the Library of Chinese Academy of Chinese Medical Science in Beijing(北京中国中医科学院图书馆), the Shanghai Library（上海图书馆）, and a private library. It is no doubt that *Jinling* edition of *Ben Cao Gang Mu* has incalculable historical value. But because of the poor engraving and printing quality, its writing is not clear enough and some words are too obscure to be identified. Shortly after the release of the *Jinling* edition, there produced the *Jiangxi* edition(江西版) and on this basis derived a variety of versions of higher quality; but due to various reasons, there are some errors in the text. Therefore, the precious *Jinling* edition of *Ben Cao Gang Mu* has been photocopied in recent years at home and abroad. Photocopying has the advantage of keeping true; but it is not very convenient in reading, as there are mistakes and descriptions difficult for the general readers to know, which makes it even more difficult to use.

Besides photocopies, another common form of inheritance is collation. Previously, there was a collating edition of *Ben Cao Gang Mu* wrote by Liu Hengru(刘衡如) (published by People's Health Publishing House人民卫生出版社, 1977), which used *Jiangxi* edition as the master copy because of the missing *Jinling* edition. Later, there developed lots of collation editions based on *Jinling* edition, such as the edition made by Liu Hengru and his son Liu Shanyong (刘山永), the edition made by Shanyong Liu, and the edition made by Qian Chaochen(钱超尘) and Wen Changlu(温长路) (there are also many simple collations). Collated editions bring great convenience to readers; but, it can lose the original appearance of ancient text to varying degrees and make mistakes because of the deviation of the collator's understanding.

Therefore, finding out a method that can not only "preserve truth" well but also to the greatest extent "make it easy to read" is a great difficulty placed in front of Zhang Zhibin and Zheng Jinsheng; over the years, the two professors gave the perfect answer with the book *Ben Cao Gang Mu Ying Jiao Dui Zhao* (《本草纲目影校对照》*Contrast between the Photocopy and Collation of Compendium of Materia Medica*) and the elaborate design in the book.

## Contrast between the Photocopy and Collation

The most common ways to pass on ancient books are photocopying and collating. However, for the further study of *Ben Cao Gang Mu*, using one method alone has some drawbacks. To this end, the book *Photocopy and Collation* (《影校》) uses photocopying and collating together to solve this problem. To be more specific, it photocopies the original *Jinling* edition on even pages, records the original text of even pages, and makes collating on odd ones. Moreover, the recording part entirely follows the format of the original book, that is, the lines and the words are basically arranged according to the position of the original book (only the double-line notes on the original book changed to single-line ones). In this way, the reader can see two kinds of text at once: modern collated text on odd pages and original *Jinling* edition photocopies on even pages; in this way, readers can see the editor's understanding and processing method on the original text. By contrasting, the advantages of photocopying and collating are mutually reinforcing. For *Ben Cao Gang Mu*, an excellent ancient scientific and technological masterpiece, such a printing method is necessary and worthwhile.

## Cross-referencing of Five Master Copies

The existing *Jinling* edition *Ben Cao Gang Mu* in the world is less than ten copies. Although they are all *Jinling* editions, each of them has some defects or corrections. In the past, researchers can only access to one copy of *Jinling* edition for studying, which inevitably led to mistakes. In recent years, most photocopies of the *Jinling* editions in China are photocopied from the collections of the Shanghai Library or the Library of the Chinese Academy of traditional Chinese Medicine (when *Jinling* edition was used as the master copy for recording and collating, the two copies were the first choice). While after comparison, it shows that the *Jinling* edition collected by the Japanese Library of Parliament（日本国会图书馆） is of better quality than those in China and is rare in China; so, the editor chose this one as the master copy. To avoid the disadvantages of using only one copy, the editor also made a comprehensive review on the other four *Jinling* editions, which are, respectively, kept in the Library of Congress of the United States（美国国会图书馆）, the Cabinet Library of the Japanese Official Library（日本公文书馆内阁文库）, the Library of the Chinese Academy of Traditional Chinese Medicine, and the Shanghai Library, and collated the differences. Noticeably, editors' extremely hard work in collecting the 5 *Jinling* editions lays an important literature foundation for the success of this book.

## Rigorous and Meticulous Word Processing

The word processing of this book is perhaps the most painstaking part of the orchestration.

Ancient books are mostly written in traditional Chinese characters. In mainland China, simplified characters have been used since 1950s, and it is common to use simplified characters

to collate ancient works in accordance with the reading habits of the modern readership. However, since simplified characters and traditional characters are not of one-to-one correspondence, the using of simplified characters can lead to the uncertainty of part of text information.

In view of the complex writing phenomenon in the *Jinling* edition, editors developed a rule which includes basic principles and the principles for the special circumstances after careful studying, devising a reasonable solution to the complex character phenomenon on the original book, which guarantees the quality of this publication.

## Deep Textual Research With Full Punctuation

In the punctuation scheme, the book title mark and the proper name mark are included. In the vertical text, corrugated line is for book titles and straight line for proper names. Full-form punctuation, or the use of a complete punctuation system with the emphasis of marking the reference book title and proper names, is a successful initiative in the research history of *Ben Cao Gang Mu* and a big step forward in the research on this area.

Zhibin Zhang and Jinsheng Zheng, editors of *Photocopy and Collation*, are highly respected experts. They have been studied the academic field of Chinese herbal medicine, especially *Ben Cao Gang Mu*, for many years. In 2015, they received grants from the National Publishing Fund to collate and publish the Ben Cao Gang Mu Research Series（《本草纲目研究集成》） is the foundation and core of this series of books, for which the two collators set a high standard. Thanks to the two professors' careful collation, it reached the expected high level according to the publication. Among the *Ben Cao Gang Mu Research Series*, two other subbooks have been published, one is *Ben Cao Gang Mu Dao Du* (《本草纲目导读》*Introduction of Compendium of Materia Medica*) edited by Zhang Zhibin and Zheng Jinsheng and the other one is *Ben Cao Gang Mu Tu Kao* (《本草纲目图考》*Pictorial Research on Compendium of Materia Medica*) edited by Wang Jiakui(王家葵), Jiang Miao(蒋淼), and Hu Yingchong(胡颖翀). The former one focuses on guiding the understanding of *Ben Cao Gang Mu* while the latter one emphasizes on the examination of the graphic changes among the different versions of the *Ben Cao Gang Mu*, which are both full of creativity. The expected subbooks of *Ben Cao Gang Mu Research Series* are, respectively, focused on the study of the reference sourcing, words and phrases, identification of origin for ancient herbs, and the ancient herbal medicine literature. Based on the success of the three published books, the companion pieces that have yet to be published are highly anticipated!

Translator: Rui Wang(王瑞)

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### Conflicts of interest

There are no conflicts of interest.

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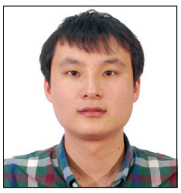
Research Article

# Indigo Naturalis (青黛) Comes from Blue, but It Excels Blue



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## Abstract

Indigo naturalis （青黛） is also called "indigo flower," "bright cyan," and "cyan clam powder." The alias "indigo flower" shows its complex progress about producing dyes. The alias "bright cyan" vividly displays the visual characteristics of indigo naturalis. Its another alias "cyan clam powder" implies its properties, flavors, and particular morphologic characteristics. The name of "indigo naturalis" emphasizes its wide use in ancient times to paint their eyebrows. Indigo naturalis, which comes from the Persian Kingdom, wins the favor and praise of customers in the respects of dye and cosmetics in both Eastern and Western Regions. It not only shows the infinite charm of dye culture in the Western Regions and provides a visual sensation for people, but also adds new color for Chinese medicine culture.

**Keywords:** Bright cyan, Cyan clam powder, dye culture, functions, indigo naturalis （青黛）

*Indigo naturalis*（青黛） *is cold in property, salty in flavor and nontoxic. It can detoxify drugs, cure fever in children, convulsion and twitching. Besides, it can be applied in the therapy of epidemic headache, cold and heat with water decoction. In addition, it can treat herpes simplex, swelling pain, metal-inflicted wound, hematochezia, snake and dog bites with fine powder in shape.*

*Kai Bao Ben Cao* (《开宝本草》*Kai Bao Materia Medica).*

When the camel bells of the Western Regions come from far and near, they not only brought the most wonderful voice for people living in the Central Plains, but also added rich color to life. Gradually, the colorful dye culture is constituted on the Silk Road. As it is known, both the original tie-dyeing art and the progress of painting eyebrows in ancient times have a close relation with a special dye. This dye is called indigo naturalis. After indigo naturalis was introduced from the Western Regions to China on the Silk Road, it became a good medicine. Obviously, indigo naturalis decorates our daily life and adds new color for Chinese medicine culture.

## Interpretation of Medical Name

According to historical records, indigo naturalis [Figure 1] was originally introduced from the Persian Kingdom (the modern-day Iran) into China as a dye. As a medicine, it was firstly emerged in the medical book *Kai Bao Ben Cao* (《开宝本草》*Kai Bao Materia Medica*). This book noted: "indigo naturalis came from the Persian Kingdom, then it was widely used in Luling and Nankang areas as a dye. At the same time, it could clear heat, reduce swelling and detoxify body bitten by poisonous snakes and insects." Some alias that can reflect the features of indigo naturalis are named by doctors of the past dynasties. For example, the alias "indigo flower" is according to its workmanship. The laudatory title of "bright cyan" is depended by its unique color. In addition, Li shizhen (李时珍) name it "cyan clam powder."

### Interpretation of alias

The original meaning of indigo is a mazarine organic dye. In ancient times, people used to dye white coarse cloth made by hand to blue for luck and beauty. This complex process of producing dyes is called "play indigo" [Figure 2]. In fact, the manufacturing operation of indigo naturalis is similar to "play indigo."[1] First, the stems and leaves of plants, such as

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*Baphicacanthus cusia Bremek*, *Polygonum tinctorium*, and *Isatis indigotica*, are picked. Then, those stems and leaves are put into a wooden cask or a big water vat that is filled with water. When those leaves are rotten, stems are peeled, and branches are disjointed, they are taken out immediately. At the same time, some pure lime is added and people will keep stirring them sufficiently until the water is changed from dark green to deep fuchsia.[2] After this chemical reaction is finished, the liquid surface will exhibit a large number of bubbles, which is colloquially known as "indigo flower."

The alias "bright cyan" vividly describes the visual characteristics of indigo naturalis. As *Shuo Wen Jie Zi* (《说文解字》*Chinese Characters in Paraphrasing Texts and Words*) says: "Bright cyan is used to refer to a bird that comes from a thick forest with cyan feathers." Hence, the origin of the alias "Bright cyan" is just a bird with cyan feathers, which makes indigo naturalis more colorful and smart. Besides, whether blue or green is on behalf of clarity, simplicity, and elegance. These colors deeply express the ancient people's desires to have a hermetic life in the mountains and be closer to nature. So, blue and green are the popular colors with the highest frequency of application in ancient poetry and ode. Exactly as Wu Changling (吴昌龄) recorded in *Dong Po Meng* (《东坡梦》 *The Dreams of Su Dongpo*): "Thousands of jades look so bright as if they are all dyed by indigo naturalis. The innumerable conches are so colorful as if they are made of rosy clouds."

