

Review and Progress

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The History and Theoretical Principles of Traditional Chinese Medicine

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Abstract Traditional Chinese Medicine (TCM) is a representative of China's traditional medicine, with a long history and profound cultural heritage, embodying the vast wisdom of the Chinese nation. Throughout the history of TCM, many famous doctors and scholars have emerged, such as Bian Que, Zhang Zhongjing, Sun Simiao, and Li Shizhen. Their summarized principles of prevention and treatment, as well as practical experience, have had a significant impact on the treatment and prevention of diseases, making an indelible contribution to the reproduction and survival of the Chinese nation. With the continuous development of society, people gradually realize that the development of TCM must meet the requirements of the times. This review discusses the history and theoretical principles of TCM, introducing its origin and cultural background, explaining the basic theoretical system of TCM, revealing the importance of TCM in the field of modern medicine, and providing directions for its future development. **Keywords** Traditional Chinese Medicine (TCM); Historical origin; Theoretical theory

Traditional Chinese Medicine (TCM) is the traditional medicine of the Chinese people, which refers to a medical system that uses Chinese herbal medicine, patent medicine, acupuncture, and other methods to treat and prevent diseases. TCM is characterized by its comprehensiveness, wholeness, and individualization, emphasizing the fundamental causes of diseases and pursuing the adjustment of the internal environment of the human body as the main therapeutic method to achieve balance and harmony.

TCM is a traditional medical system in China with a long history and profound cultural heritage. The development of TCM can be traced back to ancient times and has continued to evolve to the present day. As an original medical science of the Chinese nation, TCM reveals the laws of health and disease from a macro, systematic, and holistic perspective, reflecting the cognitive approach of the Chinese people. It has deeply integrated into the production and life practices of the general public, forming a unique health culture and practice, serving as an important means for people to treat illnesses, improve health, and prolong life, and safeguarding the health of the people. Throughout history, the Chinese nation has experienced numerous natural disasters, wars, and epidemics, but has been able to overcome these challenges and continue to grow in population and civilization. TCM has made significant contributions to this achievement.

TCM originated in primitive society. As early as ancient times, there are legends of "Shennong tasting hundreds of herbs". TCM is gradually accumulated and created by the working people in long-term production and life practices, and it is a product of practice. The Chinese people have continuously summarized and accumulated their knowledge of the natural environment and human physiological conditions through several thousand years of labor production. In the process of fighting against diseases, they continuously practiced and formed rich medical theoretical knowledge and practical experience. In the late Eastern Han Dynasty, the medical scholar Zhang Zhongjing wrote *Shanghan Zabing Lun (Treatise on Cold Damage and Miscellaneous Diseases)*, which not only saved numerous people from the plague but also became the basis for TCM prescriptions in later generations, establishing the basic principles of TCM clinical practice. In the Ming Dynasty, the famous medical scholar Li Shizhen referred to relevant medical books from previous dynasties and spent 27 years completing the monumental work *Bencao Ganngmu (Compendium of Materia Medica)*, which is still regarded as a classic in TCM pharmacology.



TCM still receives widespread attention in today's era. Tu Youyou was inspired by ancient TCM books such as *Zhouhou Beiji Fang (Handbook of Prescriptions for Emergencies)* to develop a method of extracting the effective antimalarial compound from Artemisia annua at low temperatures, and ultimately discovered artemisinin, a new antimalarial drug that has brought great benefits to humanity. This review aims to explore the essence of TCM, inherit the cultural treasures of TCM, and promote the development of TCM culture in the new era, by discussing the history, cultural background, and basic theoretical principles of TCM.

1 The Historical Origin of Traditional Chinese Medicine

The origin of traditional Chinese medicine (TCM) can be traced back to ancient times, with a history of several thousand years. Through daily activities such as hunting and picking, people gradually gained a deep understanding of plants and animals. They also learned that some foods could cause medicinal reactions or even poisoning, leading them to distinguish and choose food more carefully. After entering the clan society, people invented and learned how to use bows and arrows, and hunting and fishing became important sources of their livelihood. In the later period of the clan society, people transitioned from picking and fishing to farming. The legendary figure Shen Nong invented and produced wooden plows and hoe, and taught people about agricultural production (Han and Xu, 2010).

