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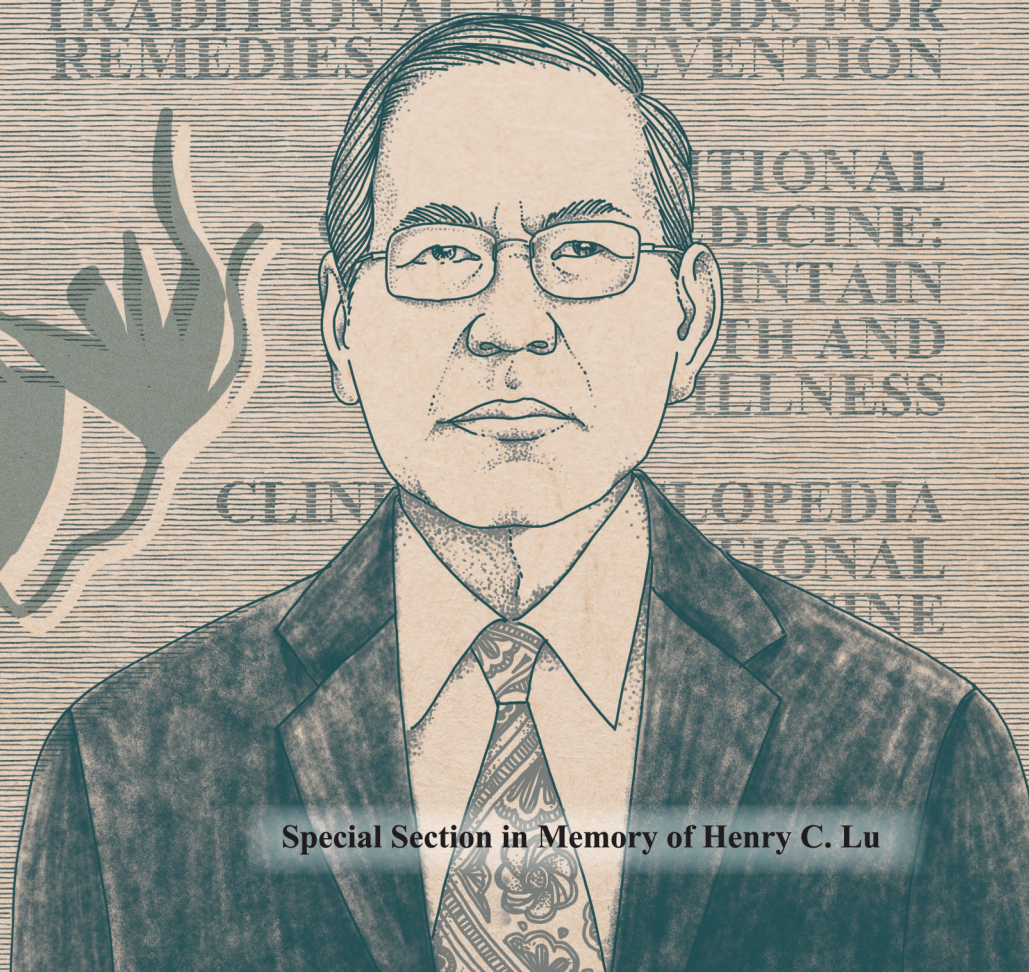
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A COMPLETE TRANSLATION OF
THE YELLOW EMPEROR'S
CLASSICS OF
INTERNAL MEDICINE
AND THE DIFFICULT CLASSIC

CHINESE NATURAL CURES:
TRADITIONAL METHODS FOR
REMEDIES AND PREVENTION

TRADITIONAL
MEDICINE:
MAINTAIN
HEALTH AND
PREVENT
ILLNESS

CLINICAL ENCYCLOPEDIA
OF TRADITIONAL
CHINESE MEDICINE



Special Section in Memory of Henry C. Lu

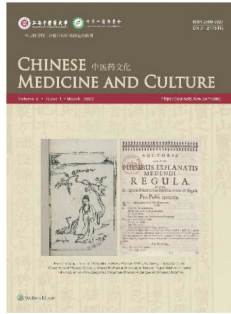
Chinese Medicine and Culture

中医药文化

Journal *Chinese Medicine and Culture* Included in Scopus

On June 20, 2022, the editorial office of *Chinese Medicine and Culture* received a notice from the Content Selection and Advisory Board of Scopus that the journal has been officially included in Scopus. We would like to extend our sincerest gratitude to all editorial members, reviewers, authors and readers for your constant support to CMC!

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The Journal *Chinese Medicine and Culture* (CMC) was launched in 2020 (ISSN: 2589-9627, CN: 31-2178/R9). It is a quarterly journal sponsored by Shanghai Municipal Education Commission, Shanghai University of Traditional Chinese Medicine and Chinese Association of Chinese Medicine. CMC is a peer-reviewed OA (open access) journal with Wolters Kluwer. The journal aims to integrate medical science and humanistic history, present compelling China stories and TCM stories, and build an interdisciplinary communication platform of traditional Chinese medicine with international influence. In 2019, CMC was selected as a new high-level journal of the “Excellence Action Plan for Chinese Sci-tech Journals”. In 2022, the journal was selected as one of the “Top Ten Most Beautiful Covers of China’s Outstanding Science and Technology Journals in 2021”. The Journal is now attracting widespread attraction from the international academic community.

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Prof. Xu Jianguang, MD

Dr. Xu Jianguang is a professor of orthopaedics (Hand Surgery, Microsurgery) and doctoral supervisor at Fudan University. He currently serves as a member of the Standing Committee of the 15th Shanghai Municipal People’s Congress; Chairman of the Committee of Education, Science, Culture and Health; Vice Chairman of Shanghai Association for Science and Technology; Former President of Shanghai University of Traditional Chinese Medicine; President of Shanghai Medical Association; President of Shanghai Medical Doctor Association; and Director of Reform and Development Committee; China Association of Chinese Medicine. He served as the President of Huashan Hospital affiliated to Fudan University, Director General of Shanghai Health Bureau, Director of Shanghai Food and Drug Administration, Vice Director of Chinese Medical Association (CMA), Director of CMA for Surgery of the Hand and the Founding Director of CMDA (Chinese Medical Doctor Association) for Hand Surgeons.

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From TCM Practice to Classic Texts: The Case of Henry C. Lu's *A Complete Translation of the Yellow Emperor's Classics of Internal Medicine and the Difficult Classic (Nei-Jing and Nan-Jing)*

Chen-Xue Jiang^{1*}, Yin-Quan Wang²

Abstract

In memory of Dr. Henry C. Lu, a traditional Chinese medicine (TCM) practitioner, educator and translator, this article provides an overview of his masterpiece *A Complete Translation of the Yellow Emperor's Classics of Internal Medicine and the Difficult Classic (Nei-Jing and Nan-Jing)* from the perspectives of book section, translation ideology and translation strategies. We then identify the features of TCM classics translated by overseas TCM practitioners and educators through analyzing exemplary characteristics of this translation. Their translations are often teaching oriented with plain and easy-to-read language, thus making TCM classics practical and applicable in clinic practice. Although these works are found in very few library collections of academic institutions, they received positive comments from readers including foreign TCM practitioners and students.

Keywords: Henry C. Lu; *Nei Jing*; *Nan Jing*; Translation of TCM classics

1 Introduction

In the long course of translating works related to traditional Chinese medicine (TCM), classics like *Huangdi Neijing* (《黄帝内经》 *The Yellow Emperor's Inner Classic*), *Nan Jing* (《难经》 *The Classic of Difficult Issues*), and *Shang Han Lun* (《伤寒论》 *Treatise on Cold Damage*) are always the first choice for scholars and doctors attempting to enter the world of TCM translation. Besides sinologists, historians, and anthropologists in the West who have made great contributions to translating TCM classics, a group of practitioners and acupuncturists have not only practiced TCM but also engaged in the translation of a great number of TCM classics since the 20th century. Most of them are overseas Chinese, either having practiced TCM abroad for years or dedicated to the TCM education for international students. As their practice and teaching are often limited by local regulations to pure TCM only, they have been seeking

more effective methods from classical TCM books. In this case, their in-depth comprehension of TCM classics lays a solid foundation for their translation work. Meanwhile, providing TCM education abroad requires translated TCM classics, which in turn also promotes those practitioners to translate.¹ For example, Dr. Henry C. Lu translated *Nei Jing* and *Nan Jing*, Dr. Ni Maosheng (倪懋兴) translated *Su Wen* (《素问》 *Basic Questions*), acupuncturists Wu Liansheng (吴连胜) and Wu Qi (吴奇) translated *Su Wen*, Wu Jingnuan (胡振南) translated *Ling Shu* (《灵枢》 *The Spiritual Pivot*), and Bob Flaws, the TCM practitioner and publisher translated *Pi Wei Lun* (《脾胃论》 *Treatise on the Spleen and Stomach*). Their translations undoubtedly play a significant role in the dissemination of TCM overseas.

Among the translators mentioned above, Dr. Henry C. Lu is an especially notable one, as he has provided a complete translation of two TCM classics. He was also the first overseas TCM practitioner to translate the classics in the last century. Unfortunately, this brilliant TCM practitioner, educator, and translator passed away on January 18, 2022, at the age of 85. In memory of his life-long devotion to TCM and his contributions to the spread of TCM worldwide, we provide an overview of his most representative work, *A Complete Translation of the Yellow Emperor's Classics of Internal Medicine and the Difficult Classic (Nei-Jing and Nan-Jing)*. We also use it as an example to further discuss the features of the TCM classics translated by practitioners.

To date, there have been only a few research into Dr. Henry C. Lu's TCM translation. Qiu Le (邱玟) introduced Dr. Henry C. Lu's two translated general books for TCM and praised them for their initial attempt at

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translating TCM theory.² Xu Tianhu (许天虎) discussed the translation of *Nei Jing* by Dr. Henry C. Lu from communication perspective, and concluded that his translation showed reverence to tradition and provided proper interpretations.³ Yang Yu (杨渝) classified Dr. Henry Lu's translation of *Nei Jing* as clinical application as it aimed to inform practitioners of TCM knowledge.⁴ Other discussions on Dr. Henry C. Lu's translation appear scatteredly in articles regarding the translation of *Nei Jing*.^{5,6} These studies indeed reveal an outline of Dr. Henry C. Lu's translation; however, there has been no close examination of his translated text, especially his complete translation of *Nei Jing* and *Nan Jing*, and the differences between his translations of TCM classics as a TCM practitioner and those of sinologists. The present study aims to provide insight in these areas.

2 Dr. Henry C. Lu and his TCM translation

Dr. Henry C. Lu received his PhD from the University of Alberta, Canada. He then taught at the University of Alberta and the University of Calgary between 1968 and 1971. He started to practice TCM in 1972. He founded the International College of Traditional Chinese Medicine of Vancouver (ICTCMV) in 1986 and helped initiate TCM and acupuncture legislation in British Columbia, Canada.⁷

Dr. Henry C. Lu contributed many scholarly works in TCM. He wrote and translated over 30 books, such as *Chinese Natural Cures: Traditional Methods for Remedies and Prevention*, *Traditional Chinese Medicine: How to Maintain Your Health and Treat Illness*, *Clinic Encyclopedia of Traditional Chinese Medicine*, and *A Comprehensive Clinical Manual of Chinese Acupuncture*. However, he was best known for his translation of *Nei Jing*.

3 Dr. Henry C. Lu's translation of *Nei Jing* and *Nan Jing*

Dr. Henry C. Lu's *A Complete Translation of the Yellow Emperor's Classics of Internal Medicine and the Difficult Classic (Nei-Jing and Nan-Jing)* was published in 1978. Twenty-three years later, he completely revised the translation by himself, and the revision was printed by ICTCMV in 2004.

Dr. Henry C. Lu once said,

"*Nei Jing* is the first and primary classic of TCM; it is the source of inspiration in the development of TCM. The classic has effectively guided the clinical practice and held in great esteem by all Chinese physicians for over two thousand years since its publication. The study of *Nei Jing* has gradually emerged as an important subject of study among Chinese and foreign scholars alike. Another classic, *Nan Jing*, is basically an exposition of the theory and philosophy of *Nei Jing* and remains so

closely related to *Nei Jing* that it makes logical sense to translate and publish them together to facilitate the reader's understanding of the two classics."⁷

Therefore, this translation is named *A Complete Translation of the Yellow Emperor's Classics of Internal Medicine and the Difficult Classic (Nei-Jing and Nan-Jing)*.

Translating the two classics is a huge project, not to mention that it further incorporates various researches, annotations, and commentaries by outstanding physicians and scholars in the past. As a result, it is produced with 800 pages of text and notes, bound in luxurious green satin in desktop size.⁷

This monumental work is divided into five volumes as follows: Volume I contains *Su Wen* from Chapter 1 to 40; Volume II contains *Su Wen* from Chapter 41 to 81; Volume III contains *Ling Shu* from Chapter 1 to 40; Volume IV contains *Ling Shu* from Chapter 41 to 81; Volume V contains *Nan Jing*, the Illustrations and the Index.⁸ This book's content unveils the whole extent of TCM classics; and is therefore considered as the earliest complete translation of both *Nei Jing* and *Nan Jing* to benefit foreign learners of TCM.

Dr. Henry C. Lu included a long introduction to this translation, beginning with acupuncture, and proceeding to herbal therapy and manipulative therapy to provide a broad view of TCM as a whole. Afterward, he introduces *Nei Jing* and *Nan Jing* in detail.⁸ By comparing the *Nei Jing* with Plato's *Republic* in Western philosophy and Shakespeare's English literature, he adeptly uses these analogies between the East and West to help readers appreciate the importance of this TCM classic and how this complete translation is difficult but deserved. He compares *Nei Jing* and *Nan Jing* to show their differences and explains some controversial questions related to *Nan Jing* in history.⁸ In this context, readers are provided with an easy but critical access to understand the background of the classic, paving the way to approach these TCM classics.

3.1 Translation ideology

As Dr. Henry C. Lu mentions in the preface, the translation of the Chinese text is conventional in that it follows the conventional interpretations of the original Chinese text already established in the course of Chinese history.⁸ His translation therefore does not aim to be philologically accurate; instead, it tends to follow what was considered widely acceptable by generations of TCM physicians and scholars throughout 2000 years of development. In contrast to the opinions that Dr. Henry C. Lu's translation follows the original text of *Nei Jing* in previous studies,⁴ he in fact takes the common historical views of most TCM physicians as reference to conduct his translation, that is, the conventional interpretations. Such translation principle clearly distinguishes his translation from those of sinologists who attempt to cover all

views of *Nei Jing*, and it succeeds in keeping the translated text fluent and easy-to-understand.

In case of ambiguities of the text or disagreements among Chinese scholars, Dr. Henry C. Lu suggests two principles: consistency throughout the text and conformity to the modern theory of Chinese medicine.⁸ Some studies propose that the two principles are specifically used in the translation of TCM terms.⁴ However, from Dr. Henry C. Lu's original statements, it is clear that these principles can be employed throughout the text, for medical terms, phrases, or sentences alike. As a result, the translation not only reads fluently throughout, but more importantly, clinically oriented. Conformity to contemporary TCM theory promises the phrases in TCM classics continue to live in the modern real world. Thanks to Dr. Henry C. Lu's wisdom gained from his long clinical experience, his translation helps make sense of the application of classical doctrine in modern practice.

3.2 Annotations and commentaries as translation features

The most distinguished feature of this book is the way the notes are presented. Statements inside parentheses are the translator's notes intended to facilitate the reader's understanding of the text. For example,

*"The energy of Heaven is clear and bright, it contains indefinite sources of virtues and it will never descend (so is true energy in man which contains indefinite sources of power and it is never used up)."*⁸

The sentence in the parentheses is Dr. Henry C. Lu's note for the original phrases "天气清静, 光明者也, 藏德不止, 故不下也."⁸ He transferred the implied meaning behind the description of nature to human features, thus reinforcing the idea of correspondence between human and nature. This fully illustrates his dual role of educator and clinical practitioner.

In other cases, when long passages require full explanations, they are provided under a separate heading "Translator's Commentary," where the translator's personal understanding of the classical text and his interpretations are found along with the translation.⁸ Such notes are rarely seen in other translated versions of *Nei Jing*.

For example, the end of Chapter 1 says

"Henry Lu's Commentary: In reading the *Nei Ching*, the reader should always keep two most essential things or concepts in mind, namely, the four laws of the five elements and the concept of 'correspondence', because the above two concepts play such an important role in the contents of the *Nei Ching* that anyone who fails to understand the two concepts in question will, without doubt, fail to understand the basic contents of the *Nei Ching*. So much so that logically speaking, the contents of the *Nei Ching* are built upon the Five Elements and their correspondence to others, such as the viscera and the bowels, the four seasons, the flavors, the colors, the atmospheric energies, the five senses, the five emotions, the five directions, the five sounds and so on and so forth."⁸

This commentary that repeatedly emphasizes the importance of the five elements and their correspondence as the basis of TCM is like an untiring and sincere teaching. These are not merely empty phrases on a scrap of paper. The translator must have understood that this concept is critical for practicing TCM according to his clinical experience; otherwise, he would not have chosen to dedicate a half-page-long explication on this matter. Such commentaries often appear in other chapters where more practical suggestions would be appreciated by practitioners. These commentaries are evident that the translator is also a TCM practitioner and educator. These commentaries indeed make Dr. Henry C. Lu's translation different from strictly scholarly ones.

A third feature that makes Dr. Henry C. Lu's translation unique is the summary of key concepts in each chapter. For example, chapter 5 starts with,

"The Key Concepts in this Chapter: This chapter covers three essential aspects: first, it applies Yin and Yang to classify all natural phenomena; second, it applies the principle of Yin and Yang to explain human physiology, pathology, and diagnosis; third, it points out the importance of the Five Elements in diagnosis and treatment."⁸

As known to all scholars, TCM classics are difficult both in language and content. Based on his profound study of *Nei Jing* and *Nan Jing*, Dr. Lu outlines the key points of each chapter for readers to help them grasp the main idea, which is especially helpful for beginners or those with little knowledge of TCM. At the same time, Dr. Henry C. Lu's translation does not merely rely on his facility with the two languages, as there is no way to determine the essence of each chapter without a thorough comprehension of the classics and their clinical application. In this context, Dr. Henry C. Lu makes full use of his knowledge in the translation to build a bridge between ancient Chinese wisdom and the world.

4 Overseas TCM practitioners as translators of classics

The above analysis shows that *A Complete Translation of the Yellow Emperor's Classics of Internal Medicine and the Difficult Classic (Nei-Jing and Nan-Jing)* has unique features that serves their purposes. It is, to some extent, a translation typical of those translators whose primary identity is that of a TCM practitioner and educator. It is therefore worthwhile to discuss the common features shared among such translations by overseas TCM practitioners.

4.1 Smooth flow of the translated text

First, one would be impressed by its smooth flow and easy-to-understand content when reading the text of *A Complete Translation of the Yellow Emperor's Classics*

of *Internal Medicine and the Difficult Classic (Nei-Jing and Nan-Jing)*. There is no denying that translating from classical Chinese to modern English is quite challenging. But Dr. Henry C. Lu's words are fluent, expressive, and full of variations. This is, certainly because of his long time living in English-speaking countries and his strong language ability. His free translation strategy contributed significantly as well. As illustrated in the previous example from Chapter 5, Dr. Henry C. Lu does not follow the original Chinese four-characters and four-phrases pattern. Instead, he reconstructs them into one sentence with intertextuality to make it readable in English.

For specific terms, Dr. Henry C. Lu applies the same technique of free translation too. For example, he translated “天癸” into “kidney's energy” instead of explicating it or what the two Chinese characters mean, respectively. Compared with scholarly translations in which “天癸” is provided with a page-long footnote describing all major historical interpretations by TCM physicians,⁹ his approach is direct, simple, and comparatively reasonable. Dr. Henry states “I sincerely hope that the readers of this translation will find it sufficiently interesting and reasonably accurate in the course of their reading,” there are no doubts that such fluent translated text must be sufficiently interesting.

4.2 Making classics practical and applicable

Another common feature that TCM practitioners exemplify when translating TCM classics is that they seek to make traditionally obscure and profound classics more practical and applicable in clinical practice. This is well illustrated by Dr. Henry C. Lu's annotations and commentaries. Translating classical Chinese characters and sentences inherent with varied meaning to convey the content meaningful and useful for clinical treatment rather than making sense philologically is challenging. The statements in brackets, “Translator's Commentary” and “The Key Concepts in this Chapter” all reflect the ways in which he overcomes these challenges. This is not a unique instance. His counterpart Moshing Ni, another translator of *Nei Jing* wrote in his book *The Yellow Emperor's Classic of medicine: a new translation of the Neijing Suwen with commentary* that “This translation, however, was never meant to be a scholarly edition. For that purpose, I am certain that other improvements can be made by expert sinologists. Instead, I have approached this from a clinician's point of view, all the while keeping in mind the criteria of students of traditional Chinese medicine and philosophy as well as those of interested laypersons.”¹⁰ Although Dr. Henry C. Lu never specified that his purpose in translating TCM classics is to aid clinical practice, his translations make it obvious that he did in this way. Therefore, having the role of practitioner means that these translators hold a totally different attitude toward TCM classics than do sinologists and historians, and this attitude further influences their

translation strategies and purposes. It also probably explains why readers who are TCM physicians and students favor the works of these translators, while scholars by contrast appreciate translations by sinologists, which have the advantages of being encyclopedic and useful for research.

4.3 Teaching oriented

A Complete Translation of the Yellow Emperor's Classics of Internal Medicine and the Difficult Classic (Nei-Jing and Nan-Jing) reads: “This translation is dedicated to: WORLDWIDE EDUCATION CENTRE FOR TRADITIONAL CHINESE MEDICINE. An educational institution to serve the Western world in the field of traditional Chinese medicine.”⁸ As shown in the previous example, Dr. Henry C. Lu proudly acknowledges that this translation is specifically designed for TCM education. Thus, his translation primarily aims to equip students with the necessary knowledge from TCM classics. A review by Yang and Chen⁴ notes that “Dr. Henry C. Lu's complete translation of *Nei Jing* is similar to that of teaching materials. Each chapter is preceded by a brief introduction of the content, and each subsection is preceded by the translator's comments on the content of this chapter as a guide for students.”⁴ It also explains why TCM terms are translated in a manner used in clinical communication. For example, “任脉” is translated as “conception meridian,” “五脏” is translated as the “five viscera,” and “邪气” becomes “vicious energies,” which are all expressions frequently used in practice and teaching situation.

This book is not unique in its educational function. Bob Flaws, the translator of *Pi Wei Lun*, did so too. “I have retranslated this important Chinese medical text and added commentaries and case histories in order to make its wisdom more accessible to modern readers and learners,”¹¹ he said. Therefore, serving the purpose of teaching appears to be common among TCM practitioners' translation of classics.

4.4 Many favorable comments but few library collections

An interesting phenomenon regarding translation works by TCM practitioners is that there are many favorable comments online. Not only are they welcomed by readers but they are also highly spoken of. For example, an American reader commented on Amazon about Dr. Lu's book, “I find this to be a great translation of the *Huangdi Neijing*, much more understandable than some translations, but still seems to keep the original meaning and intention.”¹² Such comments may be found in reviews for translations of TCM classics by other practitioners like Dr. Ni Maoshing, acupuncturists Wu Liansheng and Wu Qi. Their translations are very popular among TCM

physicians, practitioners, students, and common readers with zero TCM knowledge.

However, compared with the translations of TCM classics by sinologists such as Professor Paul Unschuld whose translation of *Nei Jing* tops the library collections worldwide, very few of the above are collected by libraries of the world's distinguished universities and academic institutes. It seems that widespread acceptance in academia remains to be seen.

5 Conclusions

Despite the drawbacks, such as its limited presence in few library collections and a lack of rigorous philological examination, Dr. Henry C. Lu's *A Complete Translation of the Yellow Emperor's Classics of Internal Medicine and the Difficult Classic (Nei-Jing and Nan-Jing)* as well as translations of TCM classics by other overseas practitioners deserve attentive study to savor their essence and wisdom. These works undoubtedly promote the spread of TCM around the world, especially in the West, and have made great contributions to the improvement of clinical efficacy beyond China. Meanwhile, as the backbone of overseas TCM education, these translations bring the original TCM tradition closer to those who are interested in learning TCM. In this era of globalization, the achievements made by overseas TCM practitioners such as Dr. Henry C. Lu's translation deserve further exploration.

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Ethical approval

This article does not contain any studies with human or animal subjects performed by either of the authors.

Author contributions

Chen-Xue Jiang drafted and corrected the manuscript; Yin-Quan Wang guided and revised this article. All the authors have read and agreed to the published version of the manuscript.

Conflicts of interest

The authors declare no financial or other conflicts of interest.

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Retrospection and Reflection on the Role of Henry C. Lu as a Traditional Chinese Medicine Writer, Educator, and Translator

Xiao-Li Li[✉], Li-An Ma, Qing Wu

Abstract

This paper respectfully commemorates the life of Dr. Henry C. Lu (1936–2022), who was the founding president of International College of Traditional Chinese Medicine of Vancouver. Dr. Lu was an active educator, a prolific writer and translator of traditional Chinese medicine (TCM) in the West and an influential figure during the initial stage of the international dissemination of TCM. By comprehensively searching, referencing, and cross-validating the literature, this article reviewed Dr. Lu's major life events, bibliography, and, most importantly, his contribution to TCM education and translation. Dr. Lu should be given more credit for his achievements, and further studies are needed in future.

Keywords: Education; Henry C. Lu; International dissemination; Traditional Chinese medicine; Translation; Translator study

1 Introduction

It is not the first time that someone's death has brought public notice to the life of deceased and it will not be the last. On February 11, 2022, the passing of Dr. Henry C. Lu (September 3, 1936–January 18, 2022)¹ was announced on Chinese social media, and the grievous news soon spread throughout the academic community of traditional Chinese medicine (TCM) translation studies and the World Federation of Chinese Medicine Societies. A memorial article about Dr. Lu was written by Prof. Wang Yinquan (王银泉)² from Nanjing Agricultural University the next day, and a news report by Dr. Chen Yemeng (陈业孟)³ from the New York College of Traditional Chinese Medicine was published on *China Daily* 1 week later.