The name "cyan clam powder" reflects its properties, flavors, and particular morphologic characteristics. When it comes to indigo naturalis, people will remind of clam. In fact, there are lots of similarities between indigo naturalis and clam. For example, they both are cold in property, salty in flavor, and can clear away the lung heat. Daige powder [Figure 3], which is composed of indigo naturalis and clam, can be used in the treatment of cough that is caused by liver fire. "Powder" shows the morphologic characteristics of indigo naturalis. Because indigo naturalis is almost fine powder in shape, it gets the alias of "cyan clam powder." Besides, this alias also indicates the main points of identifying indigo naturalis. It should be powdery in shape, cyan in color, light in weight, and can float on water. What's more, a red flame will arise if it is burnt. In particular, it should be classy if there is even no sand when chewing it.[3,4]

## Interpretation of indigo naturalis

Xunzi (荀子), who was a great thinker in ancient times, once said in *Quan Xue* (《劝学》 *Exhortation to Learning*): "Cyan comes from blue, but it excels blue." In fact, the "cyan" that mentioned above is indigo naturalis. As is known, indigo naturalis is extracted from many plants that are called "Blue," such as *Baphicacanthus cusia Bremek*, *P. tinctorium*, and *I. indigotica*. However, as a dye, indigo naturalis is truly bluer and more vigorous than the original. Xunzi (荀子) [Figure 4] likes to consider the promising young people who achieve academic success as indigo naturalis. On the contrary, he regarded teachers or seniors as bluegrass. As a black pigment used by women in ancient times to paint their eyebrows, the original meaning of indigo naturalis is just lividity. Just as Liu Xi (刘熙) described in Shi Ming in *Shi Ming* (《释名》 *Notes*

**Figure 1:** Indigo naturalis was originally introduced from the Persian Kingdom (the modern-day Iran) into China as a dye

**Figure 2:** The complex progress about producing dyes is so called "play indigo"

**Figure 3:** In clinical practice, indigo naturalis is often used along with clam, such as the famous Daige powder

*to Nominations*): "Eyebrows can be shaved and replaced by indigo naturalis." Meanwhile, Tao Qian (陶潜) said in *Xian Qing Fu* (《闲情赋》 *Ode to Leisure)*: "I want to be the indigo naturalis in her eyebrows. Then from far to near, she is always charming."

From indigo flower, bright cyan, to cyan clam powder, all the aliases describe its gorgeous and smart color. During this progress, indigo naturalis also shows the infinite charm of dye culture in the Western Regions, providing a visual sensation for people.

## Indigo Naturalis and Dye Culture in the Western Regions

As a dye, indigo naturalis is welcomed between the nobility and the civilian living in the Western Regions. It can be widely used in many aspects, such as cloth dyeing, hair dyeing, and painting eyebrows. It was said that the King of Sassanid Persian Empire once dyed his hair with indigo naturalis. In addition, the Tubo people were accustomed to smearing their faces with indigo naturalis at their parent's funeral. Du Huan (杜环), who was a tourist in Tang Dynasty, once mentioned in *Jing Xing Ji* (《经行记》 *Stores on Jorney*) that "In Ferghana (the modern-day Kazakhstan), women preferred to decorate their eyes with indigo naturalis rather than use lead powder." Hence, indigo naturalis can embody people's pursuit of beauty, whether it is working as a dye or cosmetics.

When indigo naturalis was introduced into China, it also won the favor and praise of customers in some respects of dye and cosmetics. Especially, it was widely applied in silk dyeing and painting eyebrows. In ancient times, dyes that could be applied to dye silk were divided into two major categories, including plants and minerals. Plant dyes become the most widely used dyes because of their rich varieties and beautiful colors. As we know, plant dyes are extracted from natural plants' stems, leaves, fruits, or seeds. Then, those dyes can be used to color the silk fibers. After the silk is colored, it is even brighter and gradually becomes the nobility's favorite dress material. As one of the main blue dyes, indigo naturalis has made great contributions. Furthermore, eyebrows are the most important part to express emotions. As early as the Spring and Autumn Warring States period, both the simple women picking mulberry leaves and valued concubines were addicted to inventing varied types of eyebrows to make themselves look more beautiful and moving. Song Yu (宋玉) described the beauty in *Deng Tuzi Hao Se Fu* (《登徒子好色赋》 *Deng Tuzi's Fond of Beauty*) that "Their eyebrows looked like cyan feathers." Moreover, Jing Chai (景差) also depicted the beauty in *Da Zhao* (《大招》 *Great Tricks*) as well that "They all owned cyan and straight eyebrows." Therefore, prosperous eyebrow culture was formed. For example, distant mountains eyebrows, arch eyebrows, and smoke eyebrows once became fashionable for a time. After indigo naturalis was introduced to our country, even indigo naturalis eyebrows appeared. Li Bai (李白), who was the poetic genius in the Tang Dynasty, said in his poem *Dui Jiu* (《对酒》 *Sing While Drinking*) that: "the beauty was painted with indigo naturalis eyebrows and dressed in red boots. She was singing shyly because her pronunciation was not accurate [Figure 5]." It is evident that indigo naturalis is widely used in painting eyebrows.

## Functions of Indigo Naturalis

By virtue of its color, indigo naturalis is applied in dyeing and cosmetic areas. By coincidence, the medicinal characteristics of indigo naturalis are also associated with its unique color. Because cyan is corresponding to liver, indigo naturalis belongs to liver and has the capacity to clear liver heat. In addition, indigo naturalis, Radix isatidis, and Folium isatidis are all derived from the same medicinal plant. As a result, indigo naturalis is featured with particular effects, including clearing heat, removing toxicity, and cooling blood. In a word, all the functions of indigo naturalis center on "clearing."

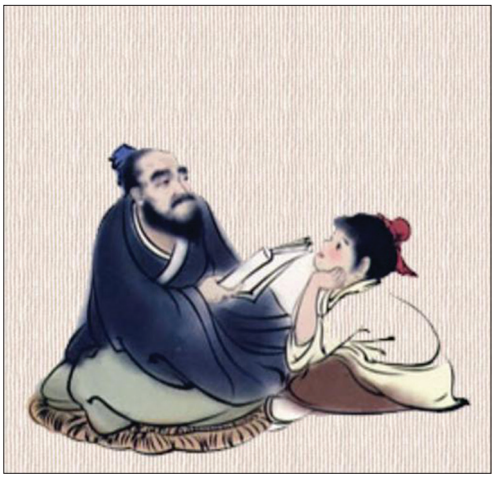

**Figure 4:** Xunzi (荀子), who was a great thinker in ancient times, once said in *Quan Xue* (《劝学》 Exhortation to Learning) "Cyan comes from blue, but it excels blue"

**Figure 5:** Eyebrows are the most important part to express emotions. Distant mountains eyebrows, arch eyebrows, and smoke eyebrows once became fashionable for a time

1. Heat in liver channel: Indigo naturalis can be used to eliminate heat in liver, including the following three parts:
   i. Stagnant fire in liver channel and up-flaming of liver fire: Indigo naturalis is cold in property, salty in flavor, and belongs to liver channel. Therefore, indigo naturalis is good at clearing away liver fire. Whether it is hypochondriac pain; bitter taste caused by stagnant fire in liver channel; or headache, red eyes, and sore throat resulting from up-flaming of liver fire, indigo naturalis can solve these problems effectively.
   ii. Convulsions caused by liver heat: Indigo naturalis is good at clearing away liver fire, removing heat, and cooling blood. When confronted with hyperpyrexia, convulsion, and twitching, indigo naturalis can clear heat and relieve convulsion effectively.
   iii. Cough caused by liver fire: It is extremely difficult to treat cough resulting from up-flaming of liver fire and due to lack of lung yin. This particular cough is called "wood-fire impairs the metal." Its clinical features include cough with little sputum, blood in the sputum, and hypochondriac pain. Because indigo naturalis belongs to the liver and lung, it can clear away liver fire and lung heat. As a result, it can relieve cough caused by liver fire. In clinical practice, indigo naturalis is often used along with clam, such as the famous Daige powder.
2. Carbuncle and maculae: Indigo naturalis is commonly applied in carbuncle and maculae through internal and external uses.[5] Except those common skin disorders, including carbuncle, indigo naturalis is particularly used in some skin diseases characterized by maculae, such as eczema and psoriasis. Indigo naturalis has good curative effect because it can clear heat, remove toxicity, cool blood, and eliminate maculae. In addition, due to its ability of clearing heat and removing toxicity, indigo naturalis is also applied in some infectious diseases, including flu, epidemic cerebrospinal meningitis, epidemic encephalitis B, and mumps.
3. Bleeding caused by heat: Indigo naturalis is cold in property, salty in flavor, and goes straight into blood. Hence, it can clear away heat and reduce fire. In clinical practice, it is widely used in the therapy of hemoptysis and hematochezia caused by blood heat.

For thousands of years, many types of dyes had been introduced from the Western Regions to the Central Plains. Those colorful dyes greatly enrich people's lives and add some gorgeous colors to Chinese silk culture. Finally, indigo naturalis that comes from the Persian Kingdom becomes the best choice for dyeing and medicinal purposes in both Eastern and Western Regions by virtue of its unique rich color, salty flavor, and cold property.

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### Conflicts of interest
There are no conflicts of interest.

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Research Article

# Traditional Chinese Medicine: How Is It An Invaluable Intangible Cultural Heritage

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## Abstract

This article deals with the concept of intangible culture heritage and the reasons why traditional Chinese medicine (TCM) should be specially preserved. The potential value of TCM and the existing measures for carrying on the cultural heritage adopted by China are also explored in the article.

**Keywords:** Intangible culture heritage, traditional Chinese medicine, value, laws and regulations

## Introduction

With the unprecedented rapidity of modern medical development, some people challenge the necessity to preserve traditional Chinese medicine (TCM) preservation, claiming that TCM does not meet the scientific criteria and should, therefore, be marginalized in today's medical system. Although their opinion sounds rather reasonable under the backdrop of the increasing dominance of science in the medical community, yet one point cannot be neglected, namely, TCM is not only an important branch of China's immense medical health service, but also an invaluable intangible cultural heritage with a history of more than 2000 years. The value of an intangible cultural heritage cannot be measured before we take the subsequent factors into consideration: national culture identity, sustainable development, and the harmony between nature and humankind. The potential value of intangible cultural heritage can fully justify why TCM should be specially protected.

## The Concept of Intangible Cultural Heritage

The concept of intangible cultural heritage originated in Japan after World War II when the country made her utmost to establish the new image of Japan. Historically, Japanese culture was heavily influenced by ancient China whose cultural elements, even today, can be easily seen in almost all aspects of Japanese daily life, ranging from chopsticks on dinner table to the architecture of Kiyomizu Temple (清水寺) in Kyoto (京都). Furthermore, TCM can find its counterpart in Japanese culture, that is, the so-called Kampo medicine (汉方医学).

The second half of the 20th century witnessed Japan's economic rise; almost at the same time, Japanese traditional culture had to confront the ever-increasing impact of American culture. Average Japanese, especially the young generation, were so fascinated by American popular culture that, in the 1950s, American movies, foods, popular songs, and clothes were found everywhere in this island country, and it seemed that no one was interested in cultures peculiar of Japan. Japanese national culture was being eroded by the alien culture. Because of its uniqueness, a nation's culture actually serves as a nation's identity, and it is difficult to imagine a nation whose culture is indistinguishable. It was for that reason that the first law to protect the intangible cultural heritage was enacted by Japan in 1950, in which the term "intangible cultural heritage (无形文化财产)" was presented for the first time. After that, great efforts had been made not only by Japanese governments at all levels, but also by numerous nongovernment organizations (NGOs) to protect the traditional Japanese cultures and such efforts turned out to be very successful. Japan set a good example for other

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countries such as Korea and China to take similar measures in their traditional cultures' protection. Japan's remarkable achievements in safeguarding the traditional culture finally caught the United Nations Educational, Scientific, and Cultural Organization's attention, who proposed the Convention for the Safeguarding of Intangible Cultural Heritage, and in the year 2003, this convention was passed and signed by 175 countries, including China, a country with abundant cultural heritage.

According to the Convention for the Safeguarding of Intangible Cultural Heritage, the concept of intangible cultural heritage can be defined as "the practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and in some cases, individuals recognize as part of their cultural heritage. This intangible cultural heritage, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with nature and their history, and provides them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity."[1]

Similarly, Chinese scholars also put forward the definition of intangible cultural heritage, known as nonphysical cultural heritage in Mandarin. Yuan Li (苑利2009), for example, in his book *Nonphysical Cultural Heritage* （《非物质文化遗产》）co-authored with Gu Jun（顾军）, describes intangible cultural heritage as: "knowledges, skills, cultural events handed down, in active state, generation by generation with universal value in the studies of history, arts, cultures, science, society, which can best represent the local features."[2]

Theoretically, TCM consists of an immense body of knowledge, mainly derived from ancient Chinese philosophy like Yin Yang (阴阳) and Wu Xing (五行); in addition, the unique therapies of TCM are also skills with cultural characteristics of China, handed down from our ancestors. There is, therefore, every reason for us to regard TCM as an intangible cultural heritage.