At this time, Chinese medicine did not have a complete theoretical system and remained in a scattered and unconnected state. At the same time, language, literature, philosophy, and natural knowledge were not yet mature, and no systematic theory had been formed (Qin, 2012).

Since the Xia Dynasty, primitive society began to disintegrate, and in the process of continuous progress in social productive forces, people's practical experience became increasingly rich, providing a solid foundation for the creation of the brilliant Chinese civilization. In the Western Zhou Dynasty, medicine emerged from its primitive state and became independent from shamanism. The birth of *Yijing (Book of Changes)* laid the foundation for the world view and methodology of Chinese civilization. In the Spring and Autumn Period and the Warring States Period, the first medical monograph in China, *Huangdi Neijng (The Yellow Emperor's Inner Canon)*, was born. It is a medical masterpiece that studies human physiology, pathology, diagnosis, treatment principles, and pharmacology. The book established theoretical frameworks for TCM such as the "Yin-Yang and Five Elements Theory", "Pulse Diagnosis Theory" and "Visceral Manifestation Theory". Its appearance marked the initial formation of the theoretical system of TCM.

As time passed, TCM gradually became an important component of traditional Chinese medicine and deeply influenced Chinese culture, philosophy, and social life. In Chinese history, many important medical and pharmaceutical figures also appeared in the development of TCM, such as Zhang Zhongjing, Li Shizhen, and Sun Simiao, who made important contributions to the development of TCM.

In modern times, TCM has also been widely applied and developed. TCM theories and practical experience are widely used in clinical treatment, rehabilitation, and health care. At the same time, with the advancement of modern technology, TCM has also begun to combine with Western medicine, developing many new treatment methods and drugs, such as Chinese medicine injections, Chinese medicine microcapsules, and so on.

2 The Cultural Background of Traditional Chinese Medicine

2.1 The medical tradition in ancient Chinese culture

The medical tradition in ancient Chinese culture can be traced back to the prehistoric era several thousand years ago. In ancient times, people gradually developed a series of medical practices and theories, including acupuncture, massage, herbal medicine, and other methods (Figure 1), based on their understanding of the natural environment and human physiological conditions. As time passed, under the guidance of the primitive materialism and spontaneous dialectical thinking in ancient times, a medical theoretical system was gradually formed and developed through long-term medical practice. These medical experiences and theories gradually formed the basis of traditional Chinese medicine (Pan and Sun, 2020).





Figure 1 Traditional Chinese medicine

2.2 Overview of ancient Chinese medicine doctors

The development of TCM cannot be separated from the efforts of generations of TCM practitioners. In the history of TCM, there are many famous medical figures, such as Bian Que, Zhang Zhongjing, Sun Simiao, Li Shizhen, etc., who have made important contributions to the development of TCM.

Bian Que was a famous physician in the Spring and Autumn Period and the Warring States Period. He is one of the five great medical figures in ancient China and wrote works such as *Nanjing (Classic on Medical Problems)* and *Neijing (The Internal Canon of Medicine)*. He established the method of pulse diagnosis in TCM and is regarded as the founder of traditional Chinese medicine. Bian Que's medical skills were renowned throughout the world, and Sima Qian highly praised his medical achievements in *Shiji (Historical Records)*.

Zhang Zhongjing was a famous medical figure in the late Eastern Han Dynasty, and is revered as the "saint of medicine" by later generations. His works *Shanghan Zabing Lun (Treatise on Cold Damage Disorders)* and *Jinkui Yaolue (Synopsis of Prescriptions of the Golden Chamber)* are important works in TCM. These two works have made important contributions to the classification of TCM, disease diagnosis, and treatment methods, and are known as the "two classics" of TCM.