As the founding president of International College of Traditional Chinese Medicine of Vancouver, which was established in 1986 and renamed as Tzu Chi International College of Traditional Chinese Medicine in 2016, Dr. Lu did not receive much public notice except in a 2015 interview.⁴ As Dr. Lu has a Chinese name,

Lyu Congming (吕聪明), several academic works have listed Henry C. Lu and Lyu Congming as two different people.⁵ This mistake was identified in 2011.⁶ Despite his prolific TCM publications and active contributions to TCM education and legislation in Canada, Dr. Lu remains anonymous in China, which contrasts with his popularity in the West.

We have no personal ties with Dr. Lu (Fig. 1), nor have we ever had the honor of meeting him in person. In 2002, however, the first author of this paper was assigned as an interpreter for some of his students who were on a summer camp internship tour, including a visit to Dongzhimen Hospital, an affiliated hospital of Beijing University of Chinese Medicine. Dr. Lu's students impressed their Chinese teachers with their good mastery of TCM fundamentals and eagerness to improve their clinical efficacy. As Dr. Lu stated in an interview, efficacy is the only criterion of supporting evidence for TCM.⁴ We discovered fascinating details when we reviewed his bibliography, such as his great works as a TCM educator and translator. We should have given Dr. Lu more credit for his achievements.

2 Dr. Lu's TCM journey

Dr. Henry C. Lu was born and raised in Taiwan, China. After completing his undergraduate studies in Taipei, he went to University of Hawaii in the United States, where he received his master's degree. He later received his doctor's degree from University of Alberta in Edmonton, Canada. His initial research interest was education, as shown by several early publications focused on John Dewey (Note 1). Between 1968 and 1971, Dr. Lu taught for a few years at University of Alberta and University of Calgary. He started practicing TCM since 1972. In 1986, he founded International College of Traditional Chinese Medicine of Vancouver,

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Figure 1 Dr. Henry C. Lu's portrait on the book jacket of *A Complete Translation of the Yellow Emperor's Classics of Internal Medicine and the Difficult Classic (Nei-Jing and Nan-Jing)* by Dr. Henry C. Lu in 2004⁷

which was later donated to the Tzu Chi Foundation in December 2015 and became Tzu Chi International College of Traditional Chinese Medicine. Dr. Lu passed away on January 18, 2022.

Dr. Lu turned his attention to TCM when a Chinese herbalist in Taiwan miraculously cured his long-term ill health. There is no record of how and when he began to study TCM prior to 1972, the year when he started his practice. Nevertheless, we can infer that it took Dr. Lu at least 10 years (Note 2) to commit himself to a new profession and he had dedicated the rest of his life to TCM education and translations. In the interview article, Dr. Lu commented that:

“Upon my arrival in Honolulu, I was anxious to consult American doctors for my problems. However, I did not expect them to give me the same treatments as I had been given in Taiwan, the same laxatives that caused pain to my intestines. All in all, I was very disappointed. It made me realize that the use of laxatives in Western medicine to treat all types of constipation was a typical symptomatic treatment. Other solutions suggested to me included fruits, diet, and exercises, none of which helped me. My chronic constipation and constant nasal discharge were causing me extreme fatigue. Later on, I went back to Taiwan to visit my relatives and I had the chance to consult a Chinese herbalist. He gave me an herbal formula to take. I began to feel very energetic within a few days, which impressed me a great deal.”⁴

The chances are that few, if any, patients would take the initiative to learn and practice TCM after being cured by Chinese herbal medicine. Undoubtedly, Dr. Lu was one of these few people. Since then, he has dedicated his life to learning, teaching, and practicing TCM. Translating TCM books was only a means to an end, that is, making the vast volume of TCM books in Chinese available to English readers, although it was only “a drop in the bucket.”⁴

3 What did Dr. Lu achieve?

3.1 TCM education

Dr. Lu is best known for teaching TCM at International College of Traditional Chinese Medicine of Vancouver,

which he established in Vancouver and Victoria, British Columbia, Canada when he was 50 years old. The college offered a 3-year doctorate program in TCM. As the president of the college since its establishment, Dr. Lu taught TCM both in person and via correspondence. His students came from many countries, including the United States, Canada, United Kingdom, Australia, Sweden, Italy, Germany, France, New Zealand, Switzerland, Mexico, and Japan. Thus, Dr. Lu played an active role in teaching TCM in the West and in developing the college's accredited curricula.

It is easy to appreciate the great efforts that Dr. Lu put into his daily activities to keep the college running for over 30 years. Dr. Lu was not from a family with a prestigious TCM background. He was merely a former patient who had experienced the miraculous effect of TCM, and then devoted his life to a learner, practitioner, educator, scholar, and translator of TCM. Based on his educational research background, Dr. Lu endeavored to follow his passions and commitment for TCM. Although he had never published any research papers on TCM, Dr. Lu had written or compiled a large number of English literature related to TCM education by the time of his death.

3.2 TCM legislation in Canada

As part of his active involvement in the legislation of TCM in British Columbia, Dr. Lu was a member of the Executive Board of Canadian Natural Health Products. He maintained close contact with TCM communities in China and Japan. In 1999, the Province of British Columbia appointed Dr. Lu to the Board of the College of Traditional Chinese Medicine Practitioners and Acupuncturists of British Columbia. In 2003, the Government of Canada also appointed Dr. Lu to the Expert Advisory Committee for Natural Health Products.

Through Dr. Lu and his colleagues' great efforts, the Government of British Columbia recognized TCM practitioners and acupuncturists as health-care professionals. Following the 1996 Health Professions Act of British Columbia, the College of Acupuncturists was established to regulate the practice of acupuncture in British Columbia, Canada. The college later expanded to include TCM herbal practitioners in 1999, and changed its name to the College of Traditional Chinese Medicine Practitioners and Acupuncturists of British Columbia.

3.3 TCM publications

It is unknown how many books have been published by Dr. Henry Lu (Fig. 2). Four webpages and 64 books are listed on Amazon,² among which the highest rated books are those written for the general public. A 2005 interview with Dr. Lu⁴ mentioned that he had translated



Figure 2 Dr. Henry C. Lu's publications on traditional Chinese medicine⁸

and published more than 30 books on TCM, which was certainly a modest underestimate.

According to Amazon, WorldCat, GetTextbooks, Google Books, and Goodreads, Dr. Lu wrote or compiled over 100 books or textbooks, among which 88 books have individual ISBN codes and two lack information. These books can be classified into three categories: translated TCM classics, compiled basic or clinical textbooks, and Chinese language learning materials in the TCM context. For detailed information, please refer to bibliography (see Supplementary Information).

In 1960, Dr. Lu published his first book on TCM, the *Tongue Diagnosis in Color*,⁹ which was later expanded and reprinted in 1980 as *The Chinese Classics of Tongue Diagnosis in Color: With Traditional and Modern Commentary*.¹⁰ This book was probably published during the period when Dr. Lu was studying for his doctor's degree, or in the early years when he just started to study TCM. It contains a partial translation of *Shanghan Shejian* (《伤寒舌鉴》 *Tongue Inspection in Cold Damage*) because Dr. Lu translated the diagnosis section, but did not include the treatment section. Although Dr. Lu made quite a few mistakes, it was an excellent effort (Note 3) in that era.

However, Dr. Lu is most famous for his book *A Complete Translation of the Yellow Emperor's Classics of Internal Medicine and the Difficult Classic (Nei-Jing and Nan-Jing)*, which contains a complete Chinese-to-English translation of *Nei Jing* (《内经》 *The Inner Classic*). *Nei Jing* is esteemed as a classic Chinese medical bible, which not only inspired the development of TCM but is also highly regarded by Chinese physicians. *Nei Jing* consists of two parts, namely *Su Wen* (《素问》 *Basic Questions*) and *Ling Shu* (《灵枢》 *Spiritual Pivot*), each containing 81 chapters with a total of over 156,000 Chinese characters. In 1973, Dr. Lu published his English translation of *Ling Shu*, *The Yellow Emperor's Book of Acupuncture* (Fig. 3). In 1978, he eventually published the impressively huge book, *A Complete Translation of the Yellow Emperor's Classics of Internal Medicine and the Difficult Classic (Nei-Jing and Nan-Jing)* (Fig. 4), which was later

republished in 2004. This book was considered “easy to read,” “informative,” “much more understandable than some other translations,” and a “great” book.¹¹ Dr. Lu's translation of *Nei Jing* was influential in the West because it was the first complete translation in a textbook format for those who wished to read the Chinese classic.

Nineteen scholars (Note 4) attempted to translate *Nei Jing*, but only six completed both *Su Wen* and *Ling Shu*. They are Dr. Lu (1973, 1978, 2004),^{7,12,13} Wu Liansheng (吴连胜) and Wu Qi (吴奇) (1997),¹⁴ Li Zhaoguo (李照国) (2005, 2008),^{15,16} Paul Unschuld (2003, 2011, 2016),¹⁷⁻¹⁹ and Yang Mingshan (杨明山) (2015, 2019)^{20,21} (Note 5).²² Of these translators, only Dr. Lu,¹³ Unschuld,²³ and Li¹⁶ translated both *Nei Jing* and *Nan Jing* (《难经》 *The Classic of Difficult Issues*). In the history of translation of TCM literature, Prof. Unschuld was mistaken as the first person who translated *Nan Jing* in 1986.²⁴ However, Dr. Lu's 1978 version was 8 years earlier than Unschuld's version. In addition, Dr. Lu may be the only person who has translated the three TCM classics of *Nei Jing*, *Nan Jing*, and *Mai Jing* (《脉经》 *The Pulse Classic*).

4 How were Dr. Lu's books rated?

Most of Dr. Lu's books were published between 1990 and 2005. We searched the Amazon and Goodreads websites for readers' ratings and reviews. Dr. Lu's most highly rated books are listed below in descending order: *Chinese Natural Cures: Methods and Philosophies for Remedy of Ailments and Diseases* (2006), *Chinese System of Food Cures: Prevention & Remedies* (1986), *Chinese Natural Cures: Traditional Methods for Remedies and Preventions* (1999), *Traditional Chinese Medicine: How to Maintain Your Health and Treat Illness* (2005), *Chinese Foods for Longevity: The Art of Long Life* (1990), *Chinese Herbs With Common Foods: Recipes for Health and Healing* (1998), *Chinese System of Natural Cures* (1994), and *Chinese System of Foods for Health & Healing* (1999) (see Table S1 for more detailed information).

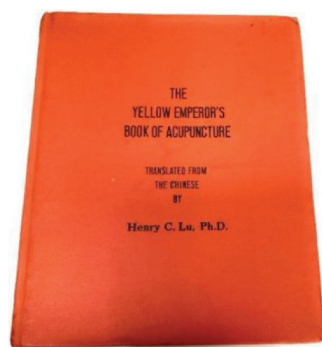


Figure 3 Book cover for the 1973 edition of *The Yellow Emperor's Book of Acupuncture*¹²

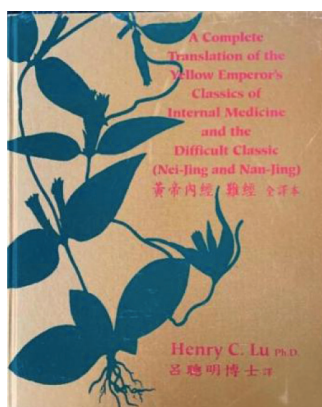


Figure 4 Book cover for *A Complete Translation of the Yellow Emperor's Classics of Internal Medicine and the Difficult Classic (Nei-Jing and Nan-Jing)*⁷

Except for Dr. Lu's early works, most of his later books had few ratings or reviews. As Amazon was founded on July 5, 1994, we can reasonably consider that Dr. Lu's highly rated books were most published in the 1990s. During the 21st century, English books on TCM have experienced a publishing boom. Other prolific contemporary authors gained great attention. Among them are Giovanni Maciocia, Bob Flaws, Harriet Beinfeld, Ted J. Kaptchuk, Dan Bensky, and Nigel Wiseman.

Dr. Lu's most highly rated books were clearly intended for the general public to help them gain a better understanding of TCM. His focus is mainly on the use of TCM herbs and foods, especially how they are related to health preservation, disease treatment and prevention, and longevity. The reviews are generally favorable. For example, his books are "informative," "comprehensive," "thorough," and "valuable." However, some reviewers have less favorable and even paradoxical comments, such as the books were "easy to understand," whereas others thought it was "hard to follow." Other reviewers comment on the subpar format of his works, including small font size, confusing indexes, and poor organization of content (Note 6).

In his translations of TCM books, Dr. Lu expressed prudent ideas on how proper TCM translations should be done. However, only a brief description of his thoughts can be found in the introduction section of his book *A Complete Translation of the Yellow Emperor's Classics of Internal Medicine and the Difficult Classic (Nei-Jing and Nan-Jing)*,¹³ which demonstrated his clear focus on consistency and conformity to TCM theories:

"The translation of the Chinese text is conventional in that it follows the conventional interpretation of the original Chinese text already established in the course of Chinese history; in case of ambiguities of the text or disagreements among the Chinese scholars, however, two principles are followed in translating the text which include the principle of consistency throughout the text and conformity to the modern theory of Chinese medicine."

Dr. Lu's *Terminology of Traditional Chinese Medicine* (2013) contains 1630 terms divided into nine categories. The book's sober and plain design does not reveal any details of its contents. In addition, the book does not include a forward or translator's note. However, Dr. Lu faithfully translated every term and used these terms consistently in his translation. In addition, his choice of terms is likely to be based on clinical practice and relevancy. For example, in chapter 7, *Diagnostics*, the terms related to pulse-taking were not limited to the 28 pulse conditions only (Note 7). Dr. Lu also translated and explained the correct procedure of pulse diagnosis. Furthermore, he used distal pulse, middle pulse, and proximal pulse to refer to the three positions (*cun* 寸, *guan* 关, and *chi* 尺) of pulse-taking, respectively. TCM practitioners and students find Dr. Lu's version to be both faithful and easy to understand. Table 1 lists the 28 pulse conditions translated by Dr. Lu in his 2013 edition of the *Terminology of Traditional Chinese Medicine*. His choice of English terms is worthy of further analysis and comparison. However, a general impression is that his translation style is more practical, aiming at clinical applications and easy understanding while faithfully conforming to their underlying concepts.

The *Terminology of Traditional Chinese Medicine* received no online rating. As one of its first reviewers, we would rate it as "useful" and "valuable" despite its plain appearance. Every entry contains the pinyin name with tones. An English translation and the corresponding Chinese characters are provided, followed by a detailed explanation to facilitate understanding of the term. It is undoubtedly a helpful reference book for TCM college teachers and students.

5 Conclusion

Dr. Henry C. Lu was a great educator and prolific translator, and a good example to be followed in the TCM

Table 1 Twenty-eight pulse types translated by Dr. Lu in *Terminology of Traditional Chinese Medicine*²⁵

Term codes	Pulse terms (pinyin)	Pulse terms (Chinese)	English terms
7.137	<i>Fu Mai</i>	浮脉	Superficial pulse
7.138	<i>Chen Mai</i>	沉脉	Deep pulse
7.139	<i>Chi Mai</i>	迟脉	Slow pulse
7.140	<i>Shuo Mai</i>	数脉	Rapid pulse
7.141	<i>Hua Mai</i>	滑脉	Sliding pulse
7.142	<i>Se Mai</i>	涩脉	Retarded pulse
7.143	<i>Xu Mai</i>	虚脉	Deficiency pulse
7.144	<i>Shi Mai</i>	实脉	Excess pulse
7.145	<i>Chang Mai</i>	长脉	Long pulse
7.146	<i>Duan Mai</i>	短脉	Short pulse
7.147	<i>Wei Mai</i>	微脉	Disappearing pulse
7.148	<i>Hong Mai</i>	洪脉	Big or flooding pulse
7.149	<i>Jin Mai</i>	紧脉	Tight pulse
7.150	<i>Huan Mai</i>	缓脉	Relaxed pulse
7.151	<i>Xian Mai</i>	弦脉	Wiry pulse
7.152	<i>Kou Mai</i>	芤脉	Empty pulse
7.153	<i>Ge Mai</i>	革脉	Drumming pulse
7.154	<i>Lao Mai</i>	牢脉	Persisting pulse
7.155	<i>Ru Mai</i>	濡脉	Soft pulse
7.156	<i>Ruo Mai</i>	弱脉	Weak pulse
7.157	<i>San Mai</i>	散脉	Dispersing pulse
7.158	<i>Xi Mai</i>	细脉	Small pulse
7.159	<i>Fu Mai</i>	伏脉	Hidden pulse
7.160	<i>Dong Mai</i>	动脉	Shaking pulse
7.161	<i>Cu Mai</i>	促脉	Quick and irregular pulse
7.162	<i>Jie Mai</i>	结脉	Intermittent pulse
7.163	<i>Dai Mai</i>	代脉	Slowing pulse
7.164	<i>Da Mai</i>	大脉	Large pulse
7.165	<i>Ji Mai</i>	急脉	Hurried pulse

field. He was an influential figure in the early period of spreading TCM knowledge to the West, especially before the late 20th century. His passing was a great loss not only to his family, his colleagues, and friends in Canada, but also to all TCM professionals and patients worldwide. As John Dewey observed, “Education is not an affair of telling and being told, but an active and constructive process.” In essence, Dr. Henry C. Lu’s life was an active and constructive process of disseminating TCM knowledge by providing TCM education internationally.

This paper was written according to sources of indirect information. All information was obtained via open data or free access. Although it was surprisingly difficult to find relevant information about Dr. Henry C. Lu either in English or in Chinese online, we managed to link all the available resources and provide a preliminary sketch of his profile. Further studies should explore his life story, his books, and his thoughts, which could inspire more people.

Notes

Note 1: John Dewey was an American philosopher, psychologist, and educator who was one of the early founders of pragmatism and functional psychology.

Note 2: Prof. Wang Yinquan believes that Dr. Lu studied TCM for 5 years.² However, some quick math (i.e., 1960–1972) shows that Dr. Lu began translating TCM books on tongue diagnosis 12 years before he finally became a TCM practitioner. Hence, Dr. Lu had spent at least 10 years learning TCM before starting his professional practice.

Note 3: Please note that we have not read nor compared these two books. These comments are verbatim quotes from our personal communication with a specialist on tongue diagnosis, Dr. Ioannis Solos, who has studied both books.

Note 4: A recent article⁵ identified 18 English translators of the *Yellow Emperor’s Classics of Inner Medicine* instead of 19, leaving Debra Moorgat not included. She finished her English version *Huangdi Neijing: Ling Shu* (volumes I, II, and III, in 2005, 2008, and 2010, respectively) based on the French version by Nguyen Van Nghi, Tran Viet Dzong, and Christine Recours Nguyen (often referred to as the N.V.N. version) in 1994. Furthermore, the N.V.N. version was also translated into English by Edward S. Garbacz with additional commentary by Sean Christiaan Marshall as a rough draft for students of the Jung Tao School of Classical Chinese Medicine. It is not a freely available publication, thus, the translator is not included as the 20th translator.

Note 5: In 2019,²² the World Scientific Publishing Co. Pte Ltd. published Prof. Yang Mingshan *The Yellow Emperor’s Classic of Medicine – Essential Questions: Translation of Huangdi Neijing Suwen*. This book is probably an updated version of the book published in 2015, *New English Versions of Essential Questions in Yellow Emperor’s Inner Canon*, which contains both *Su Wen* and *Ling Shu*, although the book’s English title suggests the inclusion of only *Su Wen*.

Note 6: According to readers’ reviews, great improvements were made to the 2006 edition of *Chinese Natural Cures: Methods and Philosophies for Remedy of Ailments and Diseases* compared with the 1999 edition of *Chinese Natural Cures: Traditional Methods for Remedies and Preventions*.

Note 7: Examples of such terms are taken from pp. 227–229 of Dr. Lu’s *Terminology of Traditional Chinese Medicine*,²⁵ including lifting (*ju* 举), pressing (*an* 按), pushing (*tui* 推), search (*xun* 寻), singular pressure (*dan-an* 单按), simultaneous pressure (*zong-an* 总按), spreading of fingers (*bu-zhi* 布指), shifting of fingers (*yi-zhi* 移指), initial stage of taking the pulse (*chu-chi* 初持), and prolonged stage of taking the pulse (*jiu-chi* 久持).

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Ethical approval

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Author contributions

Xiao-Li Li conceptualized the framework and wrote the manuscript. Li-An Ma helped searching and sorting the internet information and organized the bibliography. Qing Wu supervised the process and revised the draft. All authors agreed to the contents of the whole manuscript.

Conflicts of interest

The authors declare no financial or other conflicts of interest.

Supplementary information

Supplementary data to this article can be found online at: <http://links.lww.com/CMC/A3>.

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Historical Legacy of Traditional Chinese Medicine Education in Canada: The Case of Henry C. Lu

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Abstract

This article begins with a review of the publications by Dr. Henry C. Lu, a Canadian-Chinese traditional Chinese medicine (TCM) scholar, educator and writer, and founder of a Vancouver-based TCM college. Dr. Lu has translated many TCM classics and written books extensively on TCM education, TCM clinical practice and Mandarin-Chinese grammar. Aside from his widespread prominence as one of the representative English translators of *Huangdi Neijing* (*The Yellow Emperor's Inner Classic*), Dr. Lu is also noted for his pioneering role in the promotion of TCM education in British Columbia, where he lived and worked for more than half of his life. By making references to and drawing lessons from Dr. Lu's four-decade-long efforts to help TCM gain legal status and to promote wider application of TCM in Canada, this article also puts forth suggestions for overseas TCM education and international TCM standards for building a global community with a shared future.

Keywords: Canada; Henry C. Lu; Traditional Chinese medicine; TCM classics; TCM education

1 Dr. Henry C. Lu's profile

Dr. Henry C. Lu of Vancouver, British Columbia, Canada, who passed away on January 18, 2022, was hailed as a scholar, educator, and writer of traditional Chinese medicine (TCM hereafter). He devoted most of his lifetime to the practice and dissemination of TCM through books, translations, and college teaching.

Born on September 3, 1936 and raised in Taiwan, China, Dr. Lu finished his undergraduate studies in Taipei before attending the University of Hawaii of the United States, where he received his master's degree. He earned his PhD in pedagogy from the University of Alberta, Edmonton, Canada. After that, he taught at the University of Alberta and University of Calgary between 1968 and 1971.¹

Dr. Lu encountered TCM during his trip back to Taipei after his graduation. He had chronic constipation and constant nasal discharge since high school. He turned to Western medicine for help but in vain. It was not until

someone suggested that he should see a Chinese herbalist that he sought help from TCM. After 1-month-long TCM treatment, he became energetic. This experience sparked his interest in TCM, and he started to practice TCM in 1972. In that year, James Reston, a member of the US President Nixon's delegation to China, suffered from acute appendicitis and had to undergo appendectomy in Beijing. He was relieved of his post-surgery abdominal distension and discomfort by the Chinese TCM doctors with acupuncture and moxibustion. After that, TCM started to become noticeable in the United States.

In 1986, Dr. Lu founded the Chinese College of Acupuncture and Herbology in Vancouver and Victoria, British Columbia, Canada. The college gained widespread prominence during its three-decade-long operation. It was donated to the Buddhist Compassion Relief Tzu Chi Foundation Canada, or Tzu Chi Canada, an international charity organization dedicated to charity, medicine, education, culture, international relief, and environmental care. In September 2018, the College officially changed its name to Tzu Chi International College of Traditional Chinese Medicine (TCICTCM). As the founding president of Traditional Chinese Medicine Association of British Columbia (TCMABC), Dr. Lu was most notable for his contributing role in making the British Columbia government legalize TCM and acupuncture as recognized healthcare profession.

Dr. Lu has written and translated extensively on TCM classics. He published over 100 books which are widely used in TCM education, TCM clinical practice and Mandarin Chinese learning. He is best known for his English translation of *Huangdi Neijing*

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(《黄帝内经》 *The Yellow Emperor's Inner Classic*) and *Nan Jing* (《难经》 *The Classic of Difficult Issues*). The translations and his numerous other books are recommended by examination committees of acupuncture in many parts of the world.

2 Dr. Lu's contribution to TCM education in Canada

Through four decades of TCM practice, Dr. Lu believed that, "if TCM and acupuncture are to take root in the Western world, it is not enough that they have been practiced: their wisdom must also be spread to North America by means of education."² His education background and working experience qualified him to write books on TCM in English. These books contributed to the widespread promotion of TCM recognition in the West.

2.1 Productive publications

With a view that TCM could be spread through books and documentaries, Dr. Lu embarked on his publication journey. He translated TCM classics introducing TCM philosophy and recording practice of TCM and acupuncture. Dr. Lu wrote and translated over 100 books of different TCM specialties from 1973 to 2018. His books were mostly published by the Academy of Oriental Heritage, Pelanduk Publications, Kodansha Amer Inc, Sterling Publishing Company Inc, Black Dog & Leventhal, Basic Health Publications Inc, International College of Traditional Chinese Medicine of Vancouver and Create Space Independent Publishing Platform. He made extraordinary efforts to design TCM textbooks and reference books for TCM certification examinations for his college. He also wrote books on language learning to help both domestic and international students to better understand the knowledge of TCM.

2.1.1 TCM translation

Dr. Lu gained attention among the translation research scholars in the mainland China due to his translation of *Huangdi Neijing* and *Nan Jing*. His first publication made his way to the readers in 1978. In 2004, he took a step further by re-translating these classics into an 800-page text in a more comprehensive way, incorporating various research findings, annotations, and commentaries made by excellent physicians and scholars.¹ Parts of TCM classics translated by Dr. Lu are listed in Table S1.