## The Potential Value of Traditional Chinese Medicine

The potential value of TCM falls into the following three parts:

### The applied value in medical practice

Unlike other intangible cultural heritage, TCM , as an important supplementary medical procedure, is still in use in China's current health system. As a result, people tend to make a comparison between the curative effects of modern medicine and TCM. Compared with TCM, modern medicine that benefits directly from the rapidly developing modern science and technology has the distinct advantages in most cases except chronic diseases that well respond and sometimes even yield to the treatment of TCM, which can account for why people's opinions split as to the issue whether TCM should be preserved or abolished.

Furthermore, when it comes to the applied value of TCM, one cannot turn a blind eye to the value of ancient TCM prescriptions recorded in TCM classics [Figure 1], which have been left untouched for many years and can be recalled to life in current application if they are well protected and fully developed as Prof. Tu Youyou（屠呦呦）, winner of Nobel Prize of physiology and medicine for 2015, did in her studyto extract artemisinin. Ancient TCM prescriptions represent the collective wisdom of Chinese ancestors in their medical practice, but many of these prescriptions are still in a state of dormancy. If no effective measures are taken to preserve such a precious legacy, it is not inconceivable that those prescriptions will, with the passage of time, fade away in history.

### The theoretical value in sustainable development

Industrial revolution that flourished in the 18th century, on the one hand, remarkably enhanced human being's capacity to make use of natural resources, but posed an ever-increasing threat to the human ecosystem's equilibrium on the other hand. Over the past 200-odd years, the relationship between humankind and ecosystem has been worsened to such a degree that resource utilization approaches, to which people are so accustomed, have to be reconsidered. How do people strike a balance between the infiniteness of human material desire and the finiteness of natural resources? It is not only a question about natural resources, but also the future of this planet, which has caused many to be deep in thought. Although this question remains unanswered, human being, who is confronted with the burden of the ever-expanding population, cannot slow down his/her pace in resource exploitation.

It is self-evident that the current situation is a dilemma, which seems to be intractable and defy any quick solution. Under this circumstance, there appears a new concept, namely, sustainable development, which, according to Wikipedia, means "the organizing principle for meeting human development goals while at the same time sustaining the ability of natural systems to provide the natural resources and ecosystem services upon which the economy and society depend…. While the modern concept of sustainable development is derived mostly from


**Figure 1:** The statue of Zhang Zhongjing（张仲景）

the 1987 Brundtland Report, it is also rooted in earlier ideas about sustainable forest management and the twentieth century environmental concerns."[3]

As a matter of fact, the concept of sustainable development, though put forward by developed nations, has its clue in the traditional culture of China, the biggest developing nation. The idea of Tian Ren He Yi (天人合一 or human is an integral part of nature), was initially raised by Confucius (551 BC–479 BC) and enriched and developed by other Confucians, like Dong Zhongshu (董仲舒 179 BC–104 BC) and Zhu Xi (朱熹1130 AD–1200 AD) to meet the interpretation requirements of their own philosophies. Dong Zhong Shu proposed his idea of Tian Ren Gan Ying (天人感应 or correspondence between man and nature), and Zhu Xi, a well-known exponent of Neo-Confucianism in the Southern Song Dynasty (1127 AD–1279 AD), viewed Tian Li (天理 or nature principles) as the top moral standards for people who believed in Confucianism. The so-called Tian Li can be roughly interpreted as the course of nature, or from a moral angle, the natural justice.

Tian (天) in traditional Chinese philosophy cannot be simply translated as "sky" or "heaven" in English, and in fact, it is not easy to find an appropriate counterpart in any other European languages because of its polysemy. Both the universe and the nature can be referred to as Tian, and they are, in some way, isomorphic concepts.

Furthermore, Tian Ren He Yi has been viewed as one of the fundamental principles of TCM in its diagnosis and therapy, which was particularly stressed in the TCM classical book, *Huang Di Nei Jing* (《黄帝内经》*The Yellow Emperor's Canon of Internal Medicine*). For example, together with Wu Xing, Yin and Yang that are described as two kinds of Qi, are interlinked with human body and pervade the nature so that nature and human make up a big organic system. (天地之间，六合之内，其气九州，九窍，五脏，十二节，皆通乎天气《黄帝内经·生气通天论》). Consequently, we have no other choice but to observe the natural laws whether in medical therapy or in health care; otherwise, both our health and life span will be adversely affected (数犯此者，则邪气伤人，此寿命之本也 《黄帝内经·生气通天论》).

Today, the concept of Tian Ren He Yi, which has gone far beyond the domains of traditional philosophy and medicine, is frequently used by conservationists to emphasize the significance of natural resources' preservation. This antique oriental concept, upheld by ancient China's philosophy, is the best explanation of the attitudes adopted by Chinese toward the relationship between humankind and nature. Human, according to this theory, is not the master of nature but an organic component like millions of other creatures living on this planet. Logically, human does not have the right to deplete the earth of its natural resources just for his/her own sake, for he/she is not the sole owner.

### The value in national culture representation

Like it or not, the world is undergoing a profound globalization that can be dated back to as early as the 15th century when the great European navigators like Magellan（麦哲伦） and Columbus（哥伦布） embarked on their ways to the "Great Discovery of Geography （地理大发现）." Before Magellan's circumnavigation of the earth, it is believed that the main civilizations on this planet presumably occurred and evolved in isolation. Therefore, national cultures of various kinds could maintain their distinctive features that could represent their national identities. Globalization does not mean that all the national cultures can be exchanged on equal terms; instead, national cultures of Western countries, especially the United States, have a dominant influence on many national cultures of developing countries, and the diversity of cultures has been actually put in jeopardy.

National culture, to a large extent, can be regarded as the symbol of the nation's identity. Features of national countries, if not protected by people with effective measures, may be gradually eroded and eventually eradicated.

Then, how do peoples safeguard their own cultures under the background of alien cultures' impact caused by the rapidly developing pace of globalization? In other words, how do peoples keep their national cultural identities without being forgotten? One feasible solution to the above questions is a perfect preservation of the intangible cultural heritage you have because intangible cultural heritage can act as the best vehicle with which to carry cultural genes, which is decisive to maintain global cultural diversity.

TCM has been viewed as a brilliant facet of Chinese culture, and comprehensive and effective protection of such a precious legacy can highlight the distinguishing features of our culture and nation and, therefore, strengthen the national's identity.

## China's Efforts to Intangible Cultural Heritage Sustain

China has had a tradition to protect her cultural heritage since ancient times. A good case in point is *Shi Jing* (《诗经》*The Book of Songs*), the first anthology of verse in the history of Chinese literature. Government officials were dispatched among the people throughout the country in the spring and the autumn periods (770 BC–476 BC) to collect excellent verses and compiled the book.

Now, the Chinese government is making great efforts [Figures 2 and 3] to preserve the nation's culture and has made remarkable achievements in many aspects of intangible cultural heritage protection, including the inheritance and development of TCM.

### The completion of laws and regulations

A sound system of laws and regulations respecting the safeguarding of intangible cultural heritage has been gradually established in China since the beginning of the reform and opening in 1978.

Above all, in explicit terms, the Constitution of the People's Republic of China stipulates that "The state protects sites of

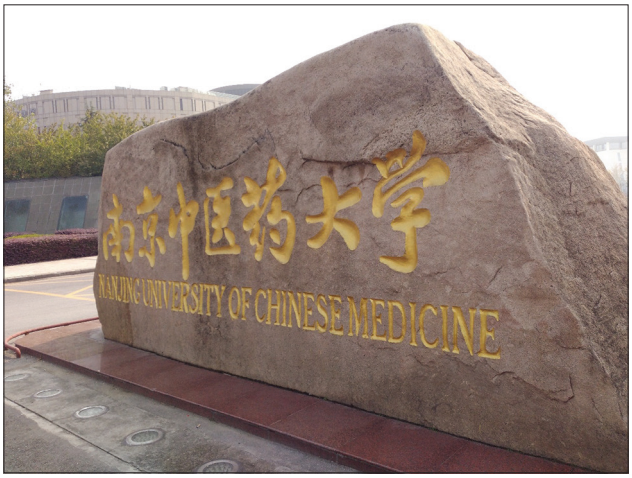


**Figure 2:** Traditional Chinese Medicine University

**Figure 3:** Traditional Chinese Medicine Museum

scenic and historical interest, valuable cultural monuments and relics and other significant items of China's historical and cultural heritage (Article 22, Constitution of the People's Republic of China)." Furthermore, Article 21 also makes it clear that "The state develops medical and health services, promotes modern medicine and Traditional Chinese medicine."[4] The two articles of the constitution lays a solid foundation, based on which a large number of laws and regulations have been made to protect TCM and other intangible cultural heritages. The domestic laws and regulations, together with some international conventions signed by China, has constituted a rather complete legal system for cultural heritage protection.

## Traditional Chinese Medicine items in intangible cultural heritage list

On February 25, 2011, Intangible Cultural Heritage Law of the People's Republic of China was ratified at the 19th Session of the Standing Committee of the 11th National People's Congress, and according to the law, investigations should be conducted by local governments to assess the value of TCM as intangible cultural heritage, and the selected TCM items should be inscribed on the heritage list for special preservation. Up till now, there have been 23 items of TCM admitted into the national list of intangible cultural heritage. On the whole, effective measures are being taken by Chinese governments at all levels, together with many NGOs, to protect TCM, an invaluable intangible cultural heritage.

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## Conflicts of interest

There are no conflicts of interest.

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Research Article

# Making Sense of an Ancient Discipline in a Modern Time: How Tai Chi（太极）Practice Benefits the Body–Mind

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## Abstract

Tai chi（太极）is an ancient Chinese traditional martial art that, today, is also practiced as a graceful and multifaceted form of exercise. It involves a series of movements performed in a slow, focused manner accompanied by deep breathing and expanded awareness of the body, mind, and surrounding environment. There is growing evidence that this mind–body practice has value in treating or preventing many health problems and you can get started even if you are not in top shape or the best of health. This paper is a review of the research that has been conducted internationally on the health-enhancing aspects of Tai Chi practice over the past few years. It is not possible to cover all areas of research in one paper; therefore, three important areas are chosen and discussed, namely, improving balance, strengthening the bones, reducing pain and the rest will be referred to in a future article.

**Keywords:** Balance, bone strength, Qi（气）, reducing the pain, Tai Chi（太极）

"If you want to know where in the end the purpose lies, it is to increase the longevity and extend one's years, a springtime of youth"

–Song of thirteen postures

## Philosophy, History, and Development of Tai Chi

Tai chi（太极）is an ancient Chinese traditional martial art that, today, is also practiced as a graceful and multifaceted form of exercise. It involves a series of movements performed in a slow, focused manner accompanied by deep breathing and expanded awareness of the body, mind, and surrounding environment.

In this low-impact, slow-motion exercise, you go without pausing through a series of motions named after animal movements, i.e., "white crane spreads its wings," martial arts movements such as "turn the body, separation kick," Chinese myths like "needle at sea bottom," or cosmological names as in "Big Deeper." As you move, you breathe deeply and naturally, focusing your attention – as in some kinds of meditation – on your bodily sensations. Tai chi differs from other types of exercise in several respects. The movements are usually circular and never forced, the muscles are relaxed rather than tensed, the joints are not fully extended or bent, and connective tissues are moderately stretched. Tai chi can be easily adapted for anyone, from the most fit to people confined to wheelchairs or those recovering from surgery.

Before the emergence of Tai Chi Chuan（太极拳） as a form martial art, the concept of Tai Chi existed as an important part of Chinese philosophy for more than a thousand years, as reflected in this famous saying from the Tai Chi classics: "Taiji, born from Wuji, is the mother of Yin-Yang; In movement it divides, at rest it reunites". In fact, Tai Chi Chuan is a martial art based on Tai Chi philosophy and has deep roots in Chinese traditional culture.