Sun Simiao was a famous medical and pharmaceutical figure in the Tang Dynasty, and made important contributions to the research and practice of TCM. His works such as *Qianjin Yaofang (A Thousand Gold Pieces Prescriptions)* and *Beiji Qianjin Yaofang (Prescriptions Worth a Thousand Pieces of Gold for Emergencies)* have in-depth discussions on TCM pharmacology, formula studies, disease diagnosis and treatment.

Li Shizhen was a famous medical and pharmaceutical figure in the Ming Dynasty, born into a family of medicine (Figure 2). He referred to more than 800 books on medicine and academics from previous dynasties, combined with his own experience and investigative research, and spent 27 years compiling the book *Bencao Gangmu* (*Compendium of Materia Medica*). This is a comprehensive masterpiece of ancient Chinese pharmacology, highly praised both domestically and internationally, and has been translated into multiple languages.

These TCM experts have made great contributions to the development and inheritance of TCM, and their works and theories have also had a profound impact on the modernization and development of TCM.





Figure 2 Portrait of Li Shizhen

2.3 The status and influence of traditional Chinese medicine in Chinese culture

TCM holds an important position in Chinese culture, not only as an important component of traditional Chinese culture but also as an essential part of Chinese national culture. The theoretical system and practical experience of TCM have had a profound impact on Chinese culture and philosophy. For example, "Yin-Yang and Five Elements" in TCM theory is connected to the "Yin-Yang and Five Elements" in Chinese philosophy, and "Qi, Blood, Body Fluids" in TCM theory is connected to the "Five Elements and Eight Trigrams" in Chinese Taoism (Ju, 2008). In addition, TCM has also had an important influence on traditional culture, literature, art, and other areas.

3 Theoretical Theories of Traditional Chinese Medicine

3.1 The overall concept of traditional Chinese medicine

The holistic concept of TCM believes that the human body is an organic whole that interacts and depends on the external environment, including concepts such as "unity of nature and humanity", "interdependence between humans and nature", and "interdependence among organs and meridians", which form the basic framework of TCM theory.

The human body is composed of several organs and tissues. Each organ or tissue has its own unique physiological function, and these different functions are an integral part of the overall activity of the human body, which determines the unity within the human body. Under the guidance of the overall concept, Traditional Chinese medicine believes that the normal physiological activities of the human body rely on the functions of various organs and tissues to play their own roles, and on the other hand, rely on the complementary synergy and mutually reinforcing constraints between organs and tissues to maintain their physiological balance. Each organ has its own unique function, but it is also a division of labor and organic coordination under the overall activity, which is the unity of the human body's parts and the whole.

Human beings live in the natural world, where there are necessary conditions for human survival. At the same time, changes in nature can directly or indirectly affect the human body, and the body responds accordingly, belonging to the physiological range, which is physiological adaptability; Beyond this range, it is a pathological reaction. This characteristic of the unity of man and nature is called "Unity of Heaven and humanity in One". The human body will also undergo adaptive changes with climate change and regional differences.



It is precisely because of the unity of the human body itself and the existence of both opposition and unity between humans and the natural world that TCM emphasizes the need to treat diseases according to the specific situation of time, place, and person.

3.2 Basic theory of traditional Chinese medicine

The basic theories of TCM include the theory of "Yin-Yang and Five Elements", the theory of "Qi, Blood, Body Fluids", the theory of "Meridians", and the theory of "Organs and Viscera". Among them, the theory of "Yin-Yang and Five Elements" is the core of TCM theory, which believes that all kinds of physiological activities in the human body are driven by the two opposing but unified forces of Yin and Yang. The theory of "Qi, Blood, Body Fluids" emphasizes that the regulation and operation of substances such as Qi, Blood, Body Fluids, and Liquids are essential to the life activity of the human body. Meanwhile, the theory of "Meridians" and the theory of "Organs and Viscera" stress the interconnection and interaction between various organs, tissues, and physiological functions inside the human body (Sun and Jia, 2021).