2.1.2 TCM textbooks and reference books for examination

While teaching TCM courses, Dr. Lu emphasized the importance of textbooks for the students in his college. He believed that textbooks are the primary sources of information for students who are committed to become TCM practitioners. Students cannot learn the subject

matter without textbooks and thus they need to select a textbook that caters to their needs. A textbook is therefore a theoretical work sufficiently detailed and necessarily complicated to provide an adequate amount of knowledge to the readers.³ To ensure high-quality TCM education, Dr. Lu started to compile a series of textbooks from 1973 to 2017 for students registering in his college. He took the trouble to write an English book, the *Study Guide for Traditional Chinese Medicine and Acupuncture Students*, for students preparing to become a practitioner of TCM or acupuncture.

With the legislation of recognizing acupuncture and TCM as healthcare professions in provinces in Canada, the authorities launched a system of occupational competency examination on TCM, requiring qualified doctors to pass the examination before registering in the respective College of provinces (in Canadian English, "college" means not only an educational institutions, but also a regulatory body). Books for the examination should be significantly practical and useful for students to pass the exam. In this regard, Dr. Lu compiled *A Question Bank of Acupuncture*, which included over 3,000 test questions, *Simulated 3,200 Licensing Examination Questions with Answers in Acupuncture*, and *A Comprehensive Review of Chinese Herbal Therapy for Licensing Examinations*, which is a profoundly comprehensive question bank on the Chinese herbal therapy. Designed for the qualification examination, these books also provide introduction to many innovative ideas and comprehensive review to help the students embark on a smooth professional journey through the entire program. A total of 13 textbooks and books are designed for the examination (Table S2).

2.1.3 Language learning books

During his TCM practice, Dr. Lu found that there were more non-Mandarin-speaking patients seeking help from TCM treatment. His success in TCM education also attracted more English-speaking Canadian students to enter his college, in addition to the Mandarin-speaking Chinese Canadians. Backed up by his education background in pedagogy, he published a number of books on language learning (Table S3), both in English for students of the Chinese immigrants and in Chinese Mandarin for the western learners. His language books in English cover English grammar and many other subjects, which become a guide to Chinese learners who wish to learn English as a second language. His language books in Chinese cover Mandarin pronunciation, speaking, reading, and Chinese characters to help non-Chinese-speaking students learning Chinese. With good mastery of language, people who speak Chinese can better express the ideas of TCM in English and people who speak English can better understand TCM knowledge, and even read the original TCM classics in Chinese.

2.1.4 TCM practice

Dr. Lu was also a licensed TCM practitioner. Dr. Lu was once interviewed on the topic of TCM, including its role in today's health care and his ideas on how TCM and Western medicine can work together.⁴ With the increasing prevalence of TCM among Canadians, he realized that it became more important for medical students, physicians, and other health care professionals to be better informed on TCM to effectively interview patients, assess potential drugs, interact with patients during the treatment, and provide evidence-based recommendations.⁵ With rich experience in his TCM clinical practice, Dr. Lu explained TCM in traditional way and modern scientific approaches. He published many TCM practice-related works (Table S4), including fundamental introductions to TCM philosophies, diagnosis, acupuncture, herbology, Chinese medicine formulas, clinical case report, and food therapy. These wide varieties of English books serve as a bridge for western students to learn both original and advanced TCM in their own languages.

2.2 Establishment of International College of Traditional Chinese Medicine

During his course of practice, Dr. Lu mooted the concept to launch a TCM college to provide training programs in a bid to promote TCM on a wider scale. In 1986, he founded the Chinese College of Acupuncture and Herbology in Vancouver and Victoria, British Columbia. The college was renamed as the International College of Traditional Chinese Medicine in 1988 (Fig. 1).⁶ One year later, the college established its first proper campus at the East Hastings Street in Vancouver's Chinatown. It then moved to 1847 West Broadway in 1991. To operate efficiently, the Vancouver campus was separated in 1995 and began independently operating under the name of International College of Traditional Chinese Medicine of Vancouver. The college moved to 201-1508 West Broadway 3 years later. The college opened a new site in 2015 on 200-1215 West Broadway for the purpose of teaching and administration.



Figure 1 Celebration of faculty members of International College of Traditional Chinese Medicine⁶

Since 2011, Dr. Lu had expressed his will to donate the college to the Buddhist Compassion Relief Tzu Chi Foundation Canada, or Tzu Chi Canada for better management and development. The foundation is an international charity organization dedicated for charity, medicine, education, culture, international relief, and environmental care. It has donated funds to the college since 1992 and Dr. Lu and his wife were its members. On December 31, 2015, at the age of nearly 80, Dr. Lu officially donated the college. On May 5, 2016, Dr. Lu personally handed over the tablet symbolizing the International College of Traditional Chinese Medicine of Vancouver to the foundation on a celebration ceremony. The college officially changed its name to TCICTCM in September 2018, but its website retained the former name until the end of 2018 (Fig. 2).⁶

During three decades of managing the college, Dr. Lu took the lead in formulating its own series of textbooks and developing accredited curriculum to guarantee the quality of TCM education. Since 1986, the college has trained a vast number of Canadian students as well as international students from over 30 countries and regions, thus making the college as one of the biggest TCM colleges with the longest history in Canada. In 2016, the college had over 40 faculties and about 140 students, of which 90% was local and 10% was international students. Dr. Lu made unremitting efforts to promote the popularization of TCM in the West. The college now provides diploma programs, exceeding minimum requirements of British Columbia. The college also offers certificate program for students who wish to acquire skills and get into the healthcare profession within a relatively short period of time. The credits earned in the Tui Na certificate program can be transferred to the diploma programs if a student continues his study. The certificate program, therefore, has served as a stepping-stone for many students aiming at the college's diploma programs. The TCICTCM's courses are listed in Table S5.⁷

3 TCM education in Canada

Dr. Lu has been involved in the legislation for TCM in British Columbia.⁴ As the founding president of TCMABC, Dr. Lu and his fellow TCM practitioners succeeded in lobbying the British Columbia government to recognize and legalize TCM and acupuncture as a healthcare profession.

Dr. Lu's entire lifetime is, in part, a reflection of the history of TCM education in Canada. His dedication and contribution, as well as the continuous efforts and involvement of his students, have shaped the current TCM education system in Canada.

3.1 Legislation of TCM in Canada

Canada is a multicultural country with many ethnics and immigrants from all over the world. The history



Figure 2 Change of the college name in the official website⁶

of TCM started with the significant immigration of Chinese workers during the gold rush and the development of the Canadian Pacific Railway in the 1880s.⁸ During the initial period, TCM was only available within the Chinese community, but later became more popular with Canadians. Since acupuncture was legislated in Quebec, Canada in 1973,⁹ four other provinces have subsequently legislated TCM as a recognized health profession. The provinces which legalized TCM are Alberta in 1988,¹⁰ British Columbia in 2000,¹¹ Ontario in 2006,¹² and Newfoundland and Labrador in 2012.¹³ Colleges of TCM in the five provinces are, namely, Ordre des Acupuncteurs du Québec, College of Traditional Chinese Medicine Practitioners +Acupuncturists of British Columbia (CTCMA), The College of Acupuncturists of Alberta, College of Traditional Chinese Medicine Practitioners and Acupuncturists of Ontario, and The College of Traditional Chinese Medicine Practitioners and Acupuncturists of Newfoundland and Labrador. These colleges regulate TCM practices in their province, that is, codes of ethics and professional practice standards have been formulated by each provincial college.

3.2 Development procedures of TCM education

The Canadian College Acupuncture and Oriental Medicine was founded in 1985. It was the first college legally registered for TCM education in British Columbia, Canada.¹⁴ Unfortunately, this college was closed in 2011,¹⁵ leaving behind a few numbers of other colleges or schools offering clinical training for TCM and acupuncture through personal mentoring. Personal mentoring was a common TCM phenomenon until the early 1990s evident by the opening of a branch TCM clinic by the offspring of early Chinese

immigrants who engaged in TCM practice. From the mid-1990s, with a rapid increase in the number of TCM acupuncture and moxibustion schools, Canada witnessed the establishment of about 50 TCM and acupuncture colleges.¹⁵

At the beginning of the 21st century, the Canadian governments issued the Private Career Colleges Act 2005 to supervise the TCM and acupuncture practice. This has resulted in the declining number of TCM colleges.

As TCM became legalized in Canada, the educational system on TCM or acupuncture went under provincial regulation as mentioned above. The five provincial regulatory bodies, who govern individuals who practice TCM or acupuncture and regulate the use of titles, have formed a national organization named the Canadian Alliance of Regulatory Bodies of Traditional Chinese Medicine Practitioners and Acupuncturists (CARB-TCMPA).

CARB-TCMPA is responsible for administering the Pan-Canadian Entry-level Examinations in TCM and Acupuncture (the “Pan-Canadian Examinations”) to assess whether an examinee acquires occupational competencies of entry-level TCM profession. Successful completion of the Pan-Canadian Examinations is one of the requirements imposed by provincial regulators for registering as a TCM practitioner, acupuncturist, or TCM herbalist.¹⁶ The Pan-Canadian Examinations offer examinations in English. In Quebec and Ontario, the examinee can also choose French on request. In British Columbia, the examinations are also offered simplified Chinese and traditional Chinese in addition to English.

Meanwhile, the Federation of Colleges of Traditional Chinese Medicine of Canada is founded in 2008. It is instituted with eight TCM colleges as the national voice of TCM education across Canada.

The aim of the federation is to promote professionalism, standardization, and high-quality education of TCM and acupuncture.¹⁷ The federation issued *National Standard for The Training Acupuncturists, TCM Practitioners, and Doctors of TCM*,¹⁸ to strive for quality improvement in education, research, and service through the full participation of its member colleges and their collaboration.

TCM education in Canada has become legalized since the implementation of the above regulations and acts, with a collaboration supervision and guidance from governments of different provinces and TCM associations.

3.3 Present status of TCM and acupuncture education in Canada

Colleges, schools, institutes, or academies of TCM and acupuncture in Canada are mainly privately funded with varying scales depending on the campus site, legislation, density of population, fund, faculty, and acceptance of TCM by the locals. The bigger ones often possess 100 to 150 students; the mid-sized ones tend to have 50 to 80 students, while the smaller ones admit about 20 to 40 students.¹⁵

Diploma programs are offered for acupuncturists, TCM practitioners, TCM herbalists, and Doctors of TCM (Dr. TCM) and certificate programs are also available in Canada. No college provides degree education in TCM independently, but a few colleges would offer training programs for doctorate degree by cooperating with TCM universities in China. The certificated TCM doctors shall have a continuing competency program (CCP) to achieve high practice standards. They should ensure that they are in compliant with the CCP requirements and keep a record of their activities over the year for annual reports.

Due to provincial regulation on TCM or acupuncture, TCM education varies in the five provinces where TCM or acupuncture are legalized. Take British Columbia, where Henry Lu worked and lived for the most part of his life, as an example, acupuncture has been a legitimate health profession in British Columbia since 1996, and a TCM practitioner has been a legitimate health profession since 2000. According to statistics from 2021 to 2022 Annual Report,¹⁹ there are a total of 2,373 renewed registrations at the start of the 2021–2022 Registration Year in British Columbia. Among them, 1,417 practicing registrants obtained education in British Columbia. Education and examination committee in CTCMA is responsible for determining eligibility of examinations and reviewing education programs for compliance with entry-to-practice standards. From 2016, schools offering TCM and acupuncture education programs in British Columbia are evaluated by the Education

Program Review developed by CTCMA with the minimum requirements for each program (Table S6).²⁰ The review will be performed based on the program length, program structure, learning outcomes, and student clinical practice. Schools whose programs meet the requirements and their recognized education/training programs are listed in CTCMA Bylaws (effective August 20, 2020) (Table 1).²⁰

Currently, Pan-Canadian standards for education programs are under development, and corresponding accreditation with these standards is planned to evaluate and guarantee the quality and safety of TCM and acupuncture education. The standards represent the general requirement for competency-based learning outcomes. The accreditation standards are divided into nine sections, including leadership, program operations, students service and support, human resources, curriculum, clinics and laboratories, student assessment, and program evaluation.²¹ These rigorous standards and comprehensive accreditation process will ensure that a TCM or acupuncture program that can offer a professional curriculum to students in Canada is available from the provincial colleges under the supportive environment.

3.4 Challenges in TCM education in Canada

TCM is still regarded as a form of traditional medicine rather than a branch of the mainstream medicine in Canada. With a limited number of patients seeking TCM and acupuncture treatment, the clinics of each college are the venues where all the TCM trainees go for internship. This has caused overcrowding in the clinics. The clinics are also less ideal for clinical training due to narrow case range.

Overseas TCM education is of crucial importance for the international recognition of TCM's role in safeguarding human health. However, the absence of unified policies for TCM education in Canada has obliged each province to devise its own regulations and rules. Moreover, most colleges cannot offer degree programs. They are allowed to provide no more than a diploma certifying the successful completion of a course. Thus, the quality of TCM education varies from college to college and from province to province, depending on factors such as the number and the quality of teachers, quality of internship, and quality of textbooks. These factors are not considered in the registration requirement for the practice of TCM and acupuncture. Although these factors are now considered in the accreditation standards of education program, there is still a long way before the accreditation is implemented. For now, the standards only focus on the quality of education programs without considering how to regulate TCM institutions.

Table 1 Recognized TCM and acupuncture education/training programs²¹

1. PCU College of Holistic Medicine 220-5021 Kingsway Burnaby, BC
<ul style="list-style-type: none">• Registered Acupuncturist• Registered Traditional Chinese Medicine Herbalist• Registered Traditional Chinese Medicine Practitioner• Doctor of Traditional Chinese Medicine
2. Tzu Chi International College of Traditional Chinese Medicine #200-1215 West Broadway Vancouver, BC
<ul style="list-style-type: none">• Registered Acupuncturist• Registered Traditional Chinese Medicine Herbalist• Registered Traditional Chinese Medicine Practitioner• Doctor of Traditional Chinese Medicine
3. Vancouver Beijing College of Chinese Medicine 3135-8888 Odlin Crescent Richmond, BC
<ul style="list-style-type: none">• Registered Acupuncturist• Registered Traditional Chinese Medicine Herbalist• Registered Traditional Chinese Medicine Practitioner• Doctor of Traditional Chinese Medicine
4. Pacific Rim College 229-560 Johnson Street Victoria, BC
<ul style="list-style-type: none">• Registered Acupuncturist• Registered Traditional Chinese Medicine Herbalist• Registered Traditional Chinese Medicine Practitioner• Doctor of Traditional Chinese Medicine
5. Kootenay Columbia College of Integrative Health Sciences Suite 2-560 Baker Street Nelson, BC
<ul style="list-style-type: none">• Registered Acupuncturist• Registered Traditional Chinese Medicine Herbalist• Registered Traditional Chinese Medicine Practitioner• Doctor of Traditional Chinese Medicine
6. Oshio College of Acupuncture and Herbology 100-3491 Saanich Road Victoria, BC
<ul style="list-style-type: none">• Registered Acupuncturist• Registered Traditional Chinese Medicine Herbalist• Registered Traditional Chinese Medicine Practitioner• Doctor of Traditional Chinese Medicine
7. Central College 200-60 8th Street New Westminster, BC
<ul style="list-style-type: none">• Registered Acupuncturist• Registered Traditional Chinese Medicine Herbalist• Registered Traditional Chinese Medicine Practitioner
8. Kwantlen Polytechnic University 8771 Lansdowne Road Richmond, BC
<ul style="list-style-type: none">• Registered Acupuncturist

TCM: traditional Chinese medicine.

In addition, internationally trained practitioners are accepted for registering as a certified TCM practitioner in Canada. This has caused growing popularity for more Canadians to complete their studies or training at TCM universities in mainland China or China's Taiwan province. These factors have complicated the prospects of developing localized TCM education in Canada.

4 Suggestions for overseas TCM education

4.1 Devising international standards in TCM education

Standards are the basis of excellence. Independent third-party accreditation, an assessment to determine on what extent a program meets the recognized standards, is the implementation of the standards. Dr. Lu became aware of the significance of standards. Thus, he compiled textbooks and developed curriculum for his college at an incredibly early age. Additionally, Canada's experience on setting accreditation standards for TCM education programs is a good example for other countries to learn from.

Canada is taking the lead in the global TCM education by drafting standards for TCM education. It is now more imperative for other countries to co-develop a series of international standards evaluating the quality of TCM education and the safety of TCM internship. It is a task to promote TCM education around the globe. International standards are the lingua franca for the international community to carry out exchanges and cooperations on issues concerning the application and promotion of TCM. The influence of TCM worldwide will be strengthened by a joint work through formulating international TCM standards on practitioners, education programs, and schools to improving the quality of TCM education.

In view of the varying cultures, laws, regulations, and habits of people, education standards shall be established to set the minimum requirements of an educational program so as to ensure that the knowledge and skills of TCM are properly passed down to the next generations. Standards on institutions, teaching plans, textbooks, internship process, and basic requirements of clinics shall be formulated to support an all-round development of overseas TCM education. The World Federation of Chinese Medicine Society has issued *SCM 3-2009 World Standard of Chinese Medicine Undergraduate (Pre-CMD) Education* and *SCM 15-2015 The International Catalogue of Chinese Medicine discipline*, to regulate the development of overseas TCM education. Proper international accreditation in the TCM education shall be explored to make these standards materialized. In addition, it is a matter of concern to fully accept advice and suggestions from overseas TCM educational institutions and regularly revise the documents to timely update and perfect the standards so that the TCM international development is sustainable.

4.2 Promoting international exchanges and communications in TCM education

The current international development of TCM is facing a critical period of strategic challenges, in particular the

restrictions in international travel caused by the COVID-19 pandemic. However, through innovative approaches, the World Health Organization, the United Nations Educational, Scientific and Cultural Organization, and other international organizations can play a role in promoting communications and cooperation among international organizations to help TCM make greater contributions to global health. Meanwhile, full cooperation is to be given to the international non-government organizations which provide TCM consulting services to assist local governments in public health and other social work.

Additionally, it is of great pertinence to strengthen collaborations between TCM universities and institutions in China, and renowned universities and institutions in other parts of the world on short-term training, clinical internship, academic education, vocational education, and continuing education.

4.3 Cultivating international inter-disciplinary talents

Dr. Lu is an example illustrating a talented TCM practitioner who made brilliant influence on TCM education globally. His case demonstrated that promoting the internationalization, inheritance and innovation of TCM in other countries worldwide depends highly on talents who has good mastery of TCM philosophy and expertise, proficient practice, and good communication skills in multiple languages. China should also strengthen the construction of multi-level teams of multi-disciplinary TCM talents and develop a systematic planning on cultivating TCM talents. This will help ensure that TCM philosophy, TCM academic expertise and practical experience are passed down from famous and renowned TCM experts to younger generations.

5 Conclusion

TCM embodies profound philosophy and wisdom of Chinese people, and it plays a fundamental role in the protection of human health through thousands of years of development. By reviewing Dr. Henry C. Lu's life-long contribution to the international recognition of TCM and acupuncture, the authors believe that it is advisable for China to devise a national plan to promote overseas TCM education by setting up institutions and academies responsible for the practice of TCM all over the world for safeguarding human health. With the growing popularity of TCM in many countries, it is also important to follow the success stories of the early generations of overseas Chinese TCM practitioners who made a living by opening TCM clinics, with Dr. Henry C. Lu being a typical example. By contributing due importance to the prevention, control and treatment of the COVID-19 pandemic around

the world, TCM is expected to further play a more prominent role in public health, with more and more countries recognizing and legalizing the status of TCM practice and acupuncture in the future.

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Author contributions

Li-Wen Yang undertook the tasks of conceptualization, methodology, resource collection, investigation, writing and revision. Rong-Man Jia undertook the tasks of resource collection and revision. Li-Li Wang undertook the tasks of resource collection and supervision.

Conflicts of interest

The authors declare no financial or other conflicts of interest.

Supplementary information

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Transmission of Ancient Chinese Forensic Medicine in the West: The View from *Xiyuan Jilu* (*Records for Vindication*)

Li Yin[✉]

Abstract

Chinese forensic medicine has a long and brilliant history, and the forensic knowledge in ancient China represents the world's highest medicolegal level at the time. Among all extant essays and works on China's early medical jurisprudence, *Xiyuan Jilu* (*Records for Vindication*) written by Song Ci in 1247 CE, during the Southern Song dynasty, is the oldest text on legal medicine in the world. Subsequently, this work went through successive editions and expansions. The book was not simply a manual providing instruction on conducting inquests; it also established standards for all judicial practices in ancient China. From the beginning of the 18th century, the earliest existing Yuan edition and subsequent editions of this book were translated. They contributed to the broad dissemination of ancient Chinese forensic culture in the West. By discussing the diffusion of *Xiyuan Jilu* and its corresponding studies in the Western world, this paper intends to expound on the cultural transmission of early Chinese forensic medicine, and reveal its values and impacts on the history and development of legal medicine worldwide to provide an illustrative example of Sino-Western medical and cultural exchange.

Keywords: Chinese forensic medicine; Sino-Western cultural exchange; Translation; Transmission; *Xiyuan Jilu* (*Records for Vindication*)

1 Introduction

Chinese forensic medicine has a long and brilliant history going back thousands of years. The first rudimentary anatomical accounts can be found in the Chinese medical classic *Huangdi Neijing* (*《黄帝内经》 The Yellow Emperor's Inner Classic*),¹ which was the most influential Chinese medical work in existence regarding the subjects of human anatomy, physiology, and the dynamic patterns of interaction between human beings and their surroundings.² The record of wound inspection in some criminal cases appeared early in the *Han Shu* (*《汉书》 The Book of Han*) by Ban Gu (班固 32 CE–92 CE),³ an Eastern Han court official, with the help of his sister Ban Zhao (班昭 around 49 CE–120 CE), which was the first history book presented in a series of biographies format. Detailed descriptions of Chinese

coronial inquest proceedings were recorded in a book titled *Jiannan Yilai Chaoye Zaji* (*《建炎以来朝野杂记》 Miscellaneous Records of Court Officials and Common People since the Chien-Yen Reign Period*) written by Li Xinchuan (李心传 around 1167 CE–1244 CE), a historian in the Southern Song dynasty.³ After that, many remarkable works, namely *Yi Yu Ji* (*《疑狱集》 Collection of Doubtful Criminal Cases or Redressing Wrongs Among the People*) finished by He Ning (和凝 898 CE–955 CE) and his son He Meng (和嶠 951 CE–995 CE) during the period of Five dynasties (907 CE–960 CE), *Zheyu Guijian* [*《折狱龟鉴》 Magic Mirror for Solving (Doubtful Criminal) Cases or Discerning False Accusations*] written by Zheng Ke (郑克) between 1131 CE and 1162 CE and *Tangyin Bishi* (*《棠阴比事》 Parallel Cases from under the Pear-Tree*) printed probably in 1211 CE, made outstanding contributions to the development of Chinese forensic medicine. However, these early Chinese texts did not discuss forensic medicine systematically. It was not until 1247 CE when *Xiyuan Jilu* (*《洗冤集录》 Records for Vindication*) was completed by Song Ci (宋慈 1186–1249) during the Southern Song dynasty that Chinese forensic medicine became a stand-alone subject.

As the world's first scientific monograph on legal medicine, *Xiyuan Jilu* summarizes the preceding experience in corpse investigations before Song Ci's time, embodies the thoughts of attaching great importance to human life, and provides a comprehensive guide in performing judicial inquests. Without a doubt, this work enables us to access corpse examination in premodern

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times and remains the most influential and standard text on ancient forensic science to date. Similar to other Chinese classics, many editions appeared subsequently. The earliest existing edition known to date is the version preserved in the Yuan dynasty, consisting of 53 titled sections in five chapters. It described procedures of corpse investigation, accidental and deliberate causes of injury and/or death, as well as perimortem and postmortem wounds in detail. Aside from being annotated, deleted, edited, or supplemented, Song Ci's text also became the basis of later forensic works in China. *Xiyuan Jilu* is highly valued for its contribution to the development of legal medicine; Song Ci is therefore widely recognized as the Father of World Legal Medicine.⁴ Renowned British historian and sinologist Joseph Needham pointed out that *Xiyuan Jilu* was important because "it was the first systematic treatise on forensic medicine in any civilization."⁵ Over centuries of Sino-Western cultural exchange, this book was introduced and translated into French, Dutch, English, German, and Russian as well as other languages, contributing to the broad dissemination of ancient Chinese forensic culture in the West. Through examining the diffusion and studies of *Xiyuan Jilu* in the West, this article intends to expound on the transmission of early Chinese forensic medicine, and reveal its values and impacts on the development of legal medicine worldwide to provide an illustrative example of Sino-Western medical and cultural exchange.

2 Initial introduction in the 18th century

Much like the way most of the Chinese medicine classics were initially transmitted to the West, *Xiyuan Jilu*'s world travel commenced with the Western missionaries' translation efforts. Dating back to the 18th century, *Xiyuan Jilu* was first translated by French Jesuit missionary Pierre-Martial Cibot (1727–1780), an early pioneer who introduced Chinese forensic medicine to Europe. In 1779, Cibot published a French article under the title *Notice du livre chinois Si-yuen* (*Notice of the Chinese book Xi Yuan Lu*) in vol. IV of *Mémoires concernant l'histoire, les sciences, les arts, les mœurs, les usages, &c. des Chinois: par les missionnaires de Pékin* (*Memoirs Concerning the History, Sciences, Arts, Customs, Usages, etc. of the Chinese: By the Missionaries in Beijing*, abbreviated to the *Mémoires* in this article) (Fig. 1).⁶ The *Mémoires* was a collection of Jesuit missionaries' notes, observations, and writings on Chinese history and literature. It was the primary source of information for Europeans to learn about China at the time. In this article, Cibot introduced the main contents of *Xiyuan Jilu*, but he deleted some contents regarding topics with which Europeans were unfamiliar, such as herbal components and the symptoms of poisoning. Cibot's article is the first European translation, and it marks the

historic beginning of Chinese forensic knowledge and culture been introduced to the Western world.