Having this background in mind, we can see that nowadays, Tai Chi is growing as a multifaceted art that attracts people of

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different interests who benefit from it. One of these aspects is improving health. There is growing evidence that this mind–body practice has value in treating or preventing many health problems and you can get started even if you are not in top shape or the best of health. This paper is a review of the research that has been conducted internationally on the health-enhancing aspects of Tai Chi practice over the past few years. It is not possible to cover all areas of research in one paper; therefore, some important areas are chosen and discussed, and the rest will be referred to in a future article.

## The View of Modern Research Improving Balance

The technical definition of balance, or postural stability, is the ability to maintain and control the position and motion of the center of mass of the body relative to the base of support. Several studies have found evidence that Tai Chi can increase balance and stability in all people, especially in older people and people with conditions that affect balance, such as multiple sclerosis and Parkinson's disease; Tai Chi can reduce the risk and fear of falling down too.

Balance and person's relationship to gravity involves many interacting factors, including musculoskeletal (muscle strength and flexibility), sensory perception, neuromuscular coordination or synergy, and cognitive processes. Understanding these components, including how they degrade with age or disease, and understanding how Tai Chi affects them will help you appreciate why Tai Chi is often so effective at improving balance. The musculoskeletal system includes bones, joints, skeletal muscles, tendons, and ligaments. Each person's muscle strength and flexibility, as well as the range of motion of joints, all help keep a person upright and affect his/her balance. In falls (especially among the elderly), the main reasons are significant muscle weakness due to aging, decreased ankle flexibility, and decreased spinal flexibility (especially spinal extension which is the ability to stand up straight).

Tai Chi is a weight-bearing exercise, and it involves a constant shifting of weight from one leg to the other, which facilitates improved dynamic standing balance and strength of the lower extremities (legs, ankles, and feet). Studies show improved lower extremity strength – in particular, knee strength, following Tai Chi training and so Tai Chi has effect on reducing pain and improving physical function and performance in patients with knee osteoarthritis, a condition that is one of the most common joint diseases seen in the elderly. Tai Chi also improves torso and limb flexibility and range of motion, which is an essential component for postural control. This valuable Chinese martial art is widely believed to encourage better posture through body alignments and an emphasis on maintaining a vertical posture with an extended head and trunk position.[1]

Another component related to balance is sensory. As a brief explanation to the role of sensory input, you need to know that brain receives a combination of balance-related sensory signals from your eyes; from pressure sensors in the skin, muscles, and joints; and from the vestibular system located in the inner ear. As we age, the quality of inputs from all three systems declines and several studies have shown that elderly people perform less well in maintaining a standing position than younger people when under conditions of reduced or conflicting sensory inputs.[2]

Tai Chi's continuous, slow, and even tempo facilitates sensory awareness of the speed, force, trajectory, and execution of movements, as well as awareness of the external environment. With Tai Chi, your sensory systems become highly sensitized, which leads to better balance and function. One Hong Kong study compared older Tai Chi practitioners to age-matched nonpractitioners and found that those who practiced Tai Chi scored higher on an instrument measuring overall body awareness. What's more, Tai Chi practitioners had significantly better ability to lean further in most directions without losing their stability.[3]

A more recent study showed that a group of elderly long-term Tai Chi practitioners had improved knee joint proprioception and their limits of stability during weight shifting in stance had expanded; Tai Chi practitioners had a better sense of the position of their ankle and knee joints in space.[4] Hence, Tai Chi may give you more accurate, quicker feedback for balance and posture, which could help prevent falling.

Some studies show that Tai Chi positively helps people who have peripheral neuropathy and experience little sensation in their hands and feet. Reduced sensation in the feet, for example, greatly affects balance. This condition is common among those who have diabetes or people who are undergoing chemotherapy, among others. A nonrandomized trial reported that a 12-week Tai Chi program in diabetic patients who had peripheral neuropathy increased nerve conduction velocities.[5] It is not just legs but the hands as well that become more sensitive through Tai Chi. For example, a study followed sensitivity to touch in a group of people who practiced Tai Chi. The result of this study showed that Tai Chi practitioners, most notably older people, had the equivalent increase in sensitivity seen among blind people who read Braille.[6]

A study carried out in Harvard University, led by Dr. David Krebs, has shown that Tai Chi can help patients who have vestibular-related balance problems. They compared 10 weeks of Tai Chi training with conventional vestibular rehabilitation exercises and realized that overall, Tai Chi more effectively improved dynamic balance control in those patients. It seems that Tai Chi may affect different mechanisms of balance than traditional rehabilitation in patients who have vestibular problems. Thus, Tai Chi may provide an excellent adjunct, synergistic therapy for patients who have medical vestibular disorders.[7] More generally, studies support that Tai Chi improves the ability to compensate when balance-related sensory input is limited or conflicting, and this is what is called improved sensory organization. Studies have shown that during balance testing, Tai Chi practitioners are better equipped to maintain their balance. In fact, some studies show that elderly Tai Chi practitioners attain the same level

of balance control as young, healthy individuals during these experimental challenges.[8]

When you do a motion, for example, when you put one step in front of the other, numerous muscles throughout your body must contract and relax in a coordinated fashion, in a process called neuromuscular synergy. As you grow old, the coordination of these related processes may break down, which may put you at more risk of falls. The rich diversity of Tai Chi's movements – the sequencing, timing, and combinations of different muscle groups – provides excellent training for the coordination of neuromuscular patterns. Research supports that Tai Chi can improve your dynamic balance as you move and help you recover from perturbations in balance, for example, when you slip on a wet sidewalk.

Research showed that people who were assigned to intensive Tai Chi training exhibited improved ankle neuromuscular reaction, better coordination of muscle groups, and better overall maintenance of balance. In another group of Tai Chi trainees, Tai Chi improved coordination during the very initial stage of walking (gait initiation) or make the gait faster and more stable.[9]

Another interacting factor in keeping balance is cognition. To explain cognition, you need to know that multiple thought processes interact with the other intrinsic factors to affect your balance. These processes include the fear of falling, planning or anticipating tricky situations (walking in the dark or across ice), and your ability to pay attention to postural control, especially while multitasking (for example, talking on a cell phone while walking at the same time). The fear of falling is an increasing problem as we age and is particularly prevalent in those who have balance disorders or a history of falling. From a traditional Chinese medicine perspective, the anxiety associated with fear of falling creates an energetic imbalance in the body, drawing excessive Qi into the chest and head and weakening the energetic root in the legs, and therefore disturbing your sense of feeling grounded. Many aspects of cognitive function decline with age, and elderly people who have a fear of falling are more likely to be depressed and to restrict their activities, and these factors seem to feed on each other.

It is highly likely that one of the primary ways that Tai Chi improves balance and reduces falls is by reducing the fear of falling and associated anxiety. Ironically, fear of falling is one of the biggest predictors of falls, which means that those who have a history of prior falls or who have impaired balance tend to be less grounded and less aware of themselves and their surrounding environment. Good evidence indicates that Tai Chi reduces the fear of falling, probably because this holistic intervention enhances relaxed, body awareness and provides more confidence from better strength and coordination and improves measures of mobility, social support satisfaction, and quality of life.[10] These benefits well explain why community programs are adopting Tai Chi for balance rehabilitation and fall prevention more and more.

Researchers are studying acceleratingly on coordinating and managing the multiple mind–body components during Tai Chi training – that is, integrated arm and leg moves, continuously changing direction, memorizing sequences, breathing, and postural awareness and inner sensations – may further enhance the handling of concurrent mental tasks during physical activities, such as walking down a flight of steps. For example, studies showed that Tai Chi might help improve older adults' capacity to shift attention between mental and physical tasks.[11]

One of the best aspects of Tai Chi is that all people can practise doing it, from young, healthy to elderly or people with disorders. Due to the simple, smooth, and low-impact nature of movements, Tai Chi is suitable for most, if not all, age groups with or without previous experience in sports activities. Tai Chi can be well adapted for each group, based on the circumstances. For instance, groups of researchers planned different simplified Tai Chi exercise program for older adults. Sitting Tai Chi or wheelchair Tai Chi is another common Tai Chi exercise that is widely applied for people with lower body issues.

Wheelchair-related falls are common in survivors with spinal cord injury (SCI). Improving static sitting balance in survivors with SCI can prevent them from sliding and decrease their risk of falling. Recently, a group of researchers at Shanghai Yangzhi Rehabilitation Hospital assessed the effects of wheelchair Tai Chi practice on balance control and quality of life among SCI survivors. After 6 weeks of Tai Chi training, static sitting balance, handgrip strength, and the psychological domain of quality of life improved significantly in the wheelchair Tai Chi group. Hence, this research suggested that Tai Chi can be a feasible, safe, and effective exercise for SCI survivors.[12] Tai Chi appears to help Parkinson's disease patients improve their balance and motor control. Parkinson's disease is a brain disorder that affects muscle control, causing trembling and stiffness, slowness in walking, and difficulties with balance. These impairments greatly hinder everyday function and quality of life.

Some Parkinson's disease symptoms, such as tremors, respond to drug therapy. But others, like overall balance, do not respond well to medication. Some studies suggest that mind-–body exercises like Tai Chi leads to clinically meaningful improvements in multiple domains of motor function and fall risk among patients with Parkinson disease. Recent findings also suggest that Tai Chi training leads to improvements in mood and quality of life.[13] Moreover, Tai Chi is safe and may provide physical and psychosocial benefits in individuals with multiple sclerosis.[14]

## Strengthening the Bones

Bone is a dynamic organ that undergoes remodeling throughout life. Bone density in men weakens with age. Bone density in women generally increases during the first three decades of life. At around age 40 years, bone mineral density (BMD) typically begins to decline, with more rapid changes following menopause, paralleling decrease in estrogen levels. However,

continued bone loss in later life may also be related to other factors, including decreased calcium and Vitamin D intake, decreased physical activity, and age-related impairment in bone formation. Low BMD-related fractures are associated with significant long-term impairment, high morbidity rates, and high medical costs.

Osteoporosis is a disabling condition predisposing to fractures in both women and men. Osteoporosis means porous bone. If you have osteoporosis, typically you have low BMD, poor bone quality, and fragile bones. This combination, together with the increased risk of falling among older people, leads to painful fractures and other health problems. Since lifelong drug therapy for this condition is an expensive option with uncertain consequences and potential side effects, nonpharmacologic therapy can be an attractive complementary treatment option for many women. For this reason, guidelines for the treatment of osteopenia include exercise. Most people commonly believe that to have an impact on bone, you need to do a considerable amount of high-intensity resistance and strength training. What's more, many older adults just do not do conventional exercises, either due to health factors or a lack of sustained interest, among other reasons. However, research suggests that lower impact exercises, such as Tai Chi, may reduce rates of bone loss, especially in women with moderately low bone density (osteopenia) or osteoporosis.[15]

Tai Chi classics say the body should feel like "steel wrapped in cotton," highlighting the image of how strong bones support relaxed muscles and connective tissues. Bones are piezoelectric materials and therefore can generate electrical activity in response to mechanical stress and allow for the delivery of an electrical stimulus that contributes to bone health. Tai Chi produces considerable mechanical stress on the different bones of the body, especially the axial skeleton; besides according to Tai Chi theory, it can move and concentrate Qi toward the bones and this Qi flow can strengthen the bones. These theories might suggest the underlying reasons why Tai Chi is beneficial to bone health and density.

One important source of information comes from studies of long-term Tai Chi practitioners. These studies are important because bone changes slowly; it is difficult to do experimental studies for long periods. One such study in Taiwan compared people who practiced Tai Chi for at least 7 years with age-matched controls in the same community. Those who did Tai Chi had greater bone density at the hip and spine. Another study also showed that the rate of decline in bone density among Tai Chi practitioners was slower than among age-matched controls. One trial observed that BMD at the lumbar spine significantly increased following 10 months of Tai Chi, while in sedentary controls, the BMD decreased.[16,17] Recently, Chow *et al*. conducted a randomized trial to evaluate the effect of Tai Chi on prevention of osteoporosis; they observed that Tai Chi is beneficial to BMD and may be a cost-effective and preventive measure of osteoporosis. They also confirmed that beneficial effect is better observed in long-term Tai Chi practice.[18,19] Collectively, these studies suggest that Tai Chi may reduce multiple fall-related fracture risks, especially in postmenopausal women.