3.2.1 Yin-Yang theory

The theory of Yin and Yang belongs to the category of ancient Chinese philosophy. Yin and Yang refer to the two opposing aspects of all things in the world, such as the sun and moon, cold and hot, stillness and movement, etc. It believes that everything in the universe has both opposing and unified aspects of Yin and Yang, which constantly move and interact with each other. This movement and interaction are the root of all things' movement and change. The ancients called this continuous movement and change "life transformation". The medical classic *Suwen (Plain Questions)* says, "the existence of the unity of opposites is the fundamental law of all things, and all things cannot exist against this law. The changes of things are formed by the constant movement and interaction of the yin and yang aspects of things themselves. The generation and destruction of things come from this fundamental law, which is where all the mysteries of nature lie. Therefore, if you want to cure diseases, you must solve this fundamental problem - yin and yang." This interpretation explains that the growth, development, and decline of all things in the world are the results of the continuous movement and interaction of Yin and Yang. Medicine belongs to the scope of natural science and believes that the occurrence and development of human diseases may also originate from the principle of Yin and Yang. Therefore, to understand the development process of diseases and explore the nature of diseases for treatment, it is necessary to investigate the changes of Yin and Yang in the human body.

3.2.2 Five Element Theory

The Five Elements theory includes five elements: Wood, Fire, Earth, Metal, and Water. The "Five Elements Theory" refers to the movement and changes of these five types of substances and their interrelationships. It explains the interconnection and movement and change laws between things through the mutual generation and inhibition of the five elements. The interaction between the five elements constitutes various phenomena and laws in nature and the human body, summarizing the different attributes of different things in the objective world. The dynamic model of the mutual generation and inhibition of the five elements illustrates the interrelationships and transformation laws between things. TCM mainly uses the "Five Elements Theory" to explain the functional connections between Wuzang Liufu (Wuzang: heart, liver, spleen, lungs and kidneys; Liufu: gallbladder, small intestine, stomach, large intestine, bladder and tri-jiao) and the mechanism of disease occurrence when Wuzang Liufu are imbalanced. It is also used to guide the treatment of the diseases in Wuzang Liufu.

3.2.3 The theory of Qi, Blood, Body Fluids

The theory of Qi, Blood, Body Fluids is an important part of TCM theory. It believes that there are four substances in the human body, namely Qi, Blood, Body Fluids, and Liquids, which are interdependent and interact with each other, maintaining the normal physiological and pathological states of the human body. Qi is the source of movement and change in the human body, Blood is the foundation of human nutrition and metabolism, and Body Fluids and Liquids are the lubricants of human life activities. The theory of Qi, Blood, Body Fluids is widely used in TCM theory, such as in the diagnosis and treatment of diseases such as hemorrhage, anemia, and edema.

3.2.4 Visceral meridian theory

The theory of Zang-Fu Organs and Meridians is an important part of TCM theory. It believes that there are Wuzang Liufu (Wuzang: heart, liver, spleen, lungs and kidneys; Liufu: gallbladder, small intestine, stomach, large intestine, bladder and tri-jiao) and a meridian system in the human body, which coordinate and interact with each other, maintaining the normal physiological and pathological states of the human body. Wuzang includes heart, liver, spleen, lungs and kidneys, and Liufu includes gallbladder, small intestine, stomach, large intestine, bladder and tri-jiao. Each organ has different functions and roles. The meridian system is a network that transports Qi and Blood and regulates the physiological and pathological states of the human body. The theory of Zang-Fu Organs and Meridians is widely used in TCM theory, such as in describing the pathogenesis of diseases, diagnosis, and treatment methods.

3.2.5 Syndrome differentiation and treatment

The treatment based on syndrome differentiation is a diagnostic and therapeutic method in TCM that is based on a holistic view. It involves a comprehensive analysis of the patient's overall symptoms and causes to determine the patient's syndrome types. Then, based on the characteristics of different syndrome types, corresponding treatment plans and medications are selected. The treatment based on syndrome differentiation plays an essential role in the clinical application of TCM. It can not only improve the treatment efficacy but also reduce the side effects of medication.

3.2.6 The theory of acupuncture

Acupuncture is one of the important diagnostic and therapeutic methods in TCM. It involves stimulating specific acupoints on the human body to regulate the internal Qi and Blood circulation and metabolism, thus achieving the