3 Diffusion of ancient Chinese forensic culture in the 19th–20th centuries

3.1 First English introduction of *Xi Yuan Lu* by W. A. Harland

On June 14, 1853, the British surgeon William Aurelius Harland, MD (1822–1858), read his article titled *Chinese medical jurisprudence: Notice of a Chinese work on medical jurisprudence, entitled Se-Yuen-Luh* (洗冤錄), or *Records of the Washing away of Injuries* to the China Branch of the Royal Asiatic Society. In the beginning part of the article, Harland pointed out that most Europeans took the view that the Chinese were entirely ignorant of the applications of medical science to assist in ascertaining causes of death from injury, disease, or accident.⁷ Intending to introduce *Xi Yuan Lu* and eliminate the prevailing Eurocentrism stereotype at that time, he made an explicit comparison between China and Europe in the development of legal medicine in ancient times. He argued that European medical jurisprudence did not appear until 1602, when Italian physician Fortunato Fedele (1550–1630) published

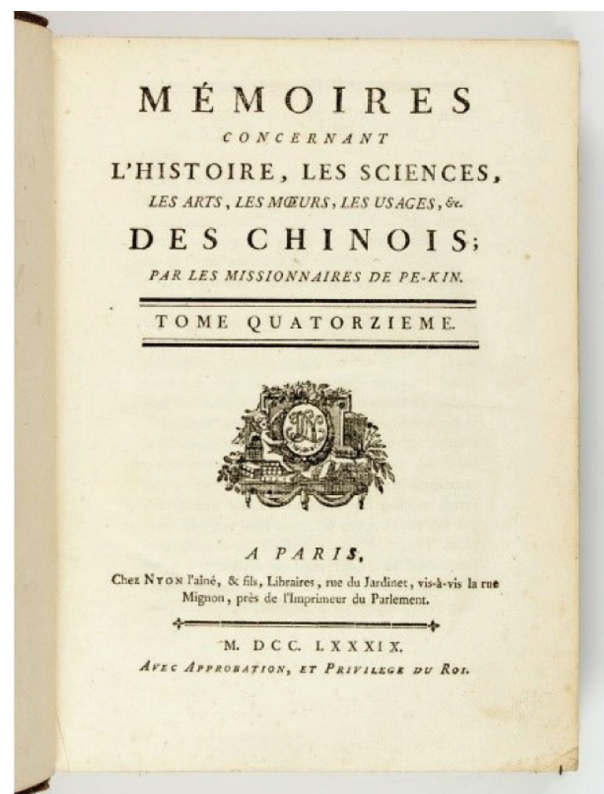


Figure 1 *Mémoires concernant l'histoire, les sciences, les arts, les mœurs, les usages, &c. des Chinois: par les missionnaires de Pékin* (*Memoirs Concerning the History, Sciences, Arts, Customs, Usages, etc. of the Chinese: By the Missionaries in Beijing*) (source from: <https://www.biblio.com/>)

Derelationibus Medicorum (On Doctor's Report) in Sicily, whereas Song Ci's *Xiyuan Jilu* was published in 1247, predating Fortunato by three centuries. He further explained that the ancient Chinese had formed systematic knowledge of legal medicine to analyze the cause of death and wounds by inspecting perimortem and post-mortem marks of violence.⁷ His assertion that ancient China had a system of medical jurisprudence exerted a profound impact on the historical significance of forensic medicine. Moreover, Harland went into detail to describe the copy of the book he obtained from Mr. T. T. Meadows (1815–1868): “the book was in five volumes, handsomely printed, and all the important passages marked with red ink; besides copious notes or commentary in red, blue, and yellow ink at the top of the pages.”⁷

Two years later, in the spring of 1855, Harland published his article in *Transactions of the China Branch of the Royal Asiatic Society*. Despite only translating the table of contents of *Xi Yuan Lu* but none of the original body text, Harland provided a general sketch of early Chinese medical jurisprudence and claimed the historical value of Chinese forensic medicine with this English introduction of *Xi Yuan Lu*. Since then, the Chinese medical classic *Xi Yuan Lu* has become widespread in the West and aroused Europeans' attention to early medical jurisprudence in China.

It is also worthwhile to discuss the translations of this book into multiple languages in the same era. The first nearly complete translation of *Xi Yuan Lu* in the West was a Dutch version under the title *Geregtelijke Geneeskunde, uit Chinese vertaald* published in *Verhandelingen Van Het Bataviash Gencotschap Van Kunsten en Wentenschappen* in 1863. This book was prepared by the Dutch sinologist Carolus Franciscus Martinus de Grijis (1832–1902). This Dutch version was later translated into German in 1908 by Heinrich Breitenstein (1848–1930), titled *Gerichtliche Medizin der Chinesen von Wang-in-Hoai-Nach der holländischen Übersetzung des Herrn C. F. M. de Grys*. In 1884, Frenchman Charles-Ernest Martin (1830–1897) translated *Xi Yuan Lu* into French, titled *Exposé des principaux passages contenus dans le Si-Yuen-Lu*. Although it was not a complete version, it is still considered the second French version. Around 1908, Charles Henry Litolff (1865–1951) in Vietnam finished the third French version, namely *Médecine légale sino-vietnamienne-le livre de la réparation des torts*.^{3,6,8} The various language translations of the book witnessed the extensive transmission of China's forensic science.

3.2 First extended English translation of *Xi Yuan Lu* by H. A. Giles

Another influential English translation was Herbert Allen Giles' (1845–1935) (Fig. 2) *The Hsi Yuan Lu or Instructions to Coroners*. Giles was born in Oxford

in 1845, and he was a distinguished English sinologist and the second professor of Chinese at the University of Cambridge, succeeding Sir Thomas Francis Wade. He built a reputation in Europe for his highly productive writings on Chinese culture, and his translational works were highly regarded for their faithfulness to the original texts. He devoted himself to the translation and publication of Chinese classics in the hope to introduce Europeans to the literary achievements of China. In 1922, Giles was awarded the Triennial Gold Medal by the Royal Asiatic Society. He was twice awarded the Prix Stanislas Julien in 1911 and 1924, for his valuable contributions to interpret oriental literature and culture for the Western people. L. C. Hopkins (1854–1952), a British sinologist and consul, noted that Giles had delivered a better understanding of the Chinese intellect, capabilities and achievements, than any other scholars.^{9,10}

Giles was instrumental in transmitting Chinese medical culture to the West. His translation of *Xi Yuan Lu* was of great value in spreading early Chinese judicial knowledge in Europe. In the preface of his translation, Giles briefly described why he translated this Chinese forensic classic. He wrote that he first heard of the book *Xi Yuan Lu* in 1873 when he was in Ningbo, Zhejiang Province of China. In his eyes, *Xi Yuan Lu* was one of the most widely-read and highly-esteemed works in China, because he found that Chinese coroners always consulted the book when examining corpses or wounds.¹¹ To satisfy his curiosity on the subject of Chinese forensic proceedings, Giles bought a copy and translated it. That copy was the 1843 edition of *Xi Yuan Lu*, titled *Buzhu Xiyuanlu Jizheng* (《补注洗冤录集证》 *Supplemental Annotations to Records for Vindication*) whose preface was written by Tong Lian (童廉), an administrative officer in charge of the salt business, and also a researcher on Chinese forensic medicine in the Qing dynasty. Giles' translation was based on this edition. In 1874, Giles submitted his translation of *Xi Yuan Lu* to *China Review*, but only the first half was published due to a disagreement with the editor N. B. Dennys. Giles held the second half of the translation until *China Review* changed its editor. In 1924, in conjunction with the first half, Giles reissued his translation titled *The Hsi Yuan Lu or Instructions to Coroners* in volume 17 of the *Proceedings of the Royal Society of Medicine*. Giles' rendition was not primarily for an academic reader; it aimed to introduce the history of ancient Chinese at the request of the general public. To make this translation intelligible, Giles chose not to translate or even omitted some complex text for brevity's sake. Notably, Giles rendered the text under the heading *On the Examination of The Female Body* in section 9 of chapter 1 into Latin, but not English. Giles probably considered this section as indelicate text.^{3,12}

Despite the fact that simple omissions and abridgments were frequently adopted in the translation, Giles' translation was robust, fluent, helpful, and easy to read.⁹

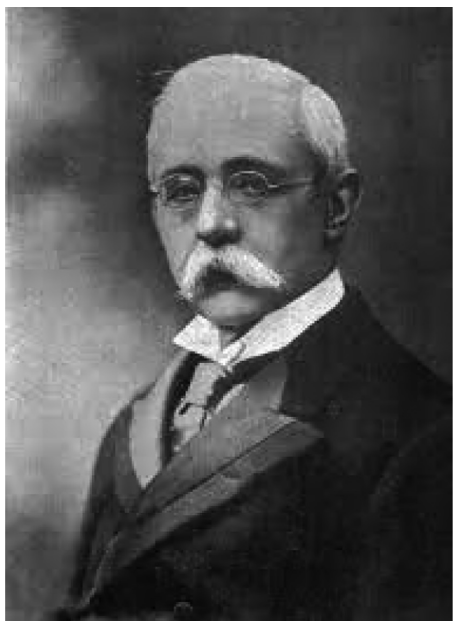


Figure 2 Herbert Allen Giles (1845–1935) (source from: https://en.wikipedia.org/wiki/Herbert_Giles)

It was conducive for readers to gain acquaintance with the system of medical jurisprudence in ancient China and its scientific value. In his later book *Zhongguo Zhaji* (《中国札记》 *Chinese Sketches*), a compilation of articles providing a basic introduction to 19th Century China, Giles introduced and explained the practice of inquests in ancient China by again presenting part of his own translation of *Xi Yuan Lu*.¹³ Giles' version was not complete, but as the first extended English translation of *Xi Yuan Lu*, it laid the foundation for the further transmission of Chinese forensic culture to the Western world. Since the time of H. A. Giles, *Xi Yuan Lu* has been widely recognized by Western medical historians and people who have an interest in Chinese forensic culture. Giles' version is regarded as a significant landmark in the global spread of Chinese forensic medicine and culture.

3.3 First complete English translation of *Xiyuan Jilu* by Brian E. McKnight

There is no extant copy of the original edition written by Song Ci. Fortunately, the original text was reprinted and preserved in 1308 during the Yuan dynasty, known as the Yuan edition of *Xiyuan Jilu*. In this edition, the preface was written by Song Ci himself in 1247. Therefore, this edition is regarded as the copy of Song Ci's version. Two editions on the basis of the Yuan edition were issued later, namely Sun Xingyan's (孙星衍, 1753–1818) edition reprinted during the Qing dynasty (Fig. 3) and Yang Fengkun's (杨奉琨) annotated 1980 edition (Fig. 4).⁵ Today we have access to the Song Ci's version through Sun's and Yang's editions.

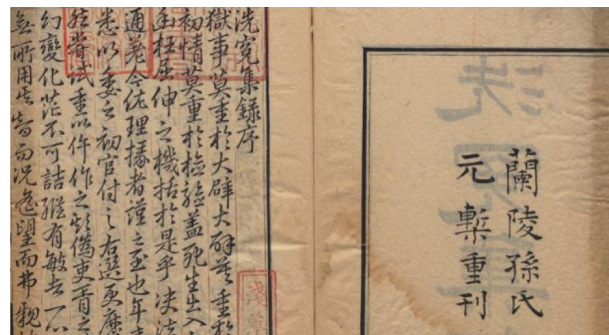


Figure 3 Sun Xingyan's (孙星衍, 1753–1818) edition (source from: <https://www.shuge.org/ebook/song-ti-xing-xi-yuan-ji-lu/>)

In 1981, American lawyer and sinologist Brian E. McKnight rendered Sun Xingyan's edition into English, titled *The Washing Away of Wrongs: Forensic Medicine in Thirteenth-Century China*. It is regarded as the first complete English translation of Song Ci's original version.

Unlike Giles' version, McKnight provided abundant paratexts, including foreword, preface, introduction, preface, and bibliography, in an attempt to deepen readers' understanding of the original historical context. He wrote in the introduction that the aim of the translation is to clearly depict the procedure of forensic practice in ancient China.¹² Therefore, in the 30-page introduction, McKnight reviewed the origin and evolution of Song Ci's work and explained that the original version was a five-volume text first published in Hunan province during the Southern Song dynasty. Numerous revisions, editions, and supplementation were later

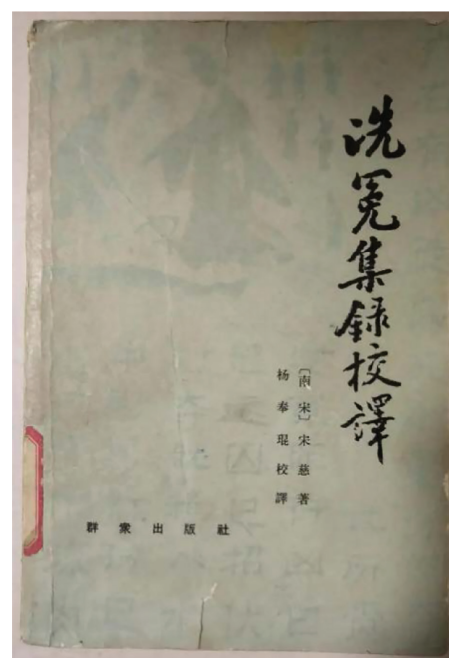


Figure 4 Yang Fengkun (杨奉琨)'s annotated 1980 edition (source from: <https://book.kongfz.com/>)

published based on this original version. He explicated to readers the entire investigatory process during the Song dynasty, including details of the preliminary parts of the process. McKnight examined the history of the forensic principles established in the Chinese inquest system, compared the investigatory procedures in different dynasties, and concluded that the complexity of forensic medicine during the Song dynasty has reached new heights.

Regarding the translation, he explained the difficulties he had confronted. For instance, he found that medical terminology used in the book varied in different chapters, and the names of bones were difficult to translate because skeletal anatomy was not wholly recognized at the time of Song Ci and some bones remained unknown. In his book, McKnight had parenthetical notes set in italics to help easily distinguish from the original text. As for Giles' translation, McKnight commented that Giles' rendition was relatively liberal but helpful. Considering that Giles' and his own translations were based on different editions, McKnight noticeably used the letters n.G. to indicate texts which were not translated in Giles' work.¹² To help readers understand the text properly, he considerably put footnotes on the same page rather than listing them collectively at the end of the book, together with the lengthy bibliography and an index. It is commonly recognized that McKnight's translation is reliable, scholarly, and complete.¹⁴

It is clear that McKnight has transmitted more forensic knowledge of ancient China to the West. His translation *The Washing Away of Wrongs* is of great value for expanding awareness of the history of non-Western medicine. McKnight's translation is more accessible and readable for readers, and sufficiently informs the Western world of how corpse investigations were conducted in ancient China; therefore, it is welcomed and popular among Western medical historians, forensic experts, and non-professional readers. To date, McKnight's version has been cited by scholars and researchers in 113 publications and well-regarded academic journals. It shows that McKnight's version has now become the most widely consulted translation of *Xiyuan Jilu*.

4 Corresponding study of ancient Chinese forensic medicine

Translation efforts by missionaries, sinologists, and physicians beginning in the 18th century made a valuable contribution to the global spread of Chinese forensic medicine, thereby giving rise to the growth of interest in Chinese legal medicine and culture in the West.

Joseph Needham (1900–1995) and Lu Gwei-Djen (1904–1991) were two historians at the University of Cambridge well-known for their writings on the history of Chinese science and technology. Their article titled

"A history of forensic medicine in China," published in 1988, explicated the origin and evolution of Chinese medical jurisprudence. What drove Song Ci to write *Xiyuan Jilu* was that many inaccuracies and malpractices occurred in the coroner's inquests at that time; therefore, Song Ci provided a guideline for investigators to eliminate the injustices. Before explaining Song Ci's text, they detailed the two works that appeared after *Xiyuan Jilu*, namely, *Ping Yuan Lu* (《平冤录》 *Essay on the Redressing of Wrongs*) written by Zhao Yizhai (赵逸斋) of the Song dynasty and *Wu Yuan Lu* (《无冤录》 *Essay on Avoiding Grievances*) written by Wang Yu (王与) of the Yuan dynasty. These two works, together with Song Ci's *Xiyuan Jilu*, are called *Songyuan Jianyan Sanlu* (《宋元检验三录》 *Three Treatises on Inquest Procedure from the Song and Yuan Dynasties*). *Wu Yuan Lu* was transmitted early to Korea, and then to Japan; therefore, it was a founding document of Korean and Japanese legal medicine. And it is now regarded as the initial expansion and transmission of Song Ci's work in Asia because *Wu Yuan Lu* was written based on Song Ci's *Xiyuan Jilu*.⁵ Needham and Lu have also explored the relationships among various editions issued later in China and explained the differences between versions by analyzing the existing preamble, postscript, bibliographies, and previous research. Two writers used both Giles' and McKnight's translations to elaborate on proceedings of forensic practice in ancient China. They asserted that Chinese forensic medicine was relatively mature and sophisticated by 13th century because the systematic procedures and principles were clearly presented in Song Ci's book.⁵

Although Chinese forensic medicine was innovative at its time, it seems that Chinese forensic medicine stalled on the way to developing modern autopsy. Some scholars thought the book written by Song Ci was short on autopsy knowledge because its guidance on investigating the cause of death was based almost entirely on evidence from external examination.¹⁵ Conversely, a couple of hundred years later, Europeans began to practice anatomical knowledge, leading to a new tide of modern forensic medicine. Needham, in particular, pondered why advances in Chinese forensic medicine stagnated during the journey from ancient times to modern times. The obstacles were highly complex. Needham believed some factors inhibiting Chinese civilization probably stifled the transformation of China's forensic medicine from ancient practice into modern science.⁵

In recent years, the discussion on the transformation of Chinese forensic medicine in contemporary China, the functions of ancient forensic traditions and their impact on modern Chinese medical jurisprudence have become new research trends in the Western world. Daniel Asen, an American historian of modern China at Rutgers University, has focused his recent research

and publications on the connections between law, science, and medicine, in particular, the changes in Chinese forensic science between the 19th and 20th centuries. In his research published in 2021, he discussed the development of both ancient and modern forensic medicine in contemporary China.¹⁵ He points out that *Xiyuan Jilu* was not only a book about how to inspect bodies and wounds, but also standards of practice that investigators were expected to observe when holding inquests and determining causes of death or injuries. Therefore, *Xiyuan Jilu* exerted a strong influence on Chinese legal medicine until the early 20th century, when modern forensic medicine was first introduced to China. In contemporary China, a new modern forensic system was implemented.¹⁵ It was a common practice for judicial officials to ask the forensic investigator to examine the body using the methods described in *Xiyuan Jilu* first, then seek help from an expert in modern legal medicine. This system is called forensic pluralism as it applies both ancient instructions and modern methods in investigations. Modern legal medicine experts had an ambivalent attitude toward the tradition presented in *Xiyuan Jilu* because, in their eyes, the old forensic practice lacked the support of modern science. Apart from that, they believed that the traditional investigation procedure was frequently carried out by people who lacked medical knowledge.¹⁵ It was not until 1949 that the modern forensic system was wholly established, and legal medicine specialists became dominant. In particular, Asen wrote, “Lin Ji (林几 897–1951) is commonly recognized today as the ‘founder’ of legal medicine in China,”¹⁵ and described Lin’s efforts to establish a new legal medicine practice system in modern China. As an indispensable part of the research into the history of Chinese forensic medicine, Asen provides a vivid description of the development of Chinese forensic medicine in contemporary China and comprehensively presents how the Chinese legal jurisprudence system shifted.

The favorable comments and extensive discussions of Asen further magnified the impact of Chinese legal medicine culture and forensic knowledge in the Western world. Ancient Chinese legal jurisprudence is frequently cited and quoted by modern legal medicine experts and scholars in modern forensic pathology research. For example, Leah Sutton and Jason Byrd, two scholars from the University of Florida, emphasize the importance of *Xiyuan Jilu* in the article “An introduction to postmortem interval estimation in medicolegal death investigations” published in 2020 in *WIREs Forensic Science*.¹⁶ They state that the earliest systematic research on postmortem interval was conducted by Song Ci in 13th century China and that Song Ci revealed the relationship between postmortem changes in the body condition and the time of death. Even though attempts to further determine the postmortem interval have continued for

centuries, investigators and scientists still have not significantly improved the accuracy of measurement of the postmortem interval to this day.¹⁶ In the book review of the classic Western book *Spitz and Fisher’s Medicolegal Investigation of Death: Guidelines for the Application of Pathology to Crime Investigation*, V. W. Weedn, former chief medical examiner at the Maryland Department of Health, further clarifies that the description of toxicology was clearly presented in Song Ci’s book, meaning that Chinese forensic medicine is the first to systematically set a standard that all practice of medicolegal death investigation must follow.¹⁷

Broadly speaking, forensic medicine research in modern times greatly exemplifies the values established in ancient Chinese legal medicine. More importantly, it acknowledges that the basic knowledge of inquests established in *Xiyuan Jilu* is fundamental to forensic medicine.

5 Conclusion

Translations and studies not only played a monumental role in the diffusion of Chinese forensic culture in the West but their prevalence also shows the strong vitality of Chinese forensic medicine in today’s world. Even though from the viewpoint of modern science, *Xiyuan Jilu* is an old book written in the mid-13th century with some inaccuracies that were no longer regarded as “scientific” today, the close observations and ethical considerations of justice manifested in the book are attitudes deeply embedded in the development of modern forensic medicine. The fact remains that the basic rules of forensic practice delineated in the book, such as clearly identifying the location of wounds and the status of injuries, continue to affect forensic practice to this day. Therefore, it is no exaggeration to say that ancient Chinese forensic medicine has had a profound impact on forensic pathology in contemporary times.

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This article does not contain any studies with human or animal subjects performed by the author.

Author contributions

Li Yin wrote and reviewed the article.

Conflicts of interest

The author declares no financial or other conflicts of interest.

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Reception of Translated Classics of Traditional Chinese Medicine in the Spanish-speaking World: A Survey of Seven Spanish Versions of *Huangdi Neijing* (The Yellow Emperor's Inner Classic)

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Abstract

Previous studies on translations of *Huangdi Neijing* (The Yellow Emperor's Inner Classic) have focused on English versions; little attention has been given to non-English translations. The present study is the first investigation of the reception of the seven Spanish versions of *Huangdi Neijing* in terms of three parameters: collection records in libraries worldwide; book reviews and citation counts in international journals; and customer reviews on Amazon. The results revealed four features of Spanish translations and communication of *Huangdi Neijing* in terms of reception of academia, reception of general readers, the center of translation and communication, and the role of Chinese scholars. These factors demonstrate the marginal status of Spanish translations of traditional Chinese medicine (TCM) classics. The implications are summarized in hopes of promoting the translation and communication of TCM classics in the Spanish-speaking world and to provide insights into the communication of TCM culture in the non-English-speaking world.

Keywords: Classics of traditional Chinese medicine; *Huangdi Neijing* (The Yellow Emperor's Inner Classic); Reception; Spanish translation

1 Introduction

As an important branch of traditional medicine with a history of over 3,000 years, traditional Chinese medicine (TCM) is an essential part of Chinese culture. TCM boasts a complete, integrated system of medical theories, clinical practice, and therapeutic methods; it is highly respected in the Chinese-speaking world and has gained increasing attention worldwide. The classics of TCM cover intricate concepts and clinical details, and they introduce a highly practical holistic healing system; they are at the top of reading lists for TCM researchers and practitioners. Hence, translation of TCM classics, which serves individuals who cannot read ancient Chinese

texts, is crucial in promoting international communication related to TCM.

Su Wen (《素问》 Basic Questions) and *Ling Shu* (《灵枢》 The Spiritual Pivot) are collectively known as *Huangdi Neijing* (《黄帝内经》 The Yellow Emperor's Inner Classic), one of the four classics of TCM. *Huangdi Neijing* systematically discusses the principles and doctrines of human physiology, pathology, and treatment in TCM. Unschuld remarks that *Huangdi Neijing* "plays a role in Chinese medical history comparable to that of the Hippocratic writings in ancient Europe."¹ Previous studies on translating *Huangdi Neijing* have focused on English translations²⁻⁶; translating *Huangdi Neijing* into other languages, which accounts for an essential part of international communication for TCM, has attracted little attention.

Spanish is one of the six official languages of the United Nations and the official language of 21 countries. After Chinese, Spanish is the most widely spoken language in the world. However, little research has been conducted on Spanish translation and communication of TCM classics, including *Huangdi Neijing*. Zhang (张焱) et al.⁷ were the first to give a brief introduction to Spanish translations of TCM classics and noted the illustrated translation of *Huangdi Neijing* in Spanish in 2010. Li (李照国)⁸ briefly listed Spanish translations of some TCM classics in the 21st century, including the Spanish translations of *Ling Shu* published in 2009 and *Su Wen* published in 2014. However, neither of those

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reports offered detailed information nor an introduction to translated versions; there have been no in-depth studies of Spanish versions of *Huangdi Neijing*.

The present study examined all Spanish versions of *Huangdi Neijing* in book form (most of which have never been examined) and investigated their overseas reception. This study objectively researched the translation and communication of TCM classics in the Spanish-speaking world; it addresses the lack of information about translation and international communication of TCM classics; and it provides insights for promoting the communication of TCM culture in the non-English-speaking world. It should be noted that the Spanish-speaking world here has no strict geographic boundaries: it includes countries where Spanish is the official language and countries where it is a main foreign language, such as the United States.

2 Research objectives and data

This study collected eight Spanish versions of *Huangdi Neijing*: two full translated versions and one abridged translated version of *Su Wen*; two full translated versions and two abridged translated versions of *Ling Shu*; and one adapted

translated version of both *Su Wen* and *Ling Shu*. The Spanish translation of *Huangdi Neijing* started with the translation of chapters 1 to 13 published in different issues of the journal of the Sociedad Española de Médicos Acupunturistas (Spanish Society of Medical Acupuncturists) (Note 1); the other seven versions were translations that were officially published in book form, including reprints (Table 1).