## Reducing the Pain

Pain is one of the most prevalent and costly medical conditions and hence a key reason why people go to the doctor and take medication. A staggering number of people experience acute and chronic pain and are diagnosed with pain syndromes. Conventional therapies and medications often do not treat pain adequately; so, many people choose to use complementary alternative medicine, including mind–body exercises. These mind–body therapies include relaxation techniques (deep-breathing exercises, guided imagery, meditation, and progressive muscle relaxation), yoga, Tai Chi, and Qigong.

One of the major mechanisms of pain as explained by traditional Chinese medicine is associated with "stagnation" or "blockages" in the body's flow of Qi. Healing occurs through remobilizing this flow and addressing longer term structural or constitutional imbalances leading to the blockages. Traditional methods employed to treat pain and mobilize Qi include acupuncture, Tui Na, Chinese herbal medicine, Tai Chi, and Qigong. Underlying all these practices is the goal of "moving" Qi. Until recent years, Western physicians widely believed that bed rest, and not movement, was the best prescription for many pain conditions like lower back pain. However, evidence from clinical trials has changed this view to one more in line with traditional Eastern approaches that emphasize keeping things moving. Movement and simple exercises such as stretching, range of motion joint movements, and deep breathing now are prescribed increasingly as effective ways to help decrease pain and integrated into typical rehabilitation programs.[20] Physicians now recommend regular exercise to improve function in people who have chronic ailments, including arthritis and back pain.

Mind–body therapies such as Tai Chi are widely used by people who have back pain, as well as those who have osteoarthritis, fibromyalgia, and rheumatoid arthritis. A growing body of studies suggests that Tai Chi may be effective for easing pain and improving quality of life for these and other pain conditions. These researches are beginning to show how Tai Chi may positively affect musculoskeletal pain conditions, such as by improving strength, flexibility, postural alignment, neuromuscular movement patterns, breathing, and psychological well-being. For example, studies indicate that there is good evidence to suggest Tai Chi as a beneficial method to reduce pain in the management of knee osteoarthritis. Other possible benefits include reduced stiffness, improved function, and enhanced mobility.[21]

Another pain-related condition that is the subject of such mind–body exercise studies is fibromyalgia, a medical condition characterized by chronic widespread pain and a heightened pain response to pressure. Evidence suggests that Tai Chi is an effective modality in fibromyalgia patients not only for pain relief but also for improving physical function

and optimizing emotional well-being. A study by Jones *et al*. showed significant improvement in pain by practicing Tai Chi, and even some studies found that these effect sizes were even larger than those from Food and Drug Administration-approved pharmacotherapy, including antidepressants, gabapentinoid, and milnacipran.[22] More recently, nonrandomized studies have demonstrated the decreasing of the levels of acute pain in patients who participated in a course of Tai Chi.[23]

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There are no conflicts of interest.

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# Discover and Unfold the Mystery of Chinese Medicine

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## Abstract

This article shares my experience and journey in Chinese Medicine where I started back in 2014 in Malaysia for my bachelor's degree, and subsequently led me in continuing my postgraduate studies in Shanghai University of Traditional Chinese Medicine.

**Keywords:** China, Chinese medicine, experience sharing, journey, Malaysia

My journey in Chinese Medicine started back in 2014 when I joined the Chinese medicine programme in International Medical University (国际医科大学， IMU), Malaysia. Before joining the university, I had been working in St. John Ambulance of Malaysia （马来西亚圣约翰急救中心） [Figure 1] since high school, and it has taught me much not only on first-aid skills but also shaped me to voluntarily help people in need with its motto "for the service of mankind." Since then, it is my hope to be enrolled into a degree that could provide me a platform to help the sufferers to regain happiness and health. Many options were offered to me when I have completed my preuniversity program, and due to the strong curiosity of the long history of Chinese philosophy, evolution, and essence of one of the oldest form of medicine in the world, I chose to venture into Chinese Medicine.

When I first started my university bachelor's degree in Chinese medicine, I was very fortunate and blessed, to be awarded with the university (IMU) scholarship with full tuition fee waiver, which allows me, the eldest child in the family, to pursue the studies without burdening my retired parents who have to support my two younger siblings yet to graduate from university.

Along the way of learning Chinese Medicine, I was exposed to various Chinese philosophies and concepts such as Qi（气）, Yin（阴）, and Yang（阳）, and the five elements（五行）, which forms the fundamental of Chinese medicine theories. The ancient physicians related their observations of clinical practices and experiences with the Chinese philosophy and created many interesting theories. For instance, an ancient philosopher, Lao Zi (老子) mentioned in the Chapter 42 of *Tao Te Ching* (《道德经》), said "Tao produced one; one produced two; two produced three; three produced all things（道生一，一生二，二生三，三生万物）." All things leave behind them the obscurity and go forward to embrace the brightness, while they are harmonized by mutual combinations.

This philosophy was later adopted by ancient physicians who viewed that the *Tao*, which is also known as the process of nature, produces one thing which is symbolized by Qi. Qi produces two things, Yin and Yang, [Figure 2] which subsequently produce all things in nature. Therefore, all things in the universe can be categorized by either Yin or Yang, and each is able to keep the other in balance to achieve harmony.

Many who do not understand the Chinese philosophy might feel that the theory of Chinese medicine which originates from these philosophies are very vague and not able to relate how these philosophies can be used clinically to treat patients. However, during the clinical phase of my bachelor's degree, I have witnessed how these thoughts helped the diagnosis and treatment for patients, and it is always a satisfaction to see patients recover from their illness.

In the final year of my bachelor's education, all students were required to see patients independently as interns in the University of Chinese medicine clinic under the supervision of a qualified Chinese medicine physician. During my internship program, I had been receiving patients mostly with orthopedic-related conditions such as sprained Ankle, low back pain and frozen shoulders, which later played a huge role in developing my interest in Chinese medicine osteopathology traumatology. Most of the time, patients were satisfied with the treatment as their conditions were relieved and that gave me some confidence as I was trying to get as much clinical experience as possible.

Once a patient came in with complaints of low back pain [Figure 3] accompanied with tingling sensation down the lower limbs and was suspected of a prolapsed lumbar disc, as physical examinations and signs are positive toward the diagnosis. In the hope of relieving the pain temporarily, acupuncture was given under the supervision of qualified physicians. However, when the treatment ended, the patient felt sudden muscle weakness and severe pain on the low back when asked to stand up. The patient was immediately

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**Figure 1:** A group photo of St. John Ambulance of Malaysia（马来西亚圣约翰急救中心）

**Figure 3:** Medicine-practicing for low-back pain

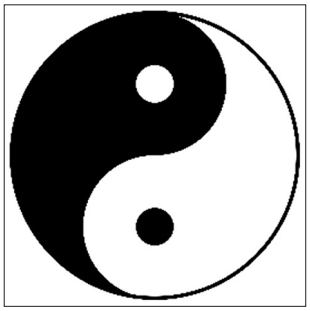

**Figure 2:** Diagram of Yin and Yang（阴阳图）


**Figure 4:** Better healthcare opportunity

rested on the bed and reassured before asking for help from the physician-in-charge. At last, the patient's pain was relieved after the physician inserted several needles at a few acupuncture points. After the incident, I realized although I was on the verge of completing my bachelor's degree, there are so much more to learn, and clinical experiences are needed to handle unexpected conditions. At that time, I decided that I shall take a step further to learn more from veteran physicians, to impart new knowledge and improve myself to care for my future patients better.

Once I attended a lecture on the core thoughts of Chinese medicine, and the message that I have perceived was the thoughts of Chinese philosophers are always based on observation of universal phenomenon, also known as Xiang Si Wei (象思维), while the Western philosophies are based on a form of logic system inherited from the Greek philosophers and seek answers through systematic experiments. Therefore, it is said that the Chinese thoughts of philosophies are important to raise wisdom questions while Western thoughts of philosophies are important to solve wisdom questions with wisdom answers. Both thoughts of philosophies are important, and one cannot compromise the other.

Therefore, after achieving my bachelor degree in Chinese Medicine in Malaysia, I realized that what I have learned in Chinese medicine could only help and relieve sufferings for certain patients but there might be limitations on certain diseases and to my knowledge, some diseases are well treated by Western medicine, and some have good recovery with integration of both Chinese and Western medicine.

My bachelor's degree curriculum comprised 70% Chinese Medicine subjects and 30% of Western Medicine subjects, which makes it compulsory for students to study and understand the basic sciences concept and terms. Considering the fact that we are the new generation of Chinese medicine graduates who go through the proper university education system, we had the opportunity to not only equip ourselves with the Chinese medicine knowledge [Figure 4] but also handle and understand cases better with sufficient basic sciences knowledge. As we move into the 21st century, Chinese Medicine has to evolve itself and keep up with the current technology and shall not stay stagnant at where it is like in the old days. The new era of Chinese medicine shall remain its authenticity, but at the same time, incorporate modern technologies that could help to improve the accuracy of diagnosis and shorten patients' recovery time. As health-care professionals, our main responsibility is to ensure the well-being and recovery of patients, at the same time to reduce the rate of misdiagnosis to the minimum.

China is one of the leading countries practicing integration of both Western and Chinese Medicine in treating patients, and with the eagerness and thirst to learn and discover more on orthopedic injuries, I have chosen to move on to pursue my Masters program in Chinese Medicine Osteopathology Traumatology in Shanghai University of Traditional Chinese Medicine (SHUTCM). I am very fortunate to have obtained a full scholarship from the China scholarship council to further my studies there and I am looking forward to my upcoming journey in SHUTCM, which is one of the renowned Chinese Medicine University in China, to get more exposures and clinical experience in dealing with orthopedic injuries, so as to benefit my future patients with more effective treatment methods.

Chinese Medicine has been an outstanding and unique system of medicine lasting for 5000 years, and it takes a lifetime to learn and discover the essence of it. As my lecturers always remind all of us, learning Chinese medicine, in the beginning, is easy, but it is tough to master the essence of it. Over the few thousands of years, the system of Chinese medicine has various schools of thoughts, with different perspectives on how ancient literature is interpreted, which makes it more interesting and challenging to slowly discover and understand the mystery of this ancient medicine.

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Nil.

## Conflicts of interest
There are no conflicts of interest.

Case Report

# Treatment Effects of Acupuncture and Calligraphy Training on Cognitive Abilities in Senile Demented Patients

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## Abstract

**Purpose:** This study compared the relative effectiveness of Chinese calligraphy handwriting (CCH) and acupuncture in the treatment of patients with senile dementia. **Materials and Methods:** A randomized controlled trial (RCT) with 17 mild-to-moderate dementia patients with an average age of 77.29 years were randomly assigned with 9 to the calligraphy handwriting group and 8 to the acupuncture treatment group for a month of consecutive treatment. The participants' cognitive abilities, as well as symptoms of senile dementia, were measured by the Chinese version of the Mini-mental State Examination (CMMSE) and the Chinese Medicine Quantitative Diagnostic Survey for Senile Dementia Symptoms, respectively, before and after the treatment. **Results:** The calligraphy group showed a significant increase in calculation and memory as well as a decline in the symptoms of senile dementia. Patients in the acupuncture group experienced a significant growth in total CMMSE scores and the subscales in orientation to time and place, behavioral operations, as well as reduced clinical symptoms. However, no significant changes were found in their memory and calculation abilities. **Conclusion:** Both CCH and acupuncture treatments were found significantly effective for, respectively, enhancing the patients' cognitive abilities and reducing their clinical symptoms. Further, calligraphy handwriting also improved the level of their attention and concentration, physical relaxation, and emotional stability.