The present study investigated the reception of the seven Spanish versions of *Huangdi Neijing* published in book form in terms of the following three parameters: (1) collection records of each Spanish version of *Huangdi Neijing* found in libraries worldwide and the distribution of the libraries that owned them; (2) book reviews and citation counts of the Spanish versions of *Huangdi Neijing* in international journals; and (3) customer reviews of the Spanish versions of *Huangdi Neijing* on Amazon. To a great extent, assessing the three parameters was able to present a clear picture of the reception of the Spanish versions of *Huangdi Neijing*. The seven versions are referred to as Shuai's version, Sans's version, González and Yan's version, Zhou and Han's version, García's *Ling Shu* version, García's *Su Wen* version, and Aguilera and Canas's version.

Table 1 Overview of Spanish versions of *Huangdi Neijing*

No.	Translator(s)	About translator(s)	Book name	Year of first publication	Content of the book
1	José Luis Padilla Corral (Note 2)	Spanish; Medical Ph.D.; Founder of S. E. M. A.; Professor of acupuncture	<i>The Yellow Emperor's Inner Classic: The Spiritual Pivot (Nei King Ling Shu)</i>	1980–1981	Abridged translation of <i>Ling Shu</i> (13 Chapters)
2	Shuai Xuezhong (帅学忠) ^{9–11} (Note 3)	Chinese; Professor of Hunan College of TCM; English Translator of TCM	<i>The Yellow Emperor's Inner Classic: The Spiritual Pivot (HOANG TI NEI KING: Ling Shu)</i>	1982	Abridged translation of <i>Ling Shu</i> (66 Chapters)
3	Teresa Sans Morales ^{12–14}	Spanish; Sworn translator and interpreter of English, French, and Spanish	<i>The Yellow Emperor's Inner Classic: Basic Questions (Hoang Ti Nei King: Su Wen)</i>	1990	Full translation of <i>Su Wen</i> (Two Parts)
4	Roberto González G. ¹⁵ Yan Jianhua (烟建华)	Mexican; Ph.D. in TCM; Professor of acupuncture; Acupuncturist Chinese; Professor of Beijing University of Chinese Medicine	<i>The Yellow Emperor's Inner Classic: Basic Questions (MEDICINA TRADICIONAL CHINA: El primer canon del Emperador Amarillo El tratado clásico de la acupuntura)</i>	1996	Abridged translation of <i>Su Wen</i> (47 Chapters)
5	Zhou Chuncai (周春才) ¹⁶ HanYazhou (韩亚洲) (Note 4)	Chinese; Painter; Independent writer Chinese; Art editor	<i>The Illustrated Yellow Emperor's Inner Classic (HUANGDI NEIJING: gráfico pra cuidar la salud)</i>	1997	Adapted translation of <i>Su Wen</i> (18 Chapters) and <i>Ling Shu</i> (12 Chapters)
6	Julio García ¹⁷	Spanish; Other personal information not found (Note 5)	<i>The Yellow Emperor's Inner Classic: The Spiritual Pivot (LÍNG SHŪ: Canon de Medicina Interna del Emperador Amarillo)</i>	2002	Full translation of <i>Ling Shu</i>
7	Julio García ¹⁸	Spanish; Other personal information not found	<i>The Yellow Emperor's Inner Classic: Basic Questions (SŪ WÉN: Canon de Medicina Interna del Emperador Amarillo)</i>	2005	Full translation of <i>Su Wen</i>
8	Víctor Aguilera ^{19–21} Rosa María Canas	Spanish; Acupuncturist Spanish; Acupuncturist; Director of Instituto de Medicina Natural y Energética Barcelona	<i>The Yellow Emperor's Inner Classic: The Spiritual Pivot Volume I; Volume II; Volume III (Huangdi Neijing Lingshu Tomo I; Tomo II; Tomo III)</i>	2019 (Volume I); 2020 (Volume I); 2021 (Volume I)	Full translation of <i>Ling Shu</i> (Three Volumes); Retranslated from the French version of Nguyen Van Nghi, Tran Viet Dzung, and Christine Recours Nguyen in 1994–1999

3 Reception of seven Spanish versions of Huangdi Neijing

3.1 Summary of seven Spanish versions of Huangdi Neijing following WorldCat search

OCLC's (formerly known as the Online Computer Library Center) WorldCat is the largest online public access catalog globally: it makes library collections findable and accessible worldwide. It allows readers to locate a book, video, or other item of interest and find which libraries (over 30,000 libraries in more than 100 countries) own the item. The data in WorldCat are updated in real time.²² The number of collection records of a book in global libraries and distribution of libraries that own an item can be regarded as good yardsticks for measuring a book's cultural influence. With translated texts, libraries tend to collect more popular and recognized versions. A greater number of collection records indicates better reception of a translated text; the distribution of libraries that own a translated text can present a snapshot of the coverage and communication of the translation. The data in the present study were collected from WorldCat on March 29, 2022. The search results of the seven Spanish versions of *Huangdi Neijing* (including different editions) worldwide appear in Table 2.

Table 2 presents 30 collection records of all seven Spanish versions: 16 records in Spanish libraries; eight in the US libraries; two in Mexican libraries; and one each in Belgium, China, Singapore, and the United Kingdom. González and Yan's version ranked highest with 10 records; Shuai's version was second with seven records; and Sans's version ranked third with four records. There were 12 records published by Editorial Dilema. No digital copy of the seven versions could be found in the WorldCat search.

3.2 Book reviews and citation counts of seven Spanish versions of Huangdi Neijing

Peer review is essential for the overseas promotion of translated texts. For the overseas reception of TCM translated texts, reviews by overseas experts on Chinese studies or history are highly important. The present study searched for book reviews of Spanish versions of *Huangdi Neijing* written by peer experts abroad in the international journal databases of Web of Science (including SciELO Citation Index), Scopus, and EBSCOHost on March 29, 2022. SciELO Citation Index includes research in regional journals in the Caribbean, Latin America, Portugal, South Africa, and Spain, and it can be searched in English, Portuguese, or Spanish. The search found no book reviews of the seven Spanish versions.

Citation counts in international journals reflect the degree of scholarly interest in publications. The author searched the international journal databases of Web of Science (including SciELO Citation Index), Scopus, and EBSCOHost on March 29, 2022, to collect the citation counts of the seven Spanish versions of *Huangdi Neijing*. The author found only one citation of García's *Su Wen* version and no citations of the other versions.

3.3 Customer reviews of the seven Spanish versions of Huangdi Neijing on Amazon

Overseas reader reviews are important indicators for evaluating the reception of translated texts: they exert a strong influence on subsequent readers or buyers. Amazon is the world's biggest online retailer, and the company owns localized stores, which differ in selection and prices. The author searched on Amazon (including Spain-based website and Mexico-based website) on March 29, 2022, and collected all customer reviews

Table 2 Collection records of seven Spanish versions of Huangdi Neijing on WorldCat

Version	Year of publication	City of publication: publisher	Collection record (distribution of libraries)	
Shuai's version	1982	Madrid: Las Mil y Una Ediciones	5 (Spain: 4; USA: 1)	Total: 7 (Spain: 6; USA: 1)
	2004	Madrid: Editorial Dilema	2 (Spain: 2)	
	2009	Buenos Aires: Ediciones Continente	0	
Sans's version	1990	Madrid: Mandala Ediciones	0	Total: 4 (Spain: 3; Singapore: 1)
	2004	Madrid: Editorial Dilema	4 (Spain: 3; Singapore: 1)	
	2009	Buenos Aires: Ediciones Continente	0	
González and Yan's version	1996	Mexico, D.F.: Editorial Grijalbo		Total: 10 (Spain: 1; Mexico: 2; UK: 1; USA: 6)
Zhou and Han's version	1997	Beijing: Editorial Delfin		Total: 3 (China: 1; Belgium: 1; USA: 1)
García's <i>Ling Shu</i> version	2002; 2015	Madrid: JG Ediciones		Total: 3 (Spain: 3)
García's <i>Su Wen</i> version	2005; 2014 (digital edition); 2015	Madrid: JG Ediciones		Total: 2 (Spain: 2) (0 digital edition)
Aguilera and Canas's version	2019	Madrid: Editorial Dilema	1 (Spain: 1)	Total: 1 (Spain: 1)
	2020		0	
	2021		0	

Table 3 Number of customer reviews of seven Spanish versions of *Huangdi Neijing*

Version	No. of customer reviews	Note
Shuai's version	21 (For digital edition: 15) (USA: 11; Spain: 8; Mexico: 2)	
Sans's version	6 (Spain: 4; USA: 2)	
González and Yan's version	0	Item not found on Amazon
Zhou and Han's version	0	
García's <i>Ling Shu</i> version	0	
García's <i>Su Wen</i> version	1 (Spain: 1)	
Aguilera and Canas's version	0	

of the seven Spanish versions of *Huangdi Neijing*. The results appear in Table 3.

Shuai's version ranked highest with 21 customer reviews, among which 15 were for the digital edition. The latest review appeared in Spain on January 22, 2021. There were 11 customer reviews in the United States, eight in Spain, and two in Mexico. Sans's version came second with six customer reviews (four in Spain, two in the United States). García's *Su Wen* version received only one review, which was made in Spain on January 16, 2016. González and Yan's version did not appear on Amazon. No customer reviews were found for the other three versions.

The number of book reviews by Amazon readers reflected the popularity of the Spanish translations of *Huangdi Neijing* among overseas general readers; the comments of Amazon readers were direct feedback of the reading experience for each version. Evidently, Shuai's version was the most popular. Among the 21 customer reviews, 18 were positive. The editor (Fernando Cabal) of Shuai's version wrote the following in the prologue to Shuai's version:

"Estamos seguros de que esta obra enriquecerá tanto al néofito que por primera vez se acerca a la acupuntura como al acupuntor experto, que encontrará en ella un inagotable legado de sabiduría y una invitación constante al estudio y la reflexión."¹¹

(English translation:

"We are sure that this work will enrich both the neophyte, who approaches acupuncture for the first time, and the expert acupuncturist, who will find in it an inexhaustible legacy of wisdom and a constant invitation to study and reflection.")

Among general readers, it was clear that Shuai's version attracted the targeted readers as the editor expected. The author quotes two reviews here:

- 1) "Es un libro difícil, si no entiendes nada de MTC o acabas de empezar a estudiarlo, es mejor que esperes un poco a tener más conocimientos ya que muchos de los nombres de los puntos tienen su terminología china antigua, y puede crear un poco de confusión. Pero aún así es un libro que todo acupuntor debe leer una vez en su vida la menos."²³

(English translation:

"This is a difficult book. If you know nothing about TCM or are just start learning, you had better start reading the book later: many acupoint names have ancient Chinese terms, and they may cause some confusion. But still, it is a book that every acupuncturist should read at least once in their lives.")

- 2) "Un clásico imprescindible para todo estudiante de MTC. Es un libro complicado de entender, pues las traducciones a veces son demasiado literales y pueden llevarnos a pensar que no avanzamos en su lectura. Hay que tener paciencia y no limitarse a leerlo, sino también consultar otros textos más modernos que nos faciliten su comprensión."²³

(English translation:

"A must-have classic for every TCM student. It is a difficult book to understand because the translations are sometimes too literal and can lead us to think that we are not making progress in our reading. We must be patient not only in reading it but also in consulting other more modern texts that make it easier to understand.")

Similar comments appeared in other customer reviews of the book. Readers considered it an essential classic for acupuncturists and TCM students, but it was unsuitable for readers with no background knowledge of TCM. Sans's version was the second-most popular on Amazon. The book features an introduction by Alfredo Embid; Sans retranslated the English version of *Huangdi Neijing* of Henry C. Lu (吕聪明) into Spanish (Note 6). Lu's translation was initially intended for students of the Chinese College of Acupuncture and Herbology. Sans deleted the introduction of each chapter and the comments of each section made by Lu in her retranslation, but Sans's version still attracted TCM students. Two reader reviews were as follows:

- 1) "Si te interesa la medicina alternativa, concretamente la tradicional china, éste libro (en sus dos partes) es como el ABC. Tienes que tenerlo sí o sí."²⁴

(English translation:

"If you are interested in alternative medicine, specifically traditional Chinese medicine, this book (in its two parts) is as fundamental as ABC. You must have it.")

- 2) "El contenido está bien, hecho en falta la transcripción fonética, en chino, de algunos términos. El formato es manejable pero algo voluminoso. Lo recomiendo para los estudiantes de acupuntura."²⁴

(English translation:

"The content is fine, but the phonetic transcription, in Chinese, of some terms is missing. The format is manageable but somewhat bulky. I recommend it for acupuncture students.")

3.4 Discussion and implications

From the present survey, applying the three parameters described above, the Spanish translations and communications related to *Huangdi Neijing* presented the following four features.

- 1) The Spanish translations of TCM classics received little academic attention. The total number of collection records of Spanish versions of *Huangdi Neijing* is small. The author found no book reviews and only one citation in the international journal database. The author attributes that situation to three factors.
 - A) TCM, which is considered alternative medicine overseas, is not well recognized in a world dominated by Western medicine. The Spanish government has yet to legalize TCM, which limits its development in Spain.
 - B) No acknowledged academic publisher participated in publishing the translated versions. Las Mil y Una Ediciones, Editorial Dilema, and JG Ediciones are all small Madrid-based publishers, specializing in alternative therapies. Editorial Delfin is subordinate to China's Foreign Language Bureau, and it specializes in publishing children's books and works in education and social sciences. Editorial Grijalbo was a Mexican publisher with representation in Spain, and it currently belongs to Penguin Random House. It became known for publishing works in social science, political philosophy, and social and political theory. In 1989, Editorial Grijalbo was bought by the Italian group Mondadori, which was Italy's largest publisher, and it became part of the Penguin Random House Editorial Group in 2012. Among the above publishers, Editorial Grijalbo is the most influential, which may partly explain González and Yan's version having the largest collection record on WorldCat.
 - C) The seven translated versions did not originally intend to serve an academic purpose. Zhou and Han's version aimed to popularize culture. The illustrated book is easy to read, using simple words and short sentences. The other six versions are mainly for imparting knowledge to TCM students, clinical practitioners, and people interested in TCM. The intended readers of Shuai's version and Sans's version have already been analyzed. González states in the translator's note that the translation is invaluable for professionals dedicated to the study, research, and clinical application of TCM as well as

laypeople generally interested in the study of Chinese culture.¹⁶ To facilitate understanding, pronunciation, and meaning for students, García renders terms in pinyin with separated syllables and with accents¹⁸; the translation method of TCM terms is applied in both his *Ling Shu* and *Su Wen* versions. Aguilera and Canas's version is a translation of the French version of *Ling Shu* translated by Nguyen Van Nghi, Tran Viet Dzung, and Christine Recours Nguyen in 1994–1999. With the translated notes of Ma Yuantai (马元台) and Zhang Yin'an (张隐庵) (Note 7) as well as notes by Nguyen Van Nghi, the French translators intended to guide the readers (professionals or students of TCM and acupuncture) in appreciating the subtlety of TCM and acupuncture.²⁰ Furthermore, none of the seven versions conforms to academic writing format or style. Thus, with respect to the above three factors, academic neglect to the Spanish translations of *Huangdi Neijing* is understandable.

- 2) Among general readers, the Spanish versions of *Huangdi Neijing* have likewise not been well received. With customer reviews, Shuai's version was the most popular, and Sans's version ranked second. This is partly due to the three versions published by Editorial Dilema being available on Amazon, whereas the other versions are not. It is notable that the digital edition of Shuai's version received the most customer reviews: this implies that publication of a digital edition is crucial in promoting the spreading of a translation in the modern era.
- 3) The reception of Spanish versions of *Huangdi Neijing* indicated that the focus of translation and communication of TCM classics in the Spanish-speaking world is Spain. Most translators and publishers of Spanish versions of *Huangdi Neijing* were from Spain. The largest collection records were located in Spanish libraries, and most customer reviews came from Spain. Regarding collection records and customer reviews, it should be observed that the United States plays a vital role in the translation and communication of TCM classics in the Spanish-speaking world. Hispanics are the largest minority in the United States, and that country has the world's second-largest population of Spanish speakers (after Mexico).²⁵ The market in the United States cannot be ignored. It is remarkable that though Argentina published both Shuai's version and Sans's version, no collection record was found in Argentinian libraries. This shows that Spanish translations of *Huangdi Neijing* are not well accepted in Argentina, which

could be attributed to a lack of public awareness of TCM classics.

- 4) It was evident that Chinese scholars were widely involved in Spanish translations of *Huangdi Neijing*. In terms of collection records and Amazon's customer reviews, González and Yan's version and Shuai's version were the most recognized among the seven translations. This indicates that Chinese scholars play a crucial role in the translation and communication of TCM classics in Spanish.

China is currently propelling the international spread of TCM. Toward promoting the reception of TCM classics and TCM culture in the Spanish-speaking world, some implications can be summarized from the above analysis.

- 1) The comprehensive communication of TCM classics in the Spanish-speaking world should not ignore academia. Translating TCM classics for academic purposes places a high demand on both translators and publishers. One solution is to render into Spanish well-recognized academic versions of translations from other languages. With *Huangdi Neijing*, Unschuld's version enjoys a high reputation among both academics and general readers,⁶ which would make it ideal for retranslation.
- 2) The existing Spanish versions of TCM classics were mainly produced by small publishers specializing in alternative therapy. Collaboration with more recognized publishers – especially academic ones – in the Spanish-speaking world would be appropriate for future translation projects. Furthermore, producing a digital edition is essential for publishers.
- 3) Spain is currently the center of Spanish translation and communication of TCM classics. However, Mexico and the United States are great potential markets and cannot be ignored.
- 4) Collaboration between Spanish translators and Chinese scholars has proven very effective in Spanish translations of *Huangdi Neijing*. Chinese scholars should participate more in the translation and communication of TCM classics in the Spanish-speaking world. It is essential to raise awareness of non-English translations of TCM classics among Chinese scholars.

4 Conclusion

Even for Chinese, reading the classics of TCM is difficult; the obstacle for Spanish readers is very much greater. Translations of TCM classics endeavor to bridge the gap between those works and Spanish readers. The present survey of seven Spanish versions of *Huangdi Neijing* is the first attempt to assess the current situation regarding the translation and communication of TCM classics in the Spanish-speaking world. It is evident that

Spanish translations of those works have been poorly received in academia and among general readers in the Spanish-speaking world. Regarding the marginal status of Spanish translations of TCM classics, four suggestions are advanced to promote those works and TCM culture in the Spanish-speaking world: (1) rendering into Spanish well-recognized academic versions of English translations; (2) collaboration with more recognized publishers and producing digital editions; (3) promoting the potential markets of Mexico and the United States; and (4) collaboration between Spanish translators and Chinese scholars.

Notes

Note 1: Unless otherwise specified, the author undertook all the English translations of Spanish proper nouns and quotations in this article.

Note 2: The author contacted José Luis Padilla and obtained the copies published in the journal of the *Spanish Society of Medical Acupuncturists*; however, Padilla did not provide the specific issue number of the journal in which each chapter was published, so the author was unable to provide complete information about the translation in the reference.

Note 3: The edition published by Las Mil y Una Ediciones in 1982 does not provide information about the translator. However, except for the copyright page, the 1982 edition is evidently the same as the edition published by Editorial Dilema in 2004. The copyright page of the Dilema edition adds the following note: *Primera versión al castellano a cargo de: Shuai Xuezhong* (English translation: "Person in charge of the first Spanish version: Shuai Xuezhong"). Professor Shuai Xuezhong does not know Spanish, so it is likely that the Spanish translation was completed under his guidance or organization. In the present study, the 1982 edition is identified as Shuai's version.

Note 4: This version should be based on the Chinese book *Huangdi Neijing Yangsheng Tudian* (《黄帝内经养生图典》 *The Illustrated Yellow Emperor's Inner Classic*), published by the Chinese Cultural Federation Publishing House in June 1996. Zhou Chuncai and Han Yazhou are painters and art editors, so the translator of the version is unknown.

Note 5: Personal information about Julio García could not be found in conventional media and online resources. The author contacted him by e-mail, but he declined to provide any personal information and hoped readers would focus only on his translation.

Note 6: The author obtained information about the translation of Lu's English version directly from Sans by e-mail.

Note 7: The French translators of the original version misspelled the name "Zhang Yin'an" as "Zhang An Yin." This error was not corrected in the Spanish version.

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Ethical approval

This study does not contain any studies with human or animal subjects performed by the author.

Author contributions

Wen-Wen Hu wrote and reviewed the article.

Conflicts of interest

The author declare no financial or other conflicts of interest.

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In the Spirit of Benevolence: Taking Action to Fight Against the COVID-19 Pandemic

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Abstract

Confucian doctors are representative of traditional Chinese medicine (TCM) practitioners with excellent moral character and medical knowledge, they are not hidden in the depths of ancient documents but are a guiding inspiration for professional medical personnel today. Confucian doctors are representative group of benevolence in Confucian philosophy and demonstrate the scientific and humanistic spirit of Confucian philosophy and demonstrate the scientific and humanistic spirit of Confucianism in their medical practice. They are also leading medical practitioners who uphold professional ethics in their pursuits of scientific research, clinical diagnosis & treatment, and scholarship. Both TCM and Confucian doctors played important roles during the outbreak of the coronavirus disease 2019 (COVID-19) pandemic in China. By virtue of the superb medical skills of Confucian doctors, integrated Chinese and Western medicine can quickly alleviate patients' symptoms, increase cure rates, reduce mortality rates, thus saving lives. Following the results of extensive clinical trials, this integrated therapy is now understood to be a beneficial treatment for COVID-19. The combination of TCM and Western medicine is a major feature of COVID-19 prevention and control in China. In particular, TCM plays a significant role in the fight against the COVID-19 pandemic with its unique advantages.

Keywords: Benevolence; Confucian doctor; COVID-19; Chinese medicine; Integrated Chinese and Western medicine; Medical ethics

1 Introduction

In 1918, a global influenza pandemic broke out. Just over a 100 years later, the coronavirus disease 2019 (COVID-19) pandemic imposed huge challenges on the global society.¹ The COVID-19 pandemic required society to focus on supporting medical workers, public health, and the pharmaceutical industry.² Following the explosive development of modern science and technologies in the medical field, new methods are emerging for relieving pain or completely curing diseases. Thus, new and evolving treatment options have benefited many peoples' health and wellness. Following the outbreak of the COVID-19 pandemic, however, people have realized that, in addition to advanced medical technologies, humanistic medical care is also very important for patients' physical and

mental health.³ Along with the rapid development of medical technology, researchers are increasingly focusing on humanistic medical care as the foundation and gold-standard of medical practice. The establishment of the biopsychosocial model bringing people-centered attention to modern medical diagnosis and treatment shows that humanistic care plays a pivotal role in medical practice.⁴

Traditional Chinese medicine (TCM) has always emphasized that "medicine is the art of benevolence" and valued doctors' virtues throughout its long history.⁵ TCM and Confucianism are each traditions that stretch back over a millenium further, but the idea of Confucian social & moral philosophy contributing, as an overarching guiding paradigm, to the practice of medicine, emerged during China's Song Dynasty, circa the 12th century.⁶⁻⁸ In ancient China, the social status of doctors was generally low, so it was not the primary choice for Confucians.⁹ However, in today's Chinese society, the social status of doctors continues to improve, and becoming a doctor is the pursuit of many young people. As an outstanding representative of TCM doctors, Confucian doctor (儒医) has a broader significance in the modern times and has become a role model for many people to learn.¹⁰ Although Confucian doctors may come from different medical schools, their professional ethics and broad-mindedness in saving lives and healing illnesses are common distinctive features in their medical practices.

2 Important implications for Confucian doctors

"Confucian doctor" is a collective term for a class of doctors and a cultural phenomenon.¹¹ However, Confucian

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doctors are not hidden in the depths of ancient documents but are a living inspiration for professional medical personnel today. Culture is a sociohistorical phenomenon formed through long-term societal practices and it symbolizes human wisdom based on peoples' spiritual independence.

Confucian culture originated from the Spring and Autumn Period and developed gradually to form into a cultural system emphasizing benevolence, courtesy, and moderation as its essence. Its influence is so impactful that it is still used as a guide in the development of contemporary China. Confucian culture first became the dominant factor in Chinese culture during the Han dynasty. Dong Zhongshu's (董仲舒) proposal to "banish other schools of thought and revere Confucianism alone" was adopted by Liu Che (刘彻), better known as Emperor Wu of the Han dynasty. Confucianism then became the orthodox philosophy of Chinese society, and Confucian culture has since become a decisive factor in the inheritance and development of Chinese culture.

Between 13th and 14th centuries, Zhu Zhenheng (朱震亨) advocated for the application of Confucian philosophy into TCM.⁷ Thereafter, the concepts of Chinese medicine have become deeply imprinted with Confucianism.

2.1 The origin of Confucian doctors

Confucian culture deeply influences TCM.¹² *Song Hui Yao Ji Gao* (《宋会要辑稿》 *The Collation and Research of the Compilation of Song Regulations*) states that:

"The imperial court established medical disciplines to educate scholars, so that Confucian scholars could master the *Basic Questions* in *The Yellow Emperor's Inner Canon*, learn how to diagnose and treat diseases, and help those who were ill. Such people were called the Confucian doctors."¹³

"Confucian doctor" refers to people who understand TCM and have mastered Confucianism, those who learned about TCM through Confucianism, or those who are familiar with both Confucianism and TCM. Confucian doctors intend to use Confucianism to improve the overall knowledge of medical practitioners.¹⁴ Fan Zhongyan (范仲淹), a famous official and litterateur during the Song Dynasty, once said, "If you cannot become a governing official (to save the country and the people), you should strive to become a good doctor." Therefore, Confucian scholars' determination to practice medicine is one of their choices in realizing a Confucian lifestyle and social values. In the Confucian Doctor chapter of the *Gu Jin Yi Tong Da Quan* (《古今医统大全》 *Ancient and Modern Medicine Complete Book*), a physician of the Ming dynasty, Xu Chunfu (徐春甫) is quoted thusly:

"Confucian students must understand social etiquette and justice, while doctors need to learn the essentials of diagnosis. Failure to practice social etiquette and justice

shows ignorance of the teachings of Confucius and Mencius. Failure to learn the essentials of diagnosis will endanger the lives of people. Both Confucianism and medical knowledge are very important."¹⁵

Some scholars in the Southern Song period regarded that possessing general knowledge of Confucianism was an important foundation of becoming an excellent physician.

2.2 Confucian doctors' practice

In addition to deeply understand the importance of medicine to human life and health, Confucian doctors must perform in-depth studies on the essence of medical technologies and clinical diagnoses.¹⁰ They must go beyond the theoretical understanding of medicine to extract, master, condense, and integrate their scholarly medical knowledge with philosophy, humanities, ethics, and other aspects of human inquiry to truly comprehend the essence of medicine and its deep connotations for humanity.

3 Spiritual connotations of Confucian doctors

In today's society, the meaning of Confucian doctor's connotation is expanding, and they represents those TCM medical staff who have noble virtues and can make important contributions to society.¹⁰ Professional ethics is still the basic quality of Confucian doctors. They must follow this professional spirit in their scientific research, clinical diagnosis & treatment, and scholarship pursuit. Thus, professional ethics is an essential aspect of TCM culture.

3.1 Fighting the pandemic at the front line

TCM is rooted in traditional Chinese culture, which attaches immense importance to life, it has been gradually appreciated by the international community. Becoming a TCM practitioner is an important choice for today's youth. At the same time, more and more TCM medical staff are contributing to all mankind and striving to become an excellent Confucian doctor. During the onset of COVID-19 pandemic, thousands of TCM professionals across China were sent to form TCM teams to support medical institutions in Hubei Province to fight against the disease.¹⁶ These TCM teams were TCM scholars and experts of young and middle-aged. These TCM professionals devoted themselves to the prevention and control of the COVID-19 pandemic without thinking twice of their own personal safety. During the pandemic, the intense participation and widespread use of TCM in diagnosis and treatment was unprecedented. TCM practitioners played a key role in anti-pandemic activities since the beginning of the outbreak. Good curative effects have been observed in using TCM to treat mild and common

COVID-19 patients. Subsequently, a variety of TCM products and pharmaceutical extracts have been discovered to show potential in preventing COVID-19.¹⁷⁻²⁰ TCM therapies have effectively alleviated patients' symptoms, significantly reduced the rate of mild-to-severe cases, improved patients' recovery period, and showed better performance as auxiliary treatment for severe conditions.²¹

Professor Zhang Boli (张伯礼), a Fellow from the Chinese Academy of Engineering, observed that: "TCM researchers have also carried out a large number of emergency research projects after the outbreak of the COVID-19 epidemic, and completed the screening and evaluation of anti-viral, anti-cytokine storm, and anti-pulmonary fibrosis effects of Chinese medicine preparations, and other works through basic scientific research, supporting TCM against the COVID-19 epidemic with science and technology."²²

Through their selfless dedications during the pandemic, TCM researchers have demonstrated the professional qualities of contemporary Confucian doctors.

3.2 Humanitarian spirit

The concept of "benevolence" is at the core of Confucian philosophy. Thus, Confucian doctors must not only study academic disciplines, develop good scientific research skills and medical skills for their clinical practice, but also cultivate kindness to become a caring doctor. At the anti-pandemic front line, Confucian doctors compassionately cared for the sick and simultaneously provided humanistic medical care to patients who were in desperate. By relating patients as if they were their own parents, Confucian doctors comforted both the mind and body of elderly patients injured by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) virus. Likewise, they treated young patients as if they were their own children. In this way, Confucian doctors cared for every patient and person affected by the pandemic from their heart, which embodies the noble Confucian exhortation to

"Expending the respect of the aged in one's family to that of other families, and expending the love of the young ones in one's family to that of other families."²³

Although experienced a heavy workload, many TCM professionals tirelessly provided their patients with acupuncture, moxibustion, and other treatments. They also instructed them to learn traditional Chinese exercise methods, such as Tai Chi (太极) and Ba Duan Jin (八段锦). In this way, Confucian doctors helped their patients to reduce various adverse symptoms during the post-COVID-19 recovery period, enhance their resistance, and promote the complete recovery of their body functions. Confucian doctors' kind and care-giving practices have effectively alleviated the nervousness of patients caused by the infection and made them deeply aware of TCM's understanding of good health:

"More important than medical technology is morality and a benevolent heart. Doctors resolve illnesses, save souls, write prescriptions, and give humane solicitude."

Confucian TCM practices may also convince newly graduated medical students to confront the current tensions between doctor and patient. It helps them realize that a harmonious doctor-patient relationship is not just a formal slogan, but requires every doctor to actively practice these principles.

4 The enduring spirit of Confucian doctors

Confucian doctors' kindness in clinical practices helps people to realize that Confucian doctors are noble as they uphold medical ethics equally as important as superb medical skills. Medical ethics is part of the professionalism doctors should abide; humanities are part of the art of healing; when combined, humanities and medical ethics itself can be a cure for diseases. Thus, scientific knowledge and humanities are inseparable and complementary. While medicine belongs to the natural sciences, it is also a humanities subject. Scientific and humanistic pursuits can be mutually enlightening in concepts, methodologies, and construction of application.²⁴ They are essentially integrated in philosophical level. Thus, Confucian doctors typically practice both the spirit of science and humanism. Not only have they inherit the time-honored humanistic spirit, but they are also erudite in their interdisciplinary knowledge. Their pursuit of health, treating and preventing illness is unified by humanism and science, just as the balance between Yin and Yang in TCM.²⁵

4.1 Role model for new generations

Even during the pandemic, Confucian doctors have always adhered to their original responsibility of care, that is, "helping sick people to regain their lives; rescuing the weak and disabled to restore their health."²⁶

Thus, Confucian doctors impact their devotions to patients to medical students. In addition to improving students' academic performance, Confucian doctors set a role model for students. The Chinese version of the Hippocratic Oath, the "Virtues of A Great Physician (大医精诚)" states,

"When great doctors treat patients, they must quiet the spirit and settle the will, they must be free of wants and desires, and they must first develop a heart of great compassion and empathy. They must pledge to devote themselves completely to relieving the suffering of all sentient beings. If the patients come ask for help, they would not treat them differently whether they are rich or poor, old or young, beautiful or ugly, enemy or friends, Chinese or foreigners and foolish or intelligent. They would treat all patients like their close relatives."²⁷

This professional ethics of Confucian doctors have inspired new generations of TCM practitioners. The practice of medical ethics based on benevolence has not only set a model for contemporary medical education, but also effectively cultivates the humanistic spirit of reverence and caring in medical students.

4.2 Benefit the entire world

Following the global COVID-19 outbreak, TCM is gradually being used to help fight the pandemic internationally, a large number of Confucian doctors are also making important contributions.²⁸ As an important part of China's pandemic prevention and control measures, the efficacy of TCM treatments for COVID-19 is now well known. The "Diagnosis and Treatment Protocol for COVID-19" (新型冠状病毒肺炎防控方案) series issued by the National Health Commission of the People's Republic of China contains TCM diagnosis and treatment contents, which demand the integration of TCM with Western medicine to be strengthened and promotes the role of TCM.²⁹ Following a large number of clinical studies, according to changes in the disease, clinical, and scientific TCM researchers identified four treatment stages of COVID-19 infections: early, advanced, critical, and recovery. Many TCM preparations, including Qing Fei Pai Du Decoction (清肺排毒汤), Hua Shi Bai Du Decoction (化湿败毒汤), Xuan Fei Bai Du Decoction (宣肺败毒汤), Jin Hua Qing Gan Granule (金花清感颗粒), Lian Hua Qing Wen Capsule (连花清瘟胶囊), and Xue Bi Jing Injection (血必净注射液), have demonstrated good clinical efficacy for COVID-19.³⁰ TCM treatments can relieve the symptoms and shorten the course of disease for general patients, prevent the deterioration of the disease for severe and critically ill patients, and promote the rehabilitation process for patients convalescing from COVID-19.³¹ The advantages of integrating TCM with Western medicine can produce a synergistic effect through their complementary advantages, which is reflected in medical treatments during the pandemic. Respiratory and circulatory support are important treatment methods in Western medicine, while TCM has a better effect in relieving symptoms and regulating physical status through its rehabilitation treatment during the recovery period. In addition, TCM has significant advantages in restoring physical fitness and promoting the absorption of residual pulmonary inflammation.³²

Global attention to the use of TCM in COVID-19 treatment is increasing; hence, visits to TCM clinics in European countries and America have soared.³³ In addition, Chinese pharmaceutical companies' overseas orders for TCM products are increasing rapidly. Scientific research institutions in Italy, Japan, and South Korea also hope that Chinese experts will share their TCM diagnosis and treatment experiences. China has sent many TCM experts with rich anti-pandemic experience to Italy, Cambodia, Sierra Leone, Zimbabwe,

and Equatorial Guinea, among others.^{34,35} China is working with other countries to fight against the pandemic, and Confucian doctors globally are ceaselessly working to protect society using various kinds of TCM therapies.³⁶

When China entered the most difficult period of fighting against the pandemic in February 2020, TCM experts from multiple countries jointly issued a "Traditional Chinese Medicine for International Anti-Pandemic Proposal." This proposal suggested that global TCM scholars take advantage of Internet to disseminate their experiences of using TCM in the prevention and treatment of infectious diseases. In addition, TCM practitioners also use the "Overseas Traditional Chinese Medicine Prevention and Control Internet Public Service Platform for COVID-19" to provide people with free online TCM consultations and methods for preventing COVID-19. More than 20 TCM experts from China, Italy, France, the United Kingdom, Spain, the United States, Australia, Canada, New Zealand, Thailand, Austria, Belgium, and Japan delivered tele-health consultation using the platform.³⁷ The platform is an important force in using TCM to prevent and control the COVID-19 pandemic. It has provided strong support for TCM's anti-pandemic activities internationally and has attracted attention from the international medical communities. Many countries have expressed their trusts in TCM, for example, netizens from India, the United States, Tanzania, and other countries have all expressed great interest in using TCM to treat COVID-19. The US Cable News Network also cited data from relevant Chinese medical institutions that the combination of TCM and Western medicine quickly alleviates the symptoms of COVID-19 patients, increases the cure rate, and reduces the mortality rate.³⁸

Sponsored by the World Federation of Chinese Medicine Societies (WFCMS) and Beijing University of Chinese Medicine, the "Global Live Broadcast of Frontline Experiences of Traditional Chinese Medicine in Fighting against COVID-19" was held online in April 2020. Dozens of medical experts shared their TCM experiences in China's fight against the pandemic online. More than 1 million viewers from over 20 countries worldwide were recorded during the broadcast. Medical experts from Germany, Australia, Hungary, the United Kingdom, and other countries subsequently discussed how to combine their clinical research to timely and effectively introduce TCM prevention and treatment in their home countries, including replacing banned drugs in effective TCM prescriptions using traditional Chinese patent medicines.³⁹

In addition, the WFCMS also held three global live broadcasts presenting TCM experts' experiences in fighting against the global COVID-19 pandemic. Members and representatives from more than 30 countries participated in the online broadcasts. Among the

TCM experts, Professor Zhang Boli, Huang Luqi (黄璐琦), and Tong Xiaolin (仝小林) shared their experiences in using TCM to prevent and control the COVID-19 pandemic. Many news media simultaneously promoted the live broadcasts and has helped attracted participants from more than 40 countries.⁴⁰⁻⁴²

5 Conclusion

The unique advantages of TCM in the prevention and treatment of infectious diseases are based on the complex composition of TCM compounds, a wide range of treatments, as well as in addition to their multiple approaches and targets.⁴³ TCM has been used during major epidemic outbreaks throughout the long history in China. Thus, under the guidance of TCM concepts and theories of syndrome differentiation, there is a long list of TCM prescriptions to combat infections.^{44,45} Nobel laureate Madame. Tu Youyou (屠呦呦), representative figure of Confucian doctor, from the China Academy of Chinese Medical Sciences said,

“It is my dream that Chinese medicine will help us conquer life-threatening diseases worldwide, and that people across the globe will enjoy its benefits for health promotion.”⁴⁶

TCM has once again justified itself during the COVID-19 pandemic. It has simultaneously demonstrated its important value to humanity. The TCM industry will work hard to cooperate with the WFCMS to promote the continuous development and growth of TCM, cultivate more outstanding Confucian doctors, and adhere to professional TCM ethics. TCM's cultural soft power can be improved continuously to make greater contributions to global health care of all humankind.

The COVID-19 pandemic recognizes no borders and the SARS-CoV-2 virus is the common enemy for all humankind. Therefore, all countries need to work together to end the COVID-19 pandemic globally. After extensive clinical trials, the integration of TCM with Western medicine is now understood to be a better treatment for COVID-19 than stand alone Western medicine.⁴⁷ Integrated TCM and Western medicine is a major feature of China's COVID-19 prevention and control strategy. In particular, the unique advantages of TCM played a significant role in the fight against COVID-19.⁴⁸ Considering the significant results achieved, the WFCMS recommended that the World Health Organization should recommend the inclusion of TCM in COVID-19 treatments to inhibit the rapid spread and to protect human lives.⁴⁹ Distinguished TCM practitioners like “Confucian doctor” will simultaneously be making great efforts to identify the active ingredients and therapeutic mechanisms of medicinal substances that combat SARS-CoV-2 virus in TCM. TCM is a powerful weapon for humans in conquering various diseases.

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Ethical approval

This study does not contain any studies with human or animal subjects performed by any of the authors.

Author contributions

Qiu-Yan Li, Wei-Liang Weng, and Xu-Jie Wang conceived and designed the study. Xu-Jie Wang drafted the article. Qiu-Yan Li and Wei-Liang Weng supervised the study. All authors contributed to data collection, analysis, and interpretation. All authors revised the manuscript and approved the final version before submission.

Conflicts of interest

The authors declare no financial or other conflicts of interest.

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Historical Medical Exchanges Following the Confluence of Traditional Chinese Medicine and Western Medicine: Coexistence and Mutual Development

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Abstract

This article examines the overall characteristics of historical medical exchanges between China and foreign countries, analyzing their contribution to the development of medicines in the world. It presents a summary of historical experiences of the development of medicines through mutual exchanges. It also provides an objective analysis of the effects of the eastward dissemination of Western medicine on traditional Chinese medicine. The history of their exchanges can be used as a mirror for each to learn from the other's strengths to offset their own weakness, and achieve the coordinated and balanced development of both traditional Chinese medicine and Western medicine. Such balanced development would enable the world's medicinal systems to thrive and protect the health of people worldwide.

Keywords: Historical medical exchanges; Medical development; Traditional Chinese medicine; Western medicine

1 Introduction

Traditional Chinese medicine (TCM), which has spread throughout the world, remains strong and remarkably inclusive of other medical systems. The wide spread of TCM not only influences other medical systems but also promotes the development of TCM itself and has made substantial contributions to the development of the global medical industry. Following its introduction in China, Western medicine (WM) had a huge impact on TCM concepts, diagnostic and treatment methods as well as its pedagogical methods, even prompting a survival crisis for TCM. However, the eastward dissemination of WM also created underlying conditions for the revival and advancement of TCM. Given the Chinese

government's current attention to and strong support for TCM, it has regained its vitality and is making new contributions to the development of the global medical system.

2 Brief history and general trends of medical exchanges between China and foreign countries

2.1 Brief history of medical exchanges between China and foreign countries

China's medical exchanges with foreign countries were first initiated with eastern neighbors, notably Japan and Korea. During the Han dynasty (202 BCE to 220 CE), such exchanges gradually expanded westward to Central Asia and Western Asia. During the Ming and Qing dynasties (1368 CE to 1912 CE), they expanded to Europe, America, and other parts of the world.

The earliest medical exchanges between China and foreign countries can be traced back to the Western Zhou dynasty (1100 BCE).¹ At that time, medical exchanges had already been initiated between China and Korea. According to *Shi Ji* (《史记》 *Historical Records*), after Ji Zi (箕子) explained his great idea about how to govern a country, King Wu of the Zhou dynasty (周武王) was deeply impressed and appointed him as the minister of Korea.² During their exchange, they discussed the theory of five elements and the concepts of yin and yang. The medical exchanges between China and Japan dated back to around 1000 BCE. Xu Fu's (徐福) adventure to Japan on a quest for immortality was a historical event of great influence, which was recorded in *Shi Ji, Taiping Yulan* (《太平御览》 *Imperial Readings of the Taiping*

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Era) and *Yi Yu Zhi* (《异域志》 *Records of Exotic Areas*). Sino-Vietnamese medical exchanges have a long history. In 257 BCE, Cui Wei (崔伟), a TCM physician, cured a Vietnamese official of asthenia.³ Medical exchanges between China and India can be traced back to the pre-Qin period (before 221 BCE), with the earliest exchanges between the two countries being linked to the introduction of Indian Buddhism in China. The translation of Buddhist scriptures into Chinese and the visits of Indian monks brought Indian medicine to China.

During the Han dynasty (202 BCE to 220 CE), frequent medical exchanges took place between China and countries in Central Asia and Western Asia. Zhang Qian (张骞) of the Western Han dynasty (202 BCE to 8 BCE) and Ban Chao (班超) of the Eastern Han dynasty (25 CE to 220 CE) served as envoys to countries in Central Asia and Western Asia and brought back a variety of medicinal plants from the Central Asian countries.

During the period of the Three Kingdoms (220 CE to 280 CE), Korea actively sought access to Chinese medical theory and experience. Before the Meiji Restoration, Chinese medicine and herbs played a major role in Japan.

From the Western Jin dynasty (265 CE to 316 CE) to the Southern and Northern dynasties (420 CE to 581 CE), exchanges between China and Southeast Asia became increasingly close. Tortoise shell, ivory, and various spices were introduced into China.⁴

During the Sui and Tang dynasties (581 CE to 907 CE), the medical exchanges between China and other countries, including Korea, Japan, India, and Arabia, were active and frequent unprecedentedly. A large number of Chinese medical works were disseminated to many countries or regions, such as Korea, Japan, and Arabia. Both Japan and Korea emulated China's medical systems and imported a complete set of medical education systems, teaching materials, and curricula. The relationship between China and the Central Asian countries also advanced considerably. Nestorians not only introduced WM and Arabic medicine to China, but also brought TCM to Arabia. Chinese alchemy was disseminated to Arabia, which had considerable influence on alchemists in Arabia.

During the Song and Yuan dynasties (960 CE to 1368 CE), many Arabic drugs were introduced into China, such as Xi Jiao (犀角 *Cornu Rhinocerotis*) and Ru Xiang (乳香 *Olibanum*). Some Arabian pharmaceutical preparations and prescriptions began to circulate in China,⁵ which sparked the development of pharmaceutical preparation methods in China.

During the Ming and Qing dynasties (1368 CE to 1912 CE), Chinese variolization was first introduced in Korea and Japan,⁶ then later in Russia and Turkey, and finally, in the United Kingdom and other parts of Europe. At this time, missionary physicians began to introduce WM in China by carrying out frequent medical activities and establishing new clinics and hospitals. The penetration of WM became ever wider, and by the

beginning of the 19th century, WM had gradually gained a foothold in China.

WM was introduced into China from Japan during the modern era, and has since been evolving continuously in China. At the same time, acupuncture and moxibustion were widely disseminated in Europe and the United States,⁷ and TCM expanded its presence globally. From the 20th century onward, WM knowledge has been widely disseminated and understood in China, ensuring that WM in China has kept pace with world medicine. Moreover, WM has established its own system in China, and has been disseminating more widely as a force that has kept pace with TCM in safeguarding people's health.

2.2 General trends of medical exchanges between China and foreign countries

The history of medical exchanges between China and foreign countries shows clear trends during different stages. At an early stage, TCM spread to neighboring countries in East Asia, and then to Southeast Asia, South Asia, Arabia, and other parts of the world. After the Ming and Qing dynasties, this trend was reversed. The eastward dissemination of WM became predominant, and WM gradually gained a foothold in China and continued to advance in the country.

3 Contributions of medical exchanges between China and foreign countries to the development of global medicines

Medical exchanges between China and foreign countries not only enriched TCM knowledge and the diversity of systems of medicine but also contributed to the establishment of medical systems and the development of medical education in various countries. At the same time, they have helped to preserve the content of many medical works that were not successfully handed down by past generations in foreign books. Medical exchanges have had a positive impact on the development of medicine in countries around the world and have contributed greatly to the world's medical work.⁸

3.1 Promoting the development of medicine in countries around the world

During the Sui and Tang dynasties, the rapid development of TCM had a profound impact on medical cultures in various countries. The knowledge of TCM penetrated into the medical works of these countries.

In 808 CE, Japanese physicians compiled 100 volumes of the *Categorized Collection of Medical Formulas in Datong Era* (だいどうるいじゅほう) based on the following Chinese classics: *Su Wen* (《素问》 *Basic Questions*), *Huangdi Zhenjing* (《黄帝内经》 *Huangdi's Classic of Acupuncture*), *Zhenjiu Jiayi Jing*

(《针灸甲乙经》*The Systematic Classic of Acupuncture and Moxibustion*), and *Xinxiu Bencao* (《新修本草》*Newly Revised Materia Medica*).⁹ *Prescriptions with Physicians' Benevolence* (いしんほう) cited a total of 204 medical and non-medical works as well as 10,877 articles, most of which were from ancient Chinese medical works. In the 16th century, innovative research was performed in Japan, where TCM knowledge was used to develop a different medicine that evidently originated from TCM, namely Kampo or Huanghan medicine. During the Edo Period (1608 CE to 1868 CE), Japanese physicians compiled and published more than 1,000 books on Kampo medicines by studying, researching, and developing TCM.

In 1433, *The Grand Compendium of Medical Herbs* (향약집성방), which referred to 212 Chinese medical works, was compiled in Korea. *The Categorized Collection of Medical Formulas* (의방유취), compiled in 1445, cited 153 medical works of the pre-Ming dynasties in China. Korean practitioners strived to integrate medical experience derived from TCM into their own culture, philosophy, medicines, and pharmacopeia, and established their own medical system, which became known as "Oriental Medicine."

3.2 Promoting the establishment of medical systems and the development of medical education in various countries

During the Sui and Tang dynasties, Japan introduced a comprehensive system of Chinese medical education. Following the dispatch of envoys by the Japanese Empress, Suiko, to China under the Sui dynasty, Japan began to actively introduce Chinese laws and regulations, including the Chinese medical management system. *The Medical Code* (いしちりょう) in *The Taiho Code* (たいほうりつりょう) was Japan's earliest formulation of a coded medical management system, which almost completely imitated the Chinese medical system under the Sui and Tang dynasties. The medical textbooks referred to in *The Taiho Code* were also from China and included *Zhenjiu Jiayi Jing*, *Mai Jing*, *Xinxiu Bencao*, and *Huangdi Zhenjing*.

Under Korea's Unified Silla era (676 CE to 935 CE), the medical education system, teaching materials, and curricula that prevailed during the Sui and Tang dynasties were introduced into Korea. During the reign of Wen Zong (文宗) of the Goryeo dynasty (918 CE to 1392 CE), systems of medical management and medical education were established, which emulated those of the Song dynasty.¹⁰ Medical systems and institutions were also established, which were similar to those in China at that time, that is, the Imperial Medical Bureau and the Bureau of Administration of Royal Medicinal Affairs. Medical education institutions were set up to teach medicine,

and a medical examination system was implemented throughout Korea.

3.3 Promoting the development of TCM

Whereas TCM was widely disseminated outside of China, it also absorbed experiences from different foreign countries, which contributed to the introduction of many valuable medicinal materials in China, and thereafter the initiation of medicinal materials trade with China.¹¹ At the same time, not only drugs but also medical works and formulas from all over the world were introduced in China. For example, a formula from Korea for treating beriberi was recorded in *Waitai Miyao* (《外台秘要》*Arcane Essentials from the Imperial Library*). Many famous medical works from the Tang, Song, Yuan, and Ming dynasties were incorporated and compiled in Korean medical works, such as *Prescriptions with Physicians' Benevolence*, *The Grand Compendium of Medical Herbs*, and *Precious Mirror of Oriental Medicine* (동의보감), which helped to preserve dozens of medical works that were not transmitted in the course of Chinese history. These works were subsequently reintroduced into China and had a significant impact on TCM. They provided rich materials from which later generations could acquire information about ancient medical works and were also of great value to TCM clinical practice, medical history, literature, and collection of books in different versions.

Indian medicine was introduced to China via Buddhism. According to the records of *Sui Shu* (《隋书》*The Book of the Sui Dynasty*), more than 10 Indian books were translated into Chinese, including the *Nagarjuna Bodhisattva Formularies* (नागार्जुनबोधसिद्धान्त). Indian formulas and therapeutic methods for treating eye diseases were introduced in China, and they promoted the development of TCM ophthalmology. Some of them are still used in contemporary clinical practice.

Huihui Yaofang (《回回药方》*Medicinal Formulas of the Hui People*) compiled during the period of the late Yuan dynasty was based on concepts in Arab medicine, but it also recorded many TCM formulas and terms. It reflected the integration of medical experiences of Hui nationality and TCM at that time. This text recorded orthopedic knowledge in Arab medicine, including the causes, pathogenesis, diagnosis and treatment of soft tissue injuries and joint dislocations, as well as some of their complications. Its main contribution to the progress of TCM lay in the fields of surgery and orthopedics.

During the Meiji Restoration period, although Kampo medicine was abolished in Japan, about 570 important Japanese works on Kampo medicine were widely disseminated in China. These works were of considerable academic value, which included the annotation and textual research of *Huangdi Neijing* (《黄帝内经》*The Yellow Emperor's Inner Classic*), research on Zhang Zhongjing's (张仲景) theory, and the clinical application

and experience of Kampo medicine.¹² They not only provided a way to understand mainstream medicine in Japan but they also greatly enriched TCM knowledge and provided many important reference works about TCM practice in Japan.