**Keywords:** Acupuncture, calligraphy handwriting, cognitive abilities, senile dementia

## Introduction

Senile dementia is the mental deterioration is associated with old age. Two major types of senile dementia are identified: one is generalized "atrophy," resulting in long-term decline due to damage or disease (such as, Alzheimer's disease) and others due to vascular problems which are the result of a unique global brain injury (mainly, strokes). Based on the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition text revision, senile dementia includes a disruption in cognition, attention, memory, and problem-solving. In the later stages, patients might be disoriented in place, time, or even toward their relatives, and, in view of the fact that the effects of pharmacological treatment for dementia are usually short-lived and not guaranteed for all users. It may impose significant, financial burden on patients and their families. Hence, it will be a promising step ahead to use new specifically alternative target approaches for likely prevention or slowing down the decline of cognitive abilities.

Research in recent years has gradually established calligraphy therapy as an indigenous and complementary treatment. Chinese calligraphy has been studied within the principles of psychology, cognitive science, and cognitive neuroscience. It is capable of improving aspects of people's behavioral and psychosomatic conditions of essential hypertension,[1] diabetes,[2] and cancer patients[3] by enhancing their attention

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and concentration as well as facilitating their physical relaxation and emotional stabilization. Of particular note is also its effective improvement of the Alzheimer patients' cognitive abilities such as spatial ability, visual attention, calculation, and picture memory.[4-8] Furthermore, its effect in postponing the cognitive deterioration of the normal aging has also been reported recently.[9] A latest investigation on cortical excitation associated with the writing of universal character forms has reported an electroencephalography state during this practice.[10] This is a state very close to being asleep, but occurring during a dynamic act of brush handwriting. These findings have advanced the role of this visuomotor task to a cognitive neuroscience level of analysis.

Similar to the Chinese calligraphic handwriting, acupuncture is also a traditional Chinese cultural heritage. Acupuncture as an effective system of nonpharmacological treatment has been studied rigorously in both academic and clinical settings around the world. It is a form of traditional Chinese medicine that essentially corrects healthy problems by the use of sterilized needles inserted into meridian points of the human body. From a physical standpoint, acupuncture has been found to produce treatment effect on migraine prophylaxis headaches being as good as that of preventive medicine.[11] A further success was also noted in acupuncture treatment of insomnia[12,13] as well as in reducing heart rate variability.[14] Recent empirical evidence has shown acupuncture produces positive outcomes in cognitive impairment.[15-19] Above all, the positive absence of side effects was reported as a common outcome of the clinical application of acupuncture.

Above all, the present study was intended for a randomized controlled trial to compare calligraphy and acupuncture as two independent but effective systems of treatment for patients with senile dementia in similar areas of clinical and cognitive abilities.

## Materials and Methods

### Participants

Seventeen mild-to-moderate dementia patients from a hospital in Chengdu, the capital of Sichuan Province participated on a voluntary basis. There were 8 males and 9 females with an average age of 77.29 years. Patients were eligible for this study, who ranged in age from 62 to 93, had educational level of primary school or above, and all their Chinese Version of Mini-Mental State Examination (CMMSE)[20] scores were above 20. Presenting with behavioral and/or psychiatric disturbances was psychometrically assessed using CMMSE and Chinese Medicine Quantitative Diagnostic Survey for Senile Dementia Symptoms (self-made) as methods of reference diagnosis and differential diagnosis, before and after the treatment. Recruited patients were divided into two groups randomly: calligraphy group and acupuncture group. The calligraphy group comprised 9 patients (males = 2, females = 7) and acupuncture group included 8 patients (males = 7, females = 1). All the participants were right-handed, nonexperienced in Chinese calligraphy handwriting (CCH) or acupuncture. None of them had serious heart, liver, and kidney dysfunctions, or postdepression or poststroke with behavioral problems. Informed consent was obtained from all the participants.

### Procedure

#### *Calligraphy practice*

All participants in the calligraphy group had a calligraphic training together in a quiet, tidy, and bright big room led by a professional calligraphy teacher. They traced firstly and then copied the characters mainly in Yan Zhen-Qing style, the regular script with occasional (Seal script or Cursive script). The frequency of calligraphy writing was 45 min twice daily, one in the morning and the other in the afternoon, for 1 month. Seven days in the course of treatment, and then there were 3 days for the rest in between the courses. Normally, they wrote 100–200 characters each day. The calligraphic brushes were of the same size, a 6 cm × 6 cm pane was printed on the calligraphic rice paper.

#### *Acupuncture*

three acupoints were selected for acupuncture treatment, namely, Sishencong (Ex-HN01), Shenmen (HT07), and Taixi (KI03). The treatment was carried out by a registered Chinese medicine practitioner with considerable clinical experience in the acupuncture. Based on the National standard of China "Location of Acupoints" (GB12346-90),[21] Sishencong (Ex-HN01) was joined puncture in the direction of Baihui (DU20) with horizontal puncturing for 0.5 inch. Perpendicular needling of Shenmen (HT07) was 0.5 inch. Moreover, Taixi (KI03) was perpendicular needling in 0.8 inch. All the steps were completed with twirling reinforcing method with the low-amplitude vibration. The duration of the treatment was 1 month with acupuncture conducted once each day and 7 days in the course of treatment. Furthermore, there were 3 days for rest in between the courses.

### Materials

#### *Cognitive functions*

The total scores of CMMSE served as the assessment index of cognitive abilities and the scores of the subscales, which included orientation to time and place (10 marks), calculation (5 marks), and behavioral operations (9 marks, comprising paper folding, problem-solving, language, writing, and picture abilities), were combined with JR Sampson's Picture Free-Recall Test[22] for measuring memory ability (12 items). The CMMSE was a widely adopted test designed for the evaluation of cognitive deficits in persons with dementia. The test was administered by trained research assistants, measured once before and once after the treatment in both groups. The decreased scores indicated more severe cognitive deficiencies.[20,23]

#### *Senile dementia symptoms*

In the Chinese Medicine Quantitative Diagnostic Survey for Senile Dementia Symptoms, the common symptoms of senile dementia were classified into 34 types of symptoms such as amnesia and lumbago. Each symptom was scored 0, 2, 4, and

6 for none, light, moderate, and severe states, respectively. Each symptom reported by subjects was initially given a score of 8. The patients apiece were tested in the pretreatment and the posttreatment stages, respectively. The cumulating scores for pretreatment and posttreatment were compared to evaluate the global treatment effects. Higher total scores represented more serious symptoms of senile dementia in the diagnosis.

### Statistical analysis

The data on treatment effectiveness were tested by the Statistical Package for the Social Sciences (SPSS) version 19.0 (IBM Corporation, 1 Orchard Rd, Armonk, NY 10504, USA). Paired samples *t*-test was used to compare the differences between the pretreatment and posttreatment in calligraphy and acupuncture groups, respectively. $P < 0.05$ was accepted as the basic statistical level of significance.

## Results

The patients in calligraphy group showed a significant increase in calculation scores (pretreatment = 1.89, posttreatment = 3.00, $P < 0.05$) and average score of memory (pretreatment = 12.57, posttreatment = 15.84, $P < 0.05$). Significant changes were also found in the calligraphy group in the Chinese Medicine Quantitative Diagnostic Survey for Senile Dementia Symptoms (pretreatment = 30.253, posttreatment = 12.67, $P < 0.05$). However, no significant improvement was observed in total CMMSE scores and its two subscales (orientation to time and place and behavioral operations).

Patients in acupuncture group experienced a significant growth in total CMMSE scores (pretreatment = 13.63, posttreatment = 18.13, $P < 0.05$) and subscales in orientation to time and place (pretreatment = 3.13, posttreatment = 4.05, $P < 0.01$) as well as the scores of behavioral operations (pretreatment = 5.63, posttreatment = 7.13, $P < 0.05$). Senile Dementia Symptoms were also significantly decreased after acupuncture treatment (pretreatment = 12.25, posttreatment = 8.25, $P < 0.05$). However, there were no significant changes in memory and calculation subscales of the CMMSE.

## Discussion

The results of our study show that both calligraphy handwriting and acupuncture treatment have good treatment effects on improving cognitive abilities and lessening the symptoms of senior dementia. As practices of complementary and alternative medicines, each treatment has resulted in some positive effects for persons suffering senior dementia.

The findings of this present study have offered preliminary evidence to the effectiveness of practicing Chinese calligraphic handwriting (CCH) in treating senior dementia patients' cognitive functions, such as calculation. Memory ability in the posttreatment test also enhanced significantly, as well as improvements in clinical symptoms. It is further indicated that the act of calligraphic writing enhanced the patients' attention and concentration, physical relaxation, and emotional stabilization. This effectiveness is in line with our previous studies on normal elderly people or Alzheimer's disease patients.[5-8,24] These results have broadened its effects in treating the cognitive and mental states of senile dementia by moving into a more advanced state of cognitive decline. Theoretical explanation of the effect of calligraphy treatment is largely attributed to a systematic behavioral feedback control mechanism underlying the act and process of handwriting and calligraphy practice.[25] Furthermore, a recent study reported that both the closed Chinese characters and the closed English letters could advance the practitioners' general visual-spatial aptitude in terms of their enhanced cognitive capability to detect two-and three-dimensional cues.[26] Therefore, future research should identify other special Chinese character or English letters forms to benefit and improve different symptoms that are associated with senile dementia. Moreover, then patients in different stages of senile dementia stages will know specific kinds of characters or letters that could benefit them most on top of the general characters used in the present study.

Consistent with recent studies,[15-19] we also found the acupuncture treatment had positive effects on several cognitive functions, such as time and spatial orientation and behavioral operation, but resulted in insignificant improvement in memory ability. This is interpreted as showing that the lack of any linguistic content in the treatment process, but physical insertion of the needling act would seem to account for this outcome. This is, on the contrary, true to the act of brush writing of linguistic-based character formation which is filled with semantically enriched perceptual and cognitive contents in the case of calligraphy production. These findings are highly encouraging, with special reference to those of the practice of acupuncture as important branch of traditional Chinese medicine. In the prevalence of psychobehavioral application of acupuncture, significant improvements have been confirmed in such diseases as depression,[27] anxiety disorder,[28,29] mental stress,[30] as well as motor and cognitive abilities.[31,32] These positive findings of acupuncture treatment have added a new chapter of its application.

In general, the overall total CMMSE score did not produce a significant increase in posttreatment measurement in the case of calligraphy writing, which falls short of supporting our previous research on the Alzheimer's Disease patients, where a significant improvement was found in our earlier studies reviewed.[5,7] Here again, this outcome might also be attributable to calligraphy treatment being involved in a mild level of a minds-pacifying process, and thus its effect may not be as immediately apparent in the case of our very elderly participants. In addition, the small number of the participants might have lessened the likely impact of calligraphy treatment on the patients in the present study.

## Conclusion

Both the CCH and acupuncture treatments were found significantly effective for, respectively, enhancing the patient's

cognitive abilities and reducing their clinical symptoms. Further, calligraphy handwriting also improved their attention and concentration, physical relaxation, and emotional stability.

The implications of these positive findings are especially noteworthy in respect to the disappointing news about the lack of effective treatment validity of some of the commonly used Alzheimer's disease drugs.[33] Biogen and Eisai expressed, however, commitment after their discontinuation of the ENGAGE and EMERGE clinical trials programmes.[33]

The Biogen officials reported and confirmed the complexity of treating Alzheimer's disease and the need to further advance knowledge in neuroscience. Alzheimer's disease is the most common form of dementia, the collective term for a range of degenerative neurological conditions that affect memory, thinking, behaviour and emotion. There is no cure for dementia and has been no new treatment for the symptoms of dementia since 2002.[33]

Our comprehensive research on Acupuncture and Calligraphy is the first of such cognitive-neural treatment being applied as an integrated system of treatments that goes beyond the conventional biomedical model of intervention, and contributes to improved neural activation,[8] cognitive facilitation and emotion regulation. We believe this unique system of acupuncture and calligraphy which may open up new areas of behavioral and neuroscience enhancement of the debilitating conditions of the Alzheimer' disease.

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Nil.