3.4 Preserving lost medical works in works from other countries

Most of the ancient medical works in China were engraved on oracle bones or written on silk cloth, bamboo slips, or wooden slips. Therefore, it was difficult to preserve them well over a period of about 2000 years. In addition, numerous wars in ancient China, coupled with the policy of the Qin dynasty (221 BCE to 207 BCE) of burning books and burying Confucian scholars alive, resulted in the loss of many medical works. However, some of them had been disseminated to foreign countries before they were lost, so these works were fortunately well preserved. For example, a large number of Chinese medical works had been printed in many other countries, such as Korea and Japan. Although many medical works in China were lost, versions of these works with reliable texts still exist in Japan and Korea. In 1093, a Korean delegation respectfully presented the lost classic, *Huangdi Zhenjing*, to Emperor Zhe Zong (哲宗) of the Song dynasty, which attracted considerable attention from the government and the public.¹³ The two ancient versions of *Shang Han Lun* (《伤寒论》 *Treatise on Cold Damage*) were respectively edited during the Campion era and the Koji era of Japan. Moreover, Wang Bing's (王冰) *Zhu Huangdi Suwen* (《注黄帝素问》 *Annotations on Huangdi's Basic Questions*) were also well-preserved because of their earlier dissemination to Japan.

Some Chinese medical works preserved in foreign medical works had considerably referential value for the restoration of other medical works. For example, the Korean medical work, *Categorized Collection of Medical Formulas*, and the Japanese medical work, *Prescriptions with Physicians' Benevolence*, were two such important medical works. *Jingxiao Chanbao* (《经效产宝》 *Valuable Experience in Obstetrics*), the first Chinese obstetrics text, was restored on the basis of the *Categorized Collection of Medical Formulas. Prescriptions with Physicians' Benevolence* was compiled mainly on the basis of *Zhubing Yuanhou Lun* (《诸病源候论》 *Treatise on the Origins and Manifestations of Various Diseases*) and more than 80 other medical works from the Sui and Tang dynasties. Therefore, *Prescriptions with Physicians' Benevolence* was very helpful for obtaining a general idea of the lost Chinese medical works. These examples illustrate the important role of medical exchanges between China and foreign countries in the protection and restoration of lost works.

3.5 Enriching the varieties of Chinese medicinal materials

The medical exchanges between China and foreign countries enriched varieties of Chinese medicinal materials as well as knowledge of materia medica. At the beginning of the Eastern Han dynasty, Ma Yuan (马援) brought back a large amount of Yi Yi (薏苡 *Semen Coicis*) from Jiao Zhi (交趾 the ancient Chinese name for Vietnam). During the Southern and Northern dynasties, China imported Chen Xiang (沉香 *Lignum Aquilariae Resinatum*) and Su He Xiang (苏合香 *Styrax*) from Vietnam.¹⁴ *Bencaojing Jizhu* (《本草经集注》 *Collective Commentaries on the Classic of Materia Medica*) recorded many Korean medicinal materials, such as Wu Wei Zi (五味子 *Fructus Schisandrae Chinensis*) and Wu Yi (茺萸 *Fructus Ulmi Macrocarpae Praeparata*). During the Tang dynasty, medicinal materials such as Hu Po (琥珀 *Succinum*) were introduced into China.¹⁴ *Xinxiu Bencao* and *Bencao Shiyi* (《本草拾遗》 *Supplement to 'The Grand Compendium of Materia Medica'*) recorded medicinal materials imported from Vietnam, such as He Li Le (诃黎勒 *Terminalia chebula* Retz.) and Su Fang Mu (苏方木 *Caesalpinia Sappan* L.). During the Five dynasties (907 CE to 960 CE), Li Xun (李珣) collected and sorted out medicinal materials from overseas, provided theoretical explanations, and then wrote *Haiyao Bencao* (《海药本草》 *Materia Medica from the Southern Seaboard Area*). The medical work recorded medicinal materials from Korea, including Bai Fu Zi (白附子 *Rhizoma Typhonii*), Hai Song Zi (海松子 *Pinus koraiensis* Sieb. et Zucc.), and Xuan Hu Suo (玄胡索 *Rhizoma Corydalis*).¹⁵ Shi Jun Zi (使君子 *Fructus Quisqualis*), an effective medicine for ascariasis, was imported from Vietnam during the Northern Song dynasty. *Zhu Fan Zhi* (《诸蕃志》 *Chau Ju-kua: His Work on the Chinese and Arab Trade in the Twelfth and Thirteenth Centuries, Entitled Chu-fan-chi*) recorded medicinal materials imported from Arabia into China, such as Mo Yao (没药 *Myrrha*), Ru Xiang (乳香 *Olibanum*), and Xue Jie (血竭 *Sanguis Draconis*). Arabic merchants also introduced Hu Lu Ba (葫芦巴 *Semen Trigonellae*) to China. These medicinal materials introduced from foreign countries enriched China's pharmacological knowledge base and the varieties of Chinese medicinal materials.

4 Huge impact on TCM caused by the eastward dissemination of WM

The eastward dissemination of WM has developed rapidly since the onset of the modern era. Its influence has enabled some blanks to be filled in China's medical field, which has benefited from particular strengths of WM, especially in the areas of chemotherapy, antibiotic treatment, and surgical methods. Due to its curative effects, WM has strong market competitiveness and good development opportunities. However, the introduction of

WM disrupted the unified pattern of TCM development in China, which even resulted in a crisis period for TCM, threatening its continued survival for a time. WM has an advantage over TCM in that it often has an immediate curative effect, and thus becomes the standard to evaluate medicine. This situation affects TCM research methods and education and also leads to deviations of TCM clinical practice from its normal paths, constraining the development of TCM's modern medical practice.¹⁶

4.1 Change of China's traditional mainstream medical system

TCM was the mainstream medicine system in China for thousands of years. It has demonstrated significant clinical efficacy in the treatment and prevention of disease as well as health preservation. Prior to the introduction of WM into China, TCM saved countless lives and made substantial contributions to safeguarding the health of people all over China. The introduction of WM broke the dominance of TCM in China, and created a situation of coexistence of the two systems of medicine.¹⁷ WM has had the lion's share of the medical market because of its comprehensive departments, advanced equipment, rational division of labor, standardized operations, evident curative effects, and convenient drugs, which effectively meet the developmental needs of the times. However, the development of TCM has been greatly constrained because of its failure to break through some of its own limitations and adapt to the needs of modern people and a fast-paced lifestyle.

4.2 Survival crisis faced by TCM for a time

The eastward dissemination of WM had significant impacts. The Japanese government and public advocated comprehensive westernization in medicine and medical education. Consequently, during the Meiji Restoration period, the government introduced a policy to abolish TCM and gradually implemented a ban on Kampo medicine. In 1873, Sensai Nagayo, who had studied WM in the Netherlands, became the director of the Health Bureau of Japan's Ministry of Education, Culture and Sports. Immediately after assuming office, he began to advocate the use of WM and introduced a series of regulations to abolish TCM. The most harmful in these regulations was the "Rules for the Academic Examination of Physicians," which required Kampo physicians to pass the "Physician Examination Rules," "Medical Practice Examination Rules," and "Physician License Rules" originally issued for WM physicians. Seven WM subjects were included in the examination.¹⁸ Only those who passed the above tests would be granted a license for medical practice. These regulations were strongly opposed by Kampo physicians, who spared no effort to dialog with the government and called for the revival

of Kampo medicine. However, these efforts ultimately failed, and Kampo medicine entered a period of steady decline. Even in the 20th century, Japanese Kampo medicine had still not returned to its former state.¹⁹

Perhaps influenced by Japan's decree to abolish Kampo medicine, the government of the Republic of China (1912–1949) also passed a motion to abolish traditional medicine. In February 1929, the Health Ministry held the first health convention at the level of the central government. At the meeting, Yu Yunxiu (余云岫), Chu Minyi (褚民谊), and others put forward four related proposals, which included the abolition of TCM, with the aim of destroying TCM.²⁰ To protect and preserve TCM, the TCM community took various measures, such as organizing associations to protest the move for abolition and submitting petitions to the government. Consequently, the proposals were not implemented. During this process, the TCM community also made many efforts to popularize TCM knowledge and compete for living space alongside WM, making major contributions to the preservation and development of TCM. However, the struggle for TCM's survival meant that it had to make many concessions to WM. Consequently, the development of TCM was greatly restricted.

4.3 Reflection on TCM research methods and therapeutic ideas

WM is the result of the continuous development of modern science and technology in multiple disciplines and fields. It focuses on microscopic world and accuracy, relies on instruments and equipment, and excels in the diagnosis and treatment of diseases. However, TCM attaches great importance to macroscopic world and holism, pays more attention to personal feelings by means of inspection, auscultation, inquiry and palpation, and excels in analogy. The practice of TCM is objective and effective, but in terms of detection accuracy and precision, it cannot compare with modern scientific instruments in WM. This has resulted in the incompatibility between TCM and WM.

TCM excels in differentiating disease patterns, while WM is efficient at differentiating diseases. Although there are many differences between them, if the differentiation of disease patterns and diseases are combined, WM can make up for the limitation of TCM in diagnosing the diseases which is hard to differentiate patterns. Similarly, TCM pattern differentiation can also make up for the deficiencies of WM. For example, many patients are diagnosed disease-free in WM but they feel uncomfortable by themselves, or some are diagnosed with a difficult and complicated disease in WM, but the curative effect is not good. In TCM, pattern differentiation helps to directly grasp the pathological state of body. Therapeutic methods, such as acupuncture and Chinese herbs, can be applied to adjust the body's potential

self-regulating abilities, comprehensively mobilize the body's resistance to disease, and rebuild the body's yin-yang balance.²¹ These are the advantages of pattern differentiation and treatment in TCM.

However, in the current diagnosis and treatment, many practitioners in both TCM and WM understand diseases and disease patterns from different perspectives, without fully considering their connection. Specifically, they do not notice that the same pattern may indicate different diseases, and the same disease may have different patterns, nor do they notice their different pathogenesis and clinical symptoms. Therefore, to improve the diagnosis and treatment level of TCM, it is necessary to combine the research on TCM disease patterns and WM diseases, and carry out the modern research on TCM clinical pattern differentiation. The combination of pattern differentiation in TCM and disease differentiation in WM will become the main mode of case selection in the current TCM clinical research, and one of the main ways for clinical integration of TCM and WM.

4.4 Optimization of traditional TCM education

Apprentice-style education, the traditional way to train TCM physicians, is to teach by words and deeds. WM physicians, on the other hand, are trained by a college-style education, which trains medical practitioners in batches with roughly the same teaching materials, basically the same teaching methods, as well as specimens and experimental operations with little difference. In modern times, to enable TCM education to enter the school education system, TCM universities and colleges have to set up TCM courses by imitating the education system of WM, and generally adopt the teaching mode of WM. These TCM colleges and universities have cultivated a large number of TCM practitioners to be actively engaged in clinical work, and have made outstanding contribution to China's medical work.

Apprentice-style education emphasizes the importance of medical practice and the cultivation of clinical ability. It follows the basic laws of TCM formation and development. Therefore, it is still popular in TCM education today and make positive contributions to TCM's further development. However, this way focuses on inheriting the experience of a few physicians, which tends to be narrow-minded and has sectarian views. The college-style education helps to solve this problem. More than 50 years of educational practice in China have proved that the education of TCM colleges and universities has become the main way for cultivating TCM practitioners.

Both apprentice-style education and college-style education play important roles in the cultivation of TCM practitioners, but both of them have their own shortcomings. One of the key points in today's education reform is to emphasize the philosophy of aptitude-oriented teaching and individualized education, which is

especially vital for TCM education. Therefore, the traditional apprentice-style education should be organically integrated into the modern college-style education of TCM. This helps to promote the inheritance of TCM experience and the cultivation of high-quality TCM practitioners with individual characteristics. In this way, TCM can be inherited and developed in a healthy way.²²

5 Promotion effect of WM's eastward dissemination on TCM

The eastward dissemination of WM introduced the hospital system to TCM, refined its labor division, and provided TCM with modern medical technology, enabling its expansion beyond its original scope and fields of treatment. At the same time, this shift has prompted the realization of the importance of cultural confidence and TCM revival among the Chinese population. The Chinese government should therefore develop the TCM culture, giving full play to its own advantages to help accelerate the international dissemination and refinement of TCM.⁸

5.1 Refining the labor division of TCM and expanding its therapeutic field

The introduction of the WM hospital system and the popularization of modern medical concepts have transformed the modes of clinical diagnosis and treatment used by TCM physicians, who have begun to follow the WM physicians to adopt a labor division model within different departments. In addition to internal medicine and surgical departments, more sophisticated departments, such as respiratory, cardiovascular, cerebrovascular, and endocrinology departments, become increasingly evident. The establishment of TCM hospitals indicates that more medical facilities could be applied to TCM treatment, which helps to promote TCM modernization and advances in medical science and technology. The wide application of surgical methods has made TCM break through its original treatment scope and its treatment field has been continuously expanding.

Influenced by the eastward dissemination of WM, patients are no longer bound to TCM clinics. A large number of TCM hospitals and departments have been established all over China, and modern diagnosis and treatment facilities are provided for TCM physicians for the convenience of patients seeking medical treatment, constituting a systematic medical system with a better division of labor and cooperation between the systems of TCM and WM.²³

5.2 Objective promotion of TCM innovation and development

The eastward dissemination of WM has prompted innovations of basic theories, Chinese medicinal materials

as well as diagnostic and treatment techniques in TCM, which are continuously applied to clinical practice. Recent studies on TCM are proliferating, and Chinese medicinal materials enjoys broad prospects. Under the guidance of traditional medical theory as well as clinical diagnosis and treatment practice, TCM can avail of modern Western science and technology to sort out and identify different varieties of Chinese herbs, which brings new and advanced knowledge about the microstructure and chemical properties of Chinese herbs.¹⁷ Through systematic and comprehensive experimental verification of the efficacy of traditional Chinese herbs, many new efficacious herbs that are not recorded in works on materia medica have been discovered and applied in clinical diagnosis and treatment. Scientific methods are used to extract chemical components from traditional Chinese herbs, whose active subcomponents would be further developed into new medicines.

For example, under the guidance of TCM theory, antimalarial drugs were screened and artemisinin was extracted to treat malaria worldwide. The medicine proved better curative effects than Western drugs. With the improvement of compound preparations of Chinese herbal medicines and the mass production of Chinese patent medicines, many drugs have been produced to treat common diseases, such as Huo Xiang Zheng Qi Liquid (藿香正气水) and Dan Shen Dripping Pill (丹参滴丸). In the present context in which COVID-19 is still prevalent, Chinese herbal medicines are widely used to treat it, which may not only reduce the incidence of critical illness but also alleviate the harm caused by the sequelae of the disease. Many Chinese herbal medicines with remarkable curative effects, which are available at relatively low cost and have minimal side effects, have once again attracted attention globally. TCM has made great progress in becoming an international medical system, and will stick to the path.²⁴

6 Conclusion and future perspectives

This article has presented a brief review of the history of medical exchanges between China and foreign countries to identify general trends and draw on historical experiences. On the one hand, it is important to understand the contributions of medical exchanges to the development of medicines globally, and gain historical experiences from the process of medical exchanges. The historical experiences could provide both domestic and foreign references for the development of TCM. On the other hand, understanding the process of the eastward dissemination of WM and its huge impact on TCM helps to elucidate the reasons why WM has gradually been gaining strength, whereas TCM still faces many difficulties in both its development and worldwide dissemination. In light of this understanding, it is expected that TCM should get rid of its minor position by making up for its weaknesses and deficiencies and promote its development.

In the history of medical exchanges between China and foreign countries, TCM is in an ever-changing course to pursue both its coexistence with WM and its further development. The reason why WM has become the mainstream medicine system in modern times lies in its well-recognized scientific nature. By contrast, some people think that TCM is “unscientific” because modern scientific theories are sometimes unable to explain TCM or find it difficult to do so. However, TCM has many unique advantages over WM. TCM physicians do not just seek the causes of diseases within the human body itself but they also consider them comprehensively from many aspects. The curative effects of TCM do not come from scientific research under the guidance of standards in WM²⁵; rather, they stem from long-term practice in medical treatment. Although TCM was suppressed by WM over a long period, it has achieved remarkable success in many aspects. In conclusion, TCM and WM are two approaches for treating diseases. If they can be used effectively and rationally by complementing each other, they will surely benefit both human health and social development.

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Ethical approval

This study does not contain any studies with human or animal subjects performed by any of the authors.

Author contributions

Zhan Chen and Xiao-Jie Liu designed the study; Shi-Yun Chen and Kun Qu wrote the manuscript; Xiao-Jie Liu and Zhan Chen edited and revised the manuscript. This manuscript has been read and approved by all the authors.

Conflicts of interest

The authors declare no financial or other conflicts of interest.

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Clinical Application of Gaofang (Medicated Paste) in Cardiovascular Disease

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Abstract

Gaofang (medicated paste), also known as gaoji in Chinese, is one of the eight dosage forms of traditional Chinese medicine. Originated in the Han and Tang dynasties, it is widely used in Shanghai, Jiangsu, Zhejiang, and Guangdong of China at present. It is generally believed that Gaofang can help reinforce deficiency, delay aging, and regulate the overall health status. Currently, Gaofang has been extensively used in the treatment of cardiovascular disease. Based on the relevant literature and clinical experience, this article reviews the general situation and the clinical application of Gaofang as well as the common Chinese medicines in Gaofang for cardiovascular diseases.

Keywords: Cardiovascular disease; Clinical application; Coronary heart disease; Gaofang (medicated paste); Hypertension

1 Introduction

Gaofang (膏方 medicated paste) is a Chinese medicine prescription with special composition and preparation methods. It plays a unique role in clinical practice and reflects the concept that “when there is Zhengqi (healthy qi) inside the body, Xie (evil) cannot invade the body”¹ recorded in *Huangdi Neijing* (《黄帝内经》 *The Yellow Emperor's Inner Classic*) as well as the treatment idea of “tonifying the body and reinforcing healthy qi, while removing pathogenic factors.” Gaofang has unique advantages in disease prevention, that is, preventing the development of a disease before it occurs, the progression of a disease after it occurs, and the relapse of a disease after recovery. Therefore, Gaofang is deeply loved by common

people.² Growing evidence indicates that Gaofang has significant health benefits against chronic diseases, particularly cardiovascular disease³ that is one of the major diseases threatening the lives of human beings, especially the middle-aged and elderly people in the world. As the aging population continues to grow, there has been a significant rise in the prevalence of cardiovascular disease in China. This article summarizes features of Gaofang and its clinical application in cardiovascular diseases based on the relevant literature and clinical experience in recent years, thus providing reference for the clinical use of Gaofang to treat cardiovascular diseases.

2 General situation of Gaofang

Gaofang, also known as gaoji (膏剂) or gaozi (膏滋), is one of the eight dosage forms of traditional Chinese medicine (TCM) (Fig. 1). Gaofang is a semi-fluid dosage form prepared by fully soaking and decocting ingredients of the herbal formula in water for a long time. After removing the dregs of the decoction, the solution is concentrated by continuous evaporation, along with the addition of proper amount of dissolved gum, sugar, honey, or xylitol. The decoction is then kept stirring until it reaches a state that “a small amount of decoction is dipped into water and the droplets disperse and then gather again.” After that, the decoction is sterilized into Gaofang. Gaofang is mainly divided into two types. One type is made from a patent Chinese herbal formula and the other type is made upon individualized body constitution, yin, yang, qi, and blood after the four diagnostic methods (inspection, listening and smelling, inquiry, and palpation), that is, “one prescription for one person.”⁴

The basic composition of Gaofang is the same as that of a decoction, which can be divided into four groups, “monarch, minister, envoy and courier.” In the chapter

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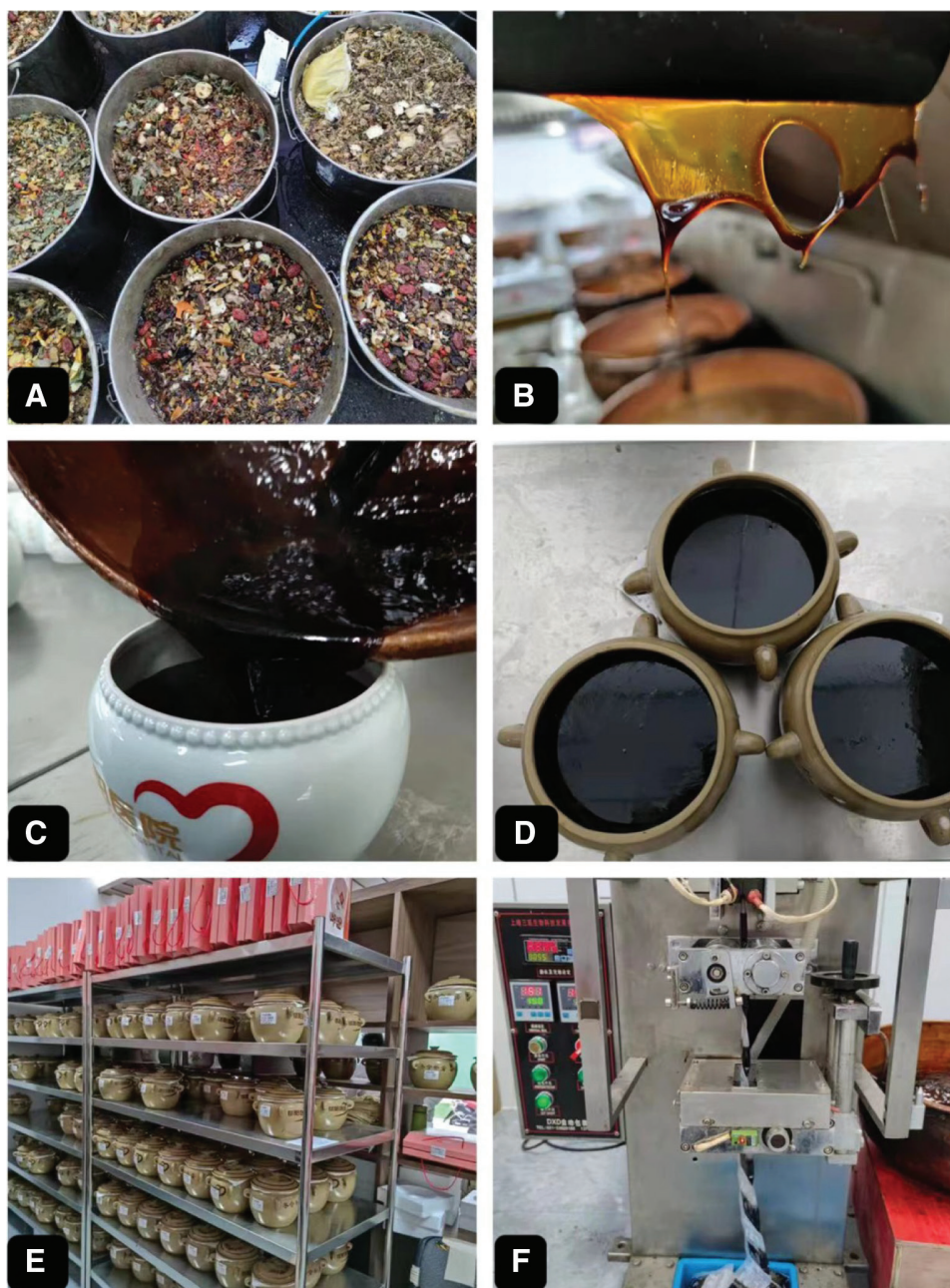


Figure 1 Gaofang-making process. (A) soak herbs in water; (B) “hang up a flag” (the paste solidifies in midair, forming an inverted triangle or rectangle like a flag); (C) pour the decoction into separate containers; (D) condense the decoction; (E) Gaofang after processing; (F) automatic packaging machine.

Zhizhenyao Dalun (至真要大论 Discussion on the most important and abstruse theory) of *Su Wen* (《素问》 Basic Questions), there is the records that “the drugs for treating disease are monarch drugs; the drugs for assisting the monarch drugs are called the minister drugs; and the drugs for corresponding to the minister drugs are called the envoy drugs.”¹ This principle also applies to Gaofang. Unlike the decoction, the composition of Gaofang is more complex, often consisting of 30 to 40 ingredients (twice the number of ordinary decoction formulas) categorized into monarch, minister, envoy, and courier.

Gaofang has fewer limitations than that of decoction. It can increase or decrease the ingredients according to the patient’s individual conditions. Due to complex etiology and pathogenesis, non-infectious cardiovascular diseases require long-term treatment. Since long-period use of medicines for cardiovascular diseases may affect the gastrointestinal function, the long-time boiling during the preparation of Gaofang is beneficial to the release of active ingredients. In addition, it is easy to carry, store, and use, with a long shelf life, which can increase the patients’ compliance (Table 1).

Table 1 Common Gaofang for cardiovascular diseases

Examples of common cardiovascular diseases	Effective chemical composition	Common Chinese medicines	Basic formula of Gaofang
Hypertension	Alkaloids, saponins, etc.	Gou Teng (钩藤 <i>Ramulus Uncariae Cum Uncis</i>), Wu Zhu Yu (吴茱萸 <i>Fructus Evodiae</i>), Tian Ma (天麻 <i>Rhizoma Gastrodiae</i>), Chuan Xiong (川芎 <i>Rhizoma Chuanxiong</i>), Dan Shen (丹参 <i>Radix et Rhizoma Salviae Miltiorrhizae</i>), etc.	Tian Ma Gou Teng Decoction (天麻钩藤饮), Zhen Gan Xi Feng Decoction (镇肝熄风汤), Liu Wei Di Huang Pill (六味地黄丸), Er Zhi Pill (二至丸), Long Dan Xie Gan Decoction (龙胆泻肝汤), Ban Xia Bai Zhu Tian Ma Decoction (半夏白术天麻汤), Bu Yang Huan Wu Decoction (补阳还五汤), Xue Fu Zhu Yu Decoction (血府逐瘀汤), etc.
Coronary heart disease	Flavonoids, saponins, alkaloids, volatile oil, etc.	Yin Xing Ye (银杏叶 <i>Folium Ginkgo</i>), Hong Jing Tian (红景天 <i>Radix et Rhizoma Rhodiolae Crenulatae</i>), Dan Shen, Ren Shen (人参 <i>Radix et Rhizoma Ginseng</i>), Mai Dong (麦冬 <i>Radix Ophiopogonis</i>), etc.	Bao Yuan Decoction (保元汤), Jin Kui Shen Qi Pill (金匮肾气丸), Er Xian Decoction (二仙汤), Dan Shen Decoction (丹参饮), Sheng Mai Powder (生脉散), Xiao Xian Decoction (小陷胸汤), etc.

2.1 Clinical application to cardiovascular diseases

Cardiovascular diseases can be divided into two categories: infectious and non-infectious diseases. The former includes infective endocarditis and infective myocardial inflammation; the latter includes coronary heart disease and hypertension. Nowadays, hypertension and coronary heart disease are common and primary risk factors for cardiovascular diseases, often complicated with hyperlipidemia, hyperglycemia, hyperviscosity, and arteriosclerosis. These diseases often have a longer duration. According to the TCM theory, factors contributing to cardiovascular diseases include age, improper diet, emotional disturbances and overexertion. These factors may cause disorders of qi and blood and imbalance of yin and yang.⁵ In TCM, cardiovascular diseases often result from deficiency of yin, yang, qi, or blood but exhibit excess symptoms due to blood stasis, phlegm dampness, and yin cold.

Cardiovascular diseases commonly affect the middle-aged and elderly population. In TCM, as a person ages, the kidney essence becomes deficient, the essential qi gradually weakens, and the sea of marrow gradually becomes insufficient, eventually resulting in deficiency of zang-fu organs. In addition, due to the long duration, cardiovascular diseases require comprehensive treatment for a long period.⁶ In this regard, Gaofang is a good option.

Before using Gaofang, two points should be taken into consideration. First, cardiovascular diseases with chronic duration may cause deficiency, kidney impairment, collateral disorder, qi stagnation and accumulation of dampness and phlegm. Second, traditional Gaofang focuses on supplement. It is thick and strongly flavored. The reason is that Gaofang generally contains glue or gelatin medicines such as donkey-hide gelatin, tortoise plate gum, antler gum. Therefore, after the decoction is condensed, it is difficult to digest, which is not suitable for the patients with phlegm and blood stasis. In this regard, the treatment principles are to reinforce healthy qi and also remove pathogenic

factors, and for different constitutions and illnesses, the degree of these two aspects should be considered.⁴ The prescription should nourish qi and blood while regulating blood circulation, disperse pathogenic factors while supplementing healthy qi, warm and tonify yang while generating body fluids, and promote bowel movements while harmonizing the spleen and the stomach.

The clinical application of Gaofang to cardiovascular diseases is based on disease differentiation, pattern differentiation, constitution differentiation and emotion differentiation.⁷

2.1.1 Disease differentiation

Changes in cardiovascular disease are rapid and complicated. Many other diseases are risk factors for cardiovascular diseases, such as diabetes and hyperlipidemia. Therefore, in clinical diagnosis and treatment, it is necessary to combine disease differentiation and pattern differentiation, and pay attention to long-term curative effect. For hypertension, the medicines with antihypertensive effects are commonly used, such as Tian Ma (天麻 *Rhizoma Gastrodiae*), Gou Teng (钩藤 *Ramulus Uncariae Cum Uncis*), Bai Ji Li (白蒺藜 *Fructus Tribuli*), dry Di Long (地龙 *Pheretima*), and Qing Xiang Zi (青葙子 *Semen Celosiae*). For diabetes, the medicines with hypoglycemic effects are commonly used, such as Huang Lian (黄连 *Rhizoma Coptidis*), Feng Wei Cao (凤尾草 *Herba Petridis Multifidae*), and Yu Zhu (玉竹 *Rhizoma Polygonati Odorati*).⁷

2.1.2 Pattern differentiation

The process of pattern differentiation is a comprehensive examining process of the internal and external environment of the human body. Formulas should be composed according to different symptoms and patterns of the disease. This principle should be followed in prescribing a formula. Since blood stasis due to qi stagnation, internal obstruction of phlegm, and dampness, as well as liver

and kidney deficiency are the most common patterns of cardiovascular diseases, the formula should be modified based on these patterns.⁷

2.1.3 Constitution differentiation

TCM emphasizes treating diseases according to the individual conditions. In addition to pattern differentiation, the patient's constitution should also be taken into consideration. Before prescribing a formula, it is necessary to clarify the patient's susceptibility to different diseases. For example, depression or anger may impair liver qi and subsequently cause the constitution of blood stasis due to qi stagnation. Over ingestion of fatty and sweet food may accumulate dampness and produce phlegm, thus resulting in the constitution of phlegm and dampness. These constitutions are closely related to the occurrence of cardiovascular disease. Therefore, paying attention to the patient's constitution is beneficial to the prevention and treatment of the disease.⁷ Doctor Jin Minglan (金明兰)⁸ is good at selecting medicines according to the constitutions of patients. For constitution of qi deficiency, she uses Huang Qi (黄芪 *Radix Astragali*) and Sheng Shai Shen (生晒参 *Radix et Rhizoma Ginseng Cruda*). For phlegm and dampness, she uses Bai Zhu (白术 *Rhizoma Atractylodis Macrocephalae*) and Fu Ling (茯苓 *Poria*). For blood stasis, she uses Tao Ren (桃仁 *Semen Persicae*) and Hong Hua (红花 *Flos Carthami*). For depression, she uses Chai Hu (柴胡 *Radix Bupleuri*) and Zhi Qiao (枳壳 *Fructus Aurantii*).

2.1.4 Emotion differentiation

Cardiovascular diseases are closely interrelated with emotional disturbances. Emotional disturbances are clinical manifestations of qi and blood dysfunctions of zang-fu organs, and can also become pathogenic factors for emotional diseases. Emotional factors have a strong impact on such cardiovascular diseases as hypertension, coronary heart disease, arrhythmia, blood lipids, and hemorheology. Correcting the excess of the five emotions can balance yin, yang, qi and blood, and restore the coordination of zang-fu functions.⁷

2.2 Clinical application of Gaofang to hypertension

Professor Zhou Duan (周端) reflected the nourishment nature of Gaofang in treating hypertension.⁹ He sets great store by promoting blood circulation and submerging yang. He suggests tonifying the five zang organs by following their characteristics and discharging the pathogenic factors by defying their characteristics. The treatment of cardiovascular disease should focus on nourishing yin (or supplementing qi and nourishing yin). For yin deficiency, doctors should adopt such yin-nourishing medicines as Mai Men Dong (麦门冬 *Radix Ophiopogonis*), Wu Wei Zi (五味子 *Fructus Schisandrae Chinensis*), Sheng Di Huang (生地黄 *Radix Rehmanniae*),

Bai Shao Yao (白芍药 *Radix Paeoniae Alba*), Huang Jing (黄精 *Rhizoma Polygonati*), Bai He (百合 *Bulbus Lili*), Shi Hu (石斛 *Caulis Dendrobii*), Yu Zhu (玉竹 *Rhizoma Polygonati Odorati*), Gou Qi (枸杞 *Fructus Lycii*), Dang Gui (当归 *Radix Angelicae Sinensis*), and He Shou Wu (何首乌 *Radix Polygoni Multiflori*), and add Bai Zhu, Fu Ling, Bei Shu Mi (北秫米 *Sorghum Husked*), and Yi Yi Ren (薏苡仁 *Semen Coicis*) to invigorate stomach qi, relieve dampness, resolve phlegm, and avoid obstruction of the Middle jiao caused by the yin-nourishing medicines. Patients with qi deficiency, dampness and phlegm are often overweight and easy to catch a common cold. Meanwhile, they often have a pale or enlarged tongue with teeth marks. The treatment should focus on strengthening the spleen, supplementing qi, eliminating dampness, and transforming phlegm. For such patients, Professor Zhou often adds the medicines to nourish kidney essence. Dan Shen (丹参 *Radix et Rhizoma Salviae Miltiorrhizae*), Chuan Xiong (川芎 *Rhizoma Chuanxiong*), Ze Lan (泽兰 *Herba Lycopi*), Pu Huang (蒲黄 *Pollen Typhae*), E Zhu (莪术 *Rhizoma Curcumae*), San Qi (三七 *Radix et Rhizoma Notoginseng*), Tao Ren, Hong Hua, Shui Zhi (水蛭 *Hirudo*), and Chuan Shan Jia (穿山甲 *Squama Manitis*) are commonly used to promote blood circulation and transform stasis. This treatment can help adjust the body's metabolic function, strengthen the immune system, promote blood circulation, and unblock the meridians. Therefore, it can be applied to treat the existing cardiovascular symptoms and prevent the potential symptoms. The spleen and stomach function of the elderly is weak. Thus, Gaofang for the elderly patients is often accompanied by the medicines that can regulate qi and strengthen the spleen, such as Lv E Mei (绿萼梅 *Flos Mume*), Chuan Lian Zi (川楝子 *Fructus Toosendan*), Yan Hu Suo (延胡索 *Rhizoma Corydalis*), Xuan Fu Geng (旋覆梗 *Caulis Inulae*), Mai Ya (麦芽 *Fructus Hordei Germinatus*), and Ji Nei Jin (鸡内金 *Endothelium Corneum Gigeriae Galli*). These medicines can either soothe the liver and regulate qi or harmonize the stomach to smooth the downbearing. In addition, they can eliminate the sticky nature of tonics and help the spleen to transport and absorb nutrients.

Professor Chen Jingwei (陈竞伟)¹⁰ has rich experience in treating hypertension with Gaofang, and his prescriptions have shown remarkable efficacy. Chen thinks that Gaofang has its unique indications for treating hypertension and the following three points should be taken into consideration: 1) tonifying and securing kidney qi to nourish the liver, which can remove the excessive pathogenic factors; 2) strengthening the spleen and stomach to prevent the invasion of excessive liver-qi; 3) regulating the imbalance of zang-fu organs by coordinating the condition of the whole body. The medicines must follow the nature of zang-fu organs, and overdose of tonic must be prevented. As for pattern differentiation, doctors should first identify the nature of deficient

root, then the nature of excessive tip, followed by the patient's general physical conditions such as diet, sleep and bowel movements, and finally, identify the patient's disease. In the treatment, the paired medicines are used as the monarch medicines, supplemented by the minister and envoy medicines.

Professor Gu Guolong (顾国龙)¹¹ believes that the choice of medicines for hypertension has something in common, for example, choosing Jia Wei Si Wu Decoction (加味四物汤) as the basic prescription. This formula can relieve the symptoms of hypertension, lower blood lipids, reduce blood viscosity, and prevent the damage of important organs and deterioration of disease. In the selection of medicine, attention should be paid to both the proportion and the dosage of the medicines for reinforcing healthy qi and removing pathogenic factors. In the clinical settings, the proportion and the dosage of the medicines for removing pathogenic factors is much more than that of the medicines for reinforcing healthy qi. Since most of the patients have an improper diet structure that may cause excessive calories, the proportion of the medicines for removing pathogenic factors can be increased. To reduce fire, Da Huang (大黄 *Radix et Rhizoma Rhei*), Huang Qin (黄芩 *Radix Scutellariae*), Huang Lian and Huang Bai (黄柏 *Cortex Phellodendri Chinensis*) can be selected; to promote urination, Da Fu Pi (大腹皮 *Pericarpium Arecae*), Fu Ling, Zhu Ling (猪苓 *Polyporus*) and Ze Xie (泽泻 *Rhizoma Alismatis*) can be selected; to submerge yang, Sheng Long Gu (生龙骨 *Os Draconis*), Xuan Shen (玄参 *Radix Scrophulariae*), Gou Teng and Shi Hu can be selected; to transform turbidity, Jiang Ban Xia (姜半夏 *Rhizoma Pinelliae Praeparatum*), Tian Ma, Bei Mu (贝母 *Bulbus Fritillaria*) and Gua Lou (瓜蒌 *Fructus Trichosanthis*) can be selected; to unblock collaterals, Di Long, Jiang Huang (姜黄 *Rhizoma Curcumae Longae*), Luo Shi Teng (络石藤 *Caulis Trachelospermi*) and Bai Hua She (白花蛇 *Agkistrodon*) can be selected; to eliminate stasis, Chi Shao (赤芍 *Radix Paeoniae Rubra*), Chuan Xiong, Tao Ren and Hong Hua can be selected. At the same time, attention should be paid to the dosage of the medicines that are dry, hot, and stimulating in nature. For example, overdose of such qi-supplementing medicines as Ren Shen (人参 *Radix et Rhizoma Ginseng*), Xi Yang Shen (西洋参 *Radix Panacis Quinquefolii*), Huang Qi and Ci Wu Jia (刺五加 *Radix et Rhizoma seu Caulis Acanthopanax Senticosi*) may cause fire. Besides, we should try to avoid adopting the medicines that contain high calorie, fat, cholesterol, or purine.

Professor Fu Deyu (符德玉) learned from many famous TCM experts. She has rich experience in treating hypertension and its target organ damage. She mainly adopts Tian Ma Gou Teng Decoction (天麻钩藤饮), Zhen Gan Xi Feng Decoction (镇肝熄风汤), or Gou Ju Di Huang Decoction (枸杞地黄汤) as the basic prescription, and modifies it with such blood-circulating and phlegm-resolving medicines as

Dan Shen, Chuan Xiong, Yi Mu Cao (益母草 *Herba Leonuri*), San Leng (三棱 *Rhizoma Sparganii*), E Zhu, Di Long, Di Bie Chong (地鳖虫 *Eupolyphaga seu Steleophaga*), Yu Mi Xu (玉米须 *Stigma Maydis*), He Ye (荷叶 *Folium Nelumbinis*), and Bian Dou (扁豆 *Semen Lablab Album*). Heavy medicines such as Long Gu, Mu Li (牡蛎 *Concha Ostreae*), and Zhen Zhu Mu (珍珠母 *Concha Margaritiferae Usta*) are also used. Since hypertension patients usually suffer from insomnia and palpitations, such medicines as Chai Hu, Yu Jin (郁金 *Radix Curcumae*), and Mei Hua (梅花 *Flos Mume*) are used to soothe the liver; Suan Zao Ren (酸枣仁 *Semen Ziziphi Spinosae*), Huai Xiao Mai (淮小麦 *Triticum aestivum* L.), Wu Wei Zi, Ling Zhi Cao (灵芝草 *Ganoderma*), Tie Luo (铁落 *Frusta Ferri*), and Hu Po Fen (琥珀粉 *Succinum*) are used to nourish the blood and calm the mind. The treatment principles are to treat the root and also the excessive tip including blood stasis, yang hyperactivity, and phlegm turbidity.

2.3 Clinical application of Gaofang to coronary heart disease

Professor Yan Dexin (颜德馨)¹² held that "Disharmony of qi and blood is the leading cause of diseases. Chronic and intractable diseases must manifest blood stasis and qi stagnation." Based on his clinical experience, he advocated harmonizing blood and qi as the treatment principle to promote blood circulation and qi movements, and subsequently dispel the pathogenic factors. Under the guidance of this principle, he mainly adopted the medicines that can promote blood circulation and qi movements. He thought that the pathological features of coronary heart disease were dysfunctions and chronic consumptive conditions of zang-fu organs, and its nature is deficient root and excessive tip caused by qi deficiency and blood stasis. Yan Shi Yi Xin Decoction (颜氏益心汤) is a representative formula to treat coronary heart disease, with the ingredients of Huang Qi, Dang Shen (党参 *Radix Codonopsis*), Chi Shao, Jiang Xiang (降香 *Lignum Dalbergiae Odoriferae*), Dan Shen, Ge Gen (葛根 *Radix Puerariae Lobatae*), etc.

Professor Pang Min (庞敏) believes that the key pathogenesis of coronary heart disease is disharmony of qi and blood coupled with dysfunctions of zang-fu organs.¹³ The treatment principles of Gaofang are to remove the invading pathogenic factors, reinforce healthy qi and prevent stagnation and stasis. In the adoption of Gaofang, he learned from many predecessors and established his own academic thoughts based on the theories of yin, yang, qi, and blood to prevent and treat diseases. The treatment method of Gaofang to coronary heart disease should focus on balancing yin and yang, benefiting qi and nourishing blood, supplemented by promoting blood circulation, unblocking meridians, and relieving pain.

3 Chinese medicines commonly used in Gaofang for cardiovascular diseases

Chinese medicines have unique strengths in treating cardiovascular diseases,¹⁴ for example, clear efficacy and strong activity with few side effects.¹⁵ The treatment principles are to promote blood circulation, remove blood stasis, nourish yin, and supplement qi. Commonly used Chinese medicines include Dan Shen, Ren Shen, Huang Qi, Mai Dong (麦冬 *Radix Ophiopogonis*), Yin Xing (银杏 *Ginkgo*), San Qi, and Ge Gen. This article mainly discusses the following four medicines.

3.1 Huang Qi

Huang Qi is the root of *Astragalus Membranaceus* (Fisch.) Bge. var. *Mongolicus* (Bge.) Hsiao or *Astragalus Membranaceus* (Fisch.) Bge. of the family *Leguminosae*. It is a traditional, well-known and commonly used Chinese medicine. According to TCM, Huang Qi can tonify qi, ascend yang, secure the exterior, stop sweating, remove toxins, drain the pus, induce urination, resolve edema, astringe wound, and regenerate flesh. Pharmacological studies have shown that Huang Qi can strengthen the immune system, strengthen the heart, and reduce blood pressure and blood sugar. It can also promote urination, delay aging, and combat tumors, fatigue, and virus.¹⁶

As for dealing with cardiovascular diseases, Huang Qi mainly shows strengths in the following two aspects.

- (1) Protection for the cardiovascular system. Huang Qi can regulate blood pressure, reduce pulmonary artery pressure, promote peripheral vascular dilation, improve heart function, and directly dilate the coronary artery. Huang Qi can increase and decrease blood pressure by dilating blood vessels and increasing stroke volume. This medicine can significantly reduce the level of inflammatory mediators in patients with hypertension, prevent and relieve the symptoms of atherosclerosis, and delay the damage to target organs. *Astragaloside* has a significant positive inotropic effect and can increase the amplitude and output of myocardial contraction. Besides, Huang Qi can improve myocardial oxygen consumption and protect myocardial cells by improving ventricular diastolic and systolic function. It has significant protective effects on drug-induced myocarditis, myocardial hypoxia, and ischemia-reperfusion injury.¹⁷
- (2) Improvement in blood rheology. Huang Qi can effectively reduce blood viscosity, improve the supply of nutrient and blood to tissues and organs, reduce the risk and the severity of microvascular diseases, and thus contribute to the prevention and treatment of cardiovascular diseases.¹⁸

3.2 San Qi

San Qi, with an extensive history in disease treatment, belongs to the genus *Acanthopanax*. It is warm in nature, sweet and slightly bitter in taste, and enters the liver and the stomach meridians. It can transform stasis, promote blood circulation, stop bleeding, and resolve swelling.¹⁹ It is widely used in treatment of ischemic cardiovascular and cerebrovascular diseases in the clinical settings. *Panax notoginseng saponins* is the main effective component of San Qi.²⁰

San Qi can shorten bleeding and coagulation time and has effects of anti-platelet aggregation and thrombolysis. It can also promote the proliferation of multifunctional hematopoietic stem cells and has hematopoietic functions. In addition, San Qi can reduce blood pressure, slow the heart rate, and shows protective effects on arrhythmia induced by various drugs. It can also reduce myocardial oxygen consumption and oxygen utilization, dilate cerebral vessels, and enhance cerebral vascular flow.²¹

3.3 Ren Shen

Ren Shen is the dried root and rhizome of *Panax ginseng* C. A. Mey. of the family *Araliaceae*. Known as the king of herbs, it is an important medicine for supplementing qi. Ren Shen is sweet and slightly bitter in taste, warm in nature, and enters the spleen, the lung, and the heart meridians. It can tonify the kidney and the spleen, supplement qi, generate fluids, alleviate thirst, and calm the mind. It is used for qi deficiency, weak pulse, and qi deficiency of the lung and the spleen. It can also be used for fever, qi stagnation, diabetes, palpitations, insomnia, forgetfulness, and convulsions.²²

Ren Shen is a famous tonic. In recent years, studies have shown that Ren Shen has certain cardiogenic effects, and thus, it is widely used in patients with cardiac insufficiency. However, excessive dosage of Ren Shen may weaken myocardial contractility. Among the ingredients of Ren Shen, saponin plays a major cardiogenic role. Saponin also has the function of promoting phosphate synthesis and enhancing lipoproteinase activity, which can accelerate the hydrolysis of fat and chylomicrons, thereby promoting lipid metabolism; it can also promote blood cholesterol conversion and reduce cholesterol levels. Its effect is mainly manifested in its clear dilating effects on the blood vessels of the brain, pulmonary arteries, and coronary arteries. It can effectively improve the blood circulation of organs.²²

3.4 Dan Shen

Dan Shen is the dried root and rhizome of *Salvia miltiorrhiza* of the family *Labiatae*. Dan Shen is bitter in taste, slightly cold in nature, and enters the heart and the liver meridians. This medicine can promote blood circulation, remove blood stasis, cool blood, unblock

meridians, alleviate pain, clear heart-fire, relieve restlessness, and resolve abscesses. Clinically, it is commonly used to treat angina pectoris, irregular menstruation, and dysmenorrhea.^{23,24}

In addition, Dan Shen can improve cardiovascular functions. Modern pharmacological studies have shown that Dan Shen can protect vascular endothelial cells, improve microcirculation, protect the myocardium, and exert anti-arrhythmic and anti-atherosclerotic effects.²⁵ It is widely used in the treatment of cardiovascular diseases. Dan Shen extract can reduce the occurrence of ventricular fibrillation and death caused by ventricular fibrillation. Salvianic acid A can block L-type calcium current, shorten the action potential duration of myocardial single cells, and reduce calcium influx, thus avoiding arrhythmia.

Other medicines including Chai Hu, Rou Gui (肉桂 *Cortex Cinnamomi*), Wu Zhu Yu (吴茱萸 *Fructus Evodiae*), and Hu Zhang (虎杖 *Rhizoma Polygoni Cuspidati*) are also commonly used to treat cardiovascular diseases. Most of them can invigorate blood, remove blood stasis or replenish qi.

4 Conclusion

In conclusion, Gaofang is the cream of TCM, and the crystallization of clinical experience of famous doctors. Compared with the TCM decoction, the dosage form, packaging and taste of Gaofang are more in line with the needs of modern people, as it is easier to carry, transport, and more convenient to take. It has shown a marked effect in the prevention and management of cardiovascular diseases,²⁶ because of its action in tonifying heart qi and blood. The idea that Gaofang can benefit the health and wellness has been extensively accepted by all walks of life. Cardiovascular diseases can greatly affect the patients' quality of life. Hopefully, Gaofang can be helpful in the treatment of cardiovascular diseases.

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Ethical approval

This study does not contain any studies with human or animal subjects performed by any of the authors.

Author contributions

Qun-Qun Zhang drafted and revised the article. Hua Nian was responsible for conception and supervision.

Ming-Hua Ma participated in the writing of the first draft. Yi-Jun Zhang and Tie-Jun Wu participated in the proofread. Jing Liu was responsible for the correction. De-Yu Fu participated in the article topic selection. Ling-Ling Xu participated in the overall design of the article. Ke Wang was the correspondent and chief planner of this article.

Conflicts of interest

The authors declared no financial or other conflicts of interest.

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Chinese Medicine and Culture

中医药文化

ISO/TR 20498-5 Traditional Chinese Medicine - Computerized tongue image analysis system - Part 5: Method of acquisition and expression of tongue colour and tongue coating colour

International Organization for Standardization (ISO) officially released ISO/TR 20498-5 Traditional Chinese medicine - Computerized tongue image analysis system -- Part 5: Method of acquisition and expression of tongue colour and tongue coating colour on January 11, 2019. ISO/TR 20498-5 was formulated by the team of Professor Wang Yiqin, from School of Basic Medicine of Shanghai University of TCM and Shanghai Key Laboratory of Health Identification and Evaluation, and jointly completed by East China University of Science and Technology and Suzhou Jingyu Medical Instrument Co., LTD.

Professor Wang Yiqin's team is one of the first teams in the domestic and overseas to develop the TCM four-diagnostic detection system and research on the syndrome differentiation model integrating the information of TCM four diagnosis information, and has being devoted to the work on objectification, normalization and standardization of TCM diagnosis. ISO/TR 20498-5 is the achievement stemmed from more than 20 years of scientific research on TCM Tongue diagnosis.



With modern scientific knowledge and technology, the TCM practitioner's subjective judgement about tongue manifestation has gradually developed into an objective determination by computerized tongue image analysis system (CTIS). Currently, the acquisition and expression methods of tongue colour and tongue coating colour are varied for the different CTIS, which results in inconsistency of expression of tongue colour and coating colour among the different CTIS. Therefore, Professor Wang led her team to submit the proposal for the standard acquisition and expression of tongue colour and coating colour to ISO/TC249 in 2015. After several rounds of discussion with ISO/TC249 experts and corresponding revision, ISO/TR 20498-5 was officially approved by the Committee in 2016, and then the development lasted for 30 months, with the nominated experts from 5 countries participating in the joint development of standards.

As one of the five parts of ISO 20498-CTIS, ISO/TR 20498-5 provides the methods of acquisition and expression of tongue colour and coating colour used in the CTIS, which can objectively represent the colour property of tongue manifestation in device-independent color space while not covering the clinical tongue diagnosis result. ISO/TR 20498-5 promotes standardization of CTIS, helping the conversion and sharing of tongue colour and coating colour among different CTIS or other related device, which is of great importance to the international trade and service of CTIS.



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