### Conflicts of interest

There are no conflicts of interest.

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Case Report

# Treatment of Obesity with Western Medicine and Traditional Medicine: Based on PubMed and Science Direct Databases

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## Abstract

The objective of this review was to collect the current published research on obesity and gain insight into the association of treatment based on a global aspect. The first section of the review will cover the treatment of obesity based on a Western medicine lens. The second section of the review will cover the treatment through a traditional approach based from different regions of the world (not including China). The third section of the review will cover treatment through a traditional Chinese medicine approach. The most commonly used electronic databases were used to search for articles related to obesity. The articles gathered consist of a broad spectrum from various parts of the world. Terms used in the search bar consisted of "obesity", "BMI", "acupuncture", "traditional Chinese medicine", etc. The majority of findings were collected from treatment based on both a western medicine and traditional Chinese medicine approach. The published literature collected is predominantly sourced from the online journal databases PubMed and Science Direct. Obesity is an ever-growing issue throughout society today. Different methods have shown effective results in treating this disease. It is crucial to continue exploring different treatment methods in hopes to solve this major public health issue.

**Keywords:** Acupuncture, BMI, herbal medicine, phlegm, dampness, Simple obesity, traditional Chinese medicine, weightloss, Western Medicine

## Introduction

Obesity [Table 1] can be defined as the occurrence of an individual's weight being higher than what is considered as a healthy weight for a given height. An adult's body mass index (BMI) is used as a tool to categorize which category an individual may fall into. A BMI can then be calculated by taking an individuals' weight in kilograms divided by the individuals height in meters.[1] With this BMI, one may distinguish the category they fall under. Table 2 shows three different categories: Obesity can then be categorized into three different tiers.

On the contrary, overweight children can be defined as a BMI at or above the 85th percentile and below the 95th percentile for children and teens of the same age and sex. Obesity can be defined as a BMI at the 95th percentile for children and teens of the same age and sex. Just as an adult's BMI [Table 2] is used to classify one's weight category, the same method is used to find whether a child may be considered obese. This is commonly known as "BMI-for-age [Table 3]." To calculate the BMI, the weight in kilograms is divided by the height in meters. This rising epidemic can be found in all parts of the world. Multiple studies have shown various treatment methods on how to go about in curing this fatal disease.

However, the BMI standard for the Asian [Table 4] ethnicity group differentiates when compared to the normal standard as mentioned above. The cutoffs for Asian countries are slightly lower for what is to be considered as overweight or obese.[2,3]

With an increase in a sedentary lifestyle, many people lack the recommended amount of exercise for a healthy lifestyle.

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**Table 1: Adult body mass index chart**

| BMI Range | BMI Ranking Category |
|---|---|
| <18.5 | Underweight |
| 18.5-<25 | Normal |
| 25.0<30 | Overweight |
| 30.0 or > | Obese |

BMI: Body mass index

**Table 2: Adult obesity BMI index chart**

| BMI Class Ranking | BMI |
|---|---|
| Class 1 | BMI of 30<35 |
| Class 2 | BMI of 35<40 |
| Class 3 | BMI of 40 or higher |

BMI: Body mass index

**Table 3: BMI-for-age chart**

| BMI Ranking Category | BMI Percentile Range |
|---|---|
| Underweight | <5$^{th}$ percentile |
| Normal | 5$^{th}$ percentile-< 85$^{th}$ percentile |
| Overweight | 85$^{th}$-<95$^{th}$ percentile |
| Obese | 95$^{th}$ percentile or greater |

BMI: Body mass index

**Table 4: BMI for Asians**

| BMI Range | BMI Ranking Category |
|---|---|
| BMI <18.5 | Underweight |
| BMI 18.5<22.9 | Normal |
| BMI 22.9<24.9 | Overweight |
| BMI 25 or> | Obese |

BMI: Body mass index

In addition, a diet enriched in energy-fueled foods and low in fat is often lacked. The World Health Organization claims that this fatal disease has almost tripled in the past 30 years. What was once a problem in only high-income countries has now spread across the globe to both low- and middle-income countries. Global statistics for 2016 shows more than 1.9 billion adults aged 18 years and older were overweight; 650 million adults from this group are considered to be obese. In the same year, findings show over 340 million children and young adults between the ages of 5–19 were either overweight or obese.[4]

With a high BMI, obesity becomes very susceptible throughout the world. Some of the major diseases associated with obesity are cardiovascular disease, musculoskeletal disorders, and cancer. Overweight children are more at risk to be obese later in their life, as well as premature death and disability are more likely to occur.

### Objectives

The objective of this review was to collect the current published research on the topic of obesity and gain insight into the association of treatment based on a global aspect. The first section of the review will cover the treatment of obesity based on a western medicine lens. The second section of the review will cover the treatment of obesity through a traditional approach based on different regions of the world (not including Chinese medicine). The third section will cover the treatment of obesity through the traditional Chinese medicine approach.

## Methods

The most commonly used electronic databases were used to search for articles related to obesity. The articles gathered consist of a broad spectrum from various parts of the world. The terms used in the search bar consisted of "obesity," "obese," "BMI," "obese treatment," "acupuncture," and "traditional Chinese medicine." A majority of findings were collected from treatment based on both Western medicine and traditional Chinese medicine approach. A total of 328 studies were selected through the primary database collections. Of these collected, 30 publications met our inclusion criteria for this literature review. The published literature collected is sourced from the online journal databases – PubMed and Science Direct.

## Results (Western)

### The treatment of obesity

Findings show treatment for obesity heavily involves lifestyle changes to an individual's diet and sleeping patterns. Surgical procedures may be necessary if the lifestyle changes are not sufficient.

### The treatment of obesity: weight control by time-restricted diet and its effect on circadian patterns

Shifted circadian patterns have shown to play a negative effect of the metabolic production of a species digestive system. A study using mouse models performed an experiment on whether a time-restricted diet affected weight. Mice naturally consume their caloric intake during the evening hours as they are nocturnal (opposite of humans). Results of those who consumed food out of the natural time frame during the day were more prone to obesity. When a time restriction was placed on the obese mice allowing them to only eat during a specific time during the normal feeding hours, there was a significant reduction in weight levels.[5] Individuals who have working hours outside of the normal 9–5 pm schedule may have a greater likelihood of suffering from obesity. Studies have shown that meal patterns have a heavy influence on the metabolic digestive system of an individual.[6] Time-restricted diet within a circadian rhythm may positively influence those who suffer from obesity. A study performed on a group of women showed results of a higher insulin rate after meal consumption. Those who skipped breakfast may be more prone

to a higher insulin rate after meal consumption, increased hunger throughout the day, and a decrease in satisfaction.[7] These effects are known to be a causing factor in obesity. It is also important not to abstain from eating foods or drinks as this may cause a desynchrony in the metabolic digestive system.[8] If one struggles from obesity, it is of their best interest for food intake to occur in the early parts of the day such as breakfast as this is the best time for consumption to have glucose control.

### The treatment of obesity: structured diet plan organized by a mobile app

Between 2012 and 2013, a mobile app designed in La Jolla, California, USA, was utilized as a means to measure the effects of food intake based on individuals' rhythm of ingestion. Theoverweight individuals who qualified for the case study wererequired to fall into the BMI group >25 kg/m$^{-1}$ and maintain a dailyfood intake taking place within a 14-h time frame. All participantsqualified as obese with BMI's >30. The participants were asked to report on their mobile device app each time ingestion occurred including water. Each obese member of the study was allowed to eat within a 10-h interval for one given day. Results show that when shortening the duration of one's diet, a decrease in weight is greatly influenced. The average reduction in weight loss was 3.27 kg; these results remained intact 36 weeks after the initial treatment. However, there are still many factors that can disturb a study such as this one including exercise, genetics, diet quality, and sleeping timetable. There is also the concept to be considered: recording daily consumptions will in fact make an individual more aware of their choices, which will result in a natural instinct to make healthier choices when determining consumption.[9]

### The treatment of obesity: Egg breakfast enhances weight loss

A study performed in the USA showed that consumption of eggs during the breakfast had great effects on weight loss. The individuals ($n = 152$) were required to have a BMI ≥25 and ≤50 kg and be between the ages of 25–60 years. The individuals were split among two groups: egg diet and bagel diet (BD). Both groups continued the same amount of energy density and total energy. The egg breakfast contained two eggs (340 kcal) and was consumed 5 days/week. Both groups were required to stay within a low-fat 1000 kcal daily intake. After 8 weeks, in comparison to the BD group, the ED group showed a 61% greater reduction in BMI ($-0.95 \pm 0.82$ vs. $-0.59 \pm 0.85$, $P < 0.05$), a 65% greater weight loss ($-2.63 \pm 2.33$ vs. $-1.59 \pm 2.38$ kg, $P < 0.05$), a 34% greater reduction in waist circumference ($P < 0.06$), and a 16% greater reduction in percent body fat ($P$ = not significant).[10] The study's results show a breakfast including eggs have a higher probability of lowering ones BMI compared to a breakfast diet based solely on carbs.

In China, a similar study was performed on a group of 156 obese Chinese adolescents. The participants were separated into two types of breakfast groups: breakfast with either an egg or steamed bread. Four hours later, the food intake was recorded for each individual. Using radioimmunoassay at 0, 30, and 180 min, the anorexigenic hormones peptide YY (PYY), glucagon-like peptide-1 (GLP-1), and orexigenic hormone gherkin were determined. Results show that those who consumed an egg breakfast showed an increase in satiety causing a decrease in both lunchtime food intake and body weight. The reason for this is due to an increase in serum PYY and GLP-1 ($P < 0.001$). Researcher claim from the study with a high-protein breakfast obese Chinese adolescents are prone to weight loss.[11]

## Results (Globally)

### The treatment of obesity: Evidence from gum arabic (acacia senegal)

Gum arabic is formed from the secretion of the Acacia Senegal tree. Most commonly found in Sudan; this sap can be found throughout various parts of Africa.[12] In 2012, a two-arm randomized, placebo-controlled, double-blind trial was conducted in the Department of Physiology at the Khartoum University in Sudan. The purpose was to find the effects gum arabic has on individuals once ingested based on BMI and body fat percentage. The trial consisted of 120 healthy adult females; 60 volunteers received GA (30 g/day) and the 60 volunteers for the placebo group received pectin (1 g/day) for a total of 60 days. After 6 weeks, the results showed a notable decrease in BMI by 0.32, and body fat percentage went down by 2.18%. Researches claim if the study shows positive results on healthy controls, the same could be seen in those suffering from obesity.[13]

### The treatment of obesity: evidence from a Korean study

Between April 2015 and December 2016, a study was conducted involving a 23-year-old obese woman with a BMI of 33.9 kg/m$^2$ (body weight, 88.2 kg; height, 161.4 cm). In addition, she suffered from polycystic ovarian syndrome (PCOS); test was performed for proper diagnosis [Table 5]. Before the treatment,

**Table 5: Korean Herbal Medicine Formula**

| Medicinal plants | Dosage (g) |
|---|---|
| Coicis Semen | 46 |
| Rehmanniae Radix | 33 |
| Radix Angelicae | 12 |
| Ephedrae Herba | 12 |
| Astragali Radix | 9 |
| Dioscoreae Rhizoma | 9 |
| Cnidii Rhizoma | 7 |
| Citri Unshius Pericarpium | 7 |
| Poria | 7 |
| Acanthopanacis Cortex | 7 |
| Magnoliae Cortex | 6 |
| Coptidis Rhizoma | 4 |
| Gardeniae Fructus | 4 |
| Cyperi Rhizoma | 4 |
| Foeniculi Fructus | 4 |
| Glycyrrhizae Radix et Rhizoma | 4 |
| Total | 175 |

she suffered from amenorrhea since August 2014 and had been trying to lose body weight with a low-calorie diet and exercise routine. Nevertheless, all attempts for weight loss were unsuccessful. The Korean herbal medicine (KHM) prescribed to the patient was mixed and decocted with purified water. She was instructed to take three dosages before meals. The table below [Table 5] shows the prescribed KHM concoction: the herbs mentioned in table 5 work together harmoniously in creating an effort to reduce weight. This combination is well known among the field of KHM. There were no additional treatment methods included; however, the patient was educated on what a healthy diet consists of and which exercise patterns would be of most benefit. Following the 18 months of treatment, the patients' weight reduced from 88.2 to 66.7 kg. After treatment, the woman menstruation cycle balanced out to occur at a regular rate (1/month).[14]

In 2011, a similar KHM concoction was distributed to 100 female rats; the name of the medicine is known as Chang-Chul-Eui-Ee-In-Tang (CCET). Just as the concoction given to the female patient mentioned previously, both share the same main ingredient of Coicis Semen. This plant is known to help ease feelings of hunger and reduce body weight. The study involving the rates showed a decrease in weight loss.[15]

### The treatment of obesity: evidence from a Malaysian-based clinical study with germinated brown rice

Germinated brown rice is commonly known as a whole food carrying various healing aspects known to various parts of the world. Of these healing properties, the nutrient inositol found in germinated brown rice (GBR) helps to increase the speed of fat metabolism, prevent the development of fatty liver, and help regulate blood sugar levels.[16]

The Malaysian Faculty of Medicine and Health Science conducted a study involving 46 male laboratory rats. The specimen involved were used in relation to treating obesity with germinated brown rice. Of the 46 individuals, 11 were subject to treatments involving a normal diet and the remaining 35 were subject to a high-fat diet (HFD). After 8 weeks, the second group of rats reached the ideal size in weight for the treatment of GBR to be administered.

Treatment involved separating the obese rats into 4 separate groups. The first group of 8 were considered the HFD-positive control group. The second group of 8 were given 25% GBR, another 8 were given 50% GBR, and the last group of 8 were given 100% GBR. The remaining three HFD rates were not a part of the remaining experiment as their bodies underwent autopsy to see the gain in weight of the adipose tissue. As a result of weight gain, there was also a prevalence of liver damage found among the obese specimen. GBR was able to reverse the damage of the liver and restore it back to its functional state.

The effects of ingesting GBR show a positive effect in the decrease of food consumption and weight gain. The grain carries features known to lower cholesterol and triglyceride levels which may in result lowering an individual's body weight. GBR is composed of a high amount of dietary fiber, vitamins, and minerals.

## Results (Traditional Chinese Medicine Approach)

### The treatment of obesity: Evidence from a study using electroacupuncture and Chinese medicine on obese patients with polycystic ovarian syndrome

PCOS is a disease caused by a functionality disorder of the endocrine. This disease often results in many different conditions such as hirsutism, reproductive impairment, hyperandrogenism, chronic anovulation, and obesity, which happens to be the most common factor associated with PCOS. Obesity occurs in over 50% of woman diagnosed with PCOS, and the area most commonly affected is found within the abdominal area. The reasoning behind a metabolic dysfunction is due to a resistance in the action of insulin.[17]

A study was conducted involving 67 female patients with PCOS. The treatment involved the usage of electroacupuncture with Chinese medicinal herbs.[18] A formal diagnosis involved criteria in both Western medicine and the syndrome differentiation in TCM.

Two groups were formed: 33 patients received acupuncture and herbal medicine; the other 34 patients received electroacupuncture and herbal medicine.

All patients were treated according to the system differentiation and were diagnosed as kidney deficiency with phlegm blockage and blood stasis or damp-heat accumulation.

The patients receiving treatment with electroacupuncture and acupuncture were separated into two main groups. Group 1 received bilateral acupoints: Sanyinjiao (SP-6), Xuehai (SP-10), Zusanli (ST-36), Tianshu (ST-25), Daheng (SP-15), Daimai (GB-26), Dahe (KI-12), Zigong (EX-CA-1), Taixi (KI-3), Zhongwan (CV-4), Qihai (CV-6), and Guanyuan (CV-4). Group 2 received bilateral acupoints: Sanyinjiao (SP-6), Taixi (KI-3), Yinlingquan (SP-9), Ganshu (BL-18), Geshu (BL-17), Shenshu (BL-23), Pishu (BL-20), and Ciliao (BL-32).

To treat phlegm blockage and blood stasis, bilateral acupoints: Hegu (LI-4), Gongsun (SP-4), Fenglong (ST-40), and Diji (SP-8) were added. To treat damp-heat accumulation, bilateral acupoints: Zhigou (TE-6), Quchi (LI-11), Taichung (LR-3), and Yanglingquan (GB-34) were added.

For electroacupuncture, needles, 0.28–0.32 mm in diameter and 40–75 mm in length, were inserted into acupoints with uniform reinforcing-reducing method. Points: Tianshi (ST 25), Sanyinjiao (SP 6), Zhongwan (CV 12), and Qihai (CV 6), or Pishu (BL 20), Shenshu (BL 23), Ciliao (BL 32), and Sanyinjiao (SP 6) were connected to a G6805II electric stimulator with continuous wave, 2 Hz frequency, and an electrical current tolerable to patients.

Needles would remain in the body for a total of 40 min with manipulations occurring every 10 min. Patients received treatment three times per week. After a course of 3 treatment cycles, observations of the effects were performed.

The Chinese medicine used for the study is known as a Tiankui capsule; consisting of Di Huang 地黄 (Radix Rehmanniae), Zhi Mu 知母 (Rhizoma Anemarrhenae), Yin Yang Huo 淫羊霍 (Herba Epimedium), Hu Zhang 虎杖 (Polygonum Cuspidatum), Ma Bian Cao 马鞭草 (Verbenae), Dang Gui 当归 (radix Angelicae Sinensis), Tao Ren 桃仁 (Semen Persicae), Huang Jing 黄精 (Rhizoma Polygonati), Shi Chang Pu 石菖蒲 (Rhizoma Acori Graminei), Gui Ban 龟板 (carapax et Plastrum Testudinis), and Bu Gu Zhi 补骨脂 (Fructus Psoraleae). The Tiankui capsule was taken orally, 6 capsules at a time, in both the morning and evening over the course of 3 months.

### The treatment of obesity: evidence from mulberry leaf extracts (Sang Ye 桑叶)

The mulberry leaf extract (MLE) has been used in the ancient practice of Chinese Medicine for thousands of years. The common name in Mandarin is 桑叶 "*Sang Ye*" and the Latin name is *Mori Folium*. In the TCM aspect, the mulberry leaf is cool in temperature. It has a surface-releasing effect which allows for movement and dispersing throughout the body. The herbal properties mainly connect with the lung and liver meridian channels and carry a bitter and/or sweet taste. The functions associated with the herb are as follows: disperses and scatters wind heat; calms the liver while clearing the eyes; clears the lungs and moistens dryness; and cools the blood and stops bleeding.[19] One study in particular shows how this traditional medicinal herb is used to treat obesity-induced Non Alcoholic Fatty Liver Disease. The results from the experiment showed that MLE greatly reduced body weight. The reasoning behind these results comes from the herbs' functional properties. MLE is capable to reduce the generation of fat lipids through the process of lipogenesis and help aid in the breakdown of fat during the process of lipolysis. In addition, MLE can help regulate the hepatic lipogenesis and lipolysis enzymes, reduce the liver lipid, and help control the oxidative stress of the liver.[20]

After a chemical analysis was complete, results showed that many polyphenols are within the makeup of MLE. The most common polyphenol found in MLE was chlorogenic acid derivative; a great agent for treating obesity. This particular polyphenol functionality consists of increasing energy which in turn promotes an increase in physical activity. Obese-induced laboratory mice show a positive correlation in maintaining glucose metabolism and insulin when injected daily with chlorogenic acid over the course of a 7-week treatment series.[21]

### The treatment of obesity: evidence from Ephedra Herba (Ma Huang 麻黄)

Ephedra Herba is a commonly used herb found among the traditional Chinese medicine practice. One known feature of the herbal drug is to improve metabolic disorders. The common name in Mandarin is 麻黄 "*Ma Huang*" and the Latin name is *Ephedra Herba*. In the TCM aspect, ephedra is warm in temperature. It has an acrid surface-releasing effect which allows for movement and dispersing throughout the body. The herbal properties mainly connect with the lung and urinary bladder meridian channels and carry a spicy, slightly bitter taste. A bitter taste is commonly linked to a purging effect on the body.[22]

A study using an oral glucose tolerance test was performed on HFD laboratory rats while receiving a high caloric food intake with Ephedra Sinica. Results revealed the Ephedra Sinica unregulated the expression of adiponectin and peroxisome proliferator-activated receptor alpha (and downregulated the expression of tumor necrosis factor-alpha.[23] Thus, by finding these results, it is clear to see that the herb has properties which may reduce obesity.

### The treatment of obesity: evidence from green tea (Lu Cha 绿茶)

Historical recordings show emperor Sin-Non declared over 3000 years ago that one cup of tea a day could help rid the body of many diseases.[24] This belief has continued on from generation to generation. Green tea is one of the most common herbal substances consumed by Chinese people; it is deeply rooted in their culture and medicinal practices.[25] The antioxidant epigallocatechin is a chemical compound found in green tea which acts as an agent for weight loss. ECGC injections were given to rats by IP injection; results showed within 2–7 days, body weight could be reduced by about 20%–30%. However, when the injection treatment stopped, the animals gained the weight back.[26,27]

The caffeine found in green tea may be one of the main agents in the reduction of weight in humans. A study was done in which 70 overweight Caucasians received 4 capsules per day containing 375 catechins, 270 mg epigallocatechin gallate (EGCG) and 150 mg caffeine. Results shows a 4.6% reduction in body weight and a waist circumference by 4.5% after 3 months.[28]

A study was performed on Asian individuals who were instructed to consume 340 ml of tea containing 576 mg catechins daily for 24 weeks. The results from the groups showed a reduction in body fat ratio and waist measurements compared to the control group who had a daily consumption of 340 ml tea with 75 mg catechins.[29] In addition, a group of adult Asian obese individual who consumed green tea pertaining 100 mg EGCG and 87 mg of caffeine per day for 12 weeks lost weight much greater compared to the placebo group that ate similar meals throughout the day with no combustion of tea.[30]

## Discussion

The various methods mentioned in this review are evidence which support the treatment of obesity both in a traditional and western sense. Additional analysis is crucial for furthering the expansion on treatments for this disease. Obesity is often times related to poor diet and lack in exercise which may result in the

formation of many chronic diseases. The usage of traditional Chinese medicine in the treatment of this disease can bring improvement with great measure due to the low risk effects. Data on the usage of traditional Chinese medicine in relations to the treatment of this disease are scarce. Further research is needed to better asses an understanding of this type of illness.

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### Conflicts of interest

There are no conflicts of interest.

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# The International Organization for Standardization (ISO) officially published ISO 21316:2019 *Traditional Chinese medicine –Isatis indigotica root* on February 5th, 2019

This standard was proposed and led by the standardization research team from Shanghai University of Traditional Chinese Medicine (SHUTCM). Project group was consisting of experts from China, Germany, Canada, Australia, Korea and Thailand. and they spent 34 months finishing the standard development procedures. Based on Chinese Pharmacopoeia, European Pharmacopoeia and Hong Kong Chinese Medicinal Material Standards, the research team mainly focused on Radix Isatidis's origin, morphology, moisture, ash content, exclusive identification, extraction and determination methods of index components. In addition, this international standard also specified the determination methods of some pesticides and heavy metals according to the demand of international market.

Isatis indigotica root is one of the most widely used varieties of Chinese Materia Medica, which has the functions of clearing heat and detoxification, cooling blood and promoting pharynx. It is used to treat pestilence poisoning, fever and sore throat, spots caused by epidemic heat syndrome, mumps, rotten throat, large head plague, erysipelas and swelling. *ISO 21316:2019 Traditional Chinese Medicine-Isatis indigotica root* is the first published ISO standard that was proposed and led by SHUTCM in the field of herbal medicine. Except for this standard, seven ISO international standards proposed by SHUTCM in the field of herbal medicine are still under development. These international standards will help ensure the quality and safety of traditional Chinese medicine, promote international trade in traditional Chinese medicine and benefit all mankind.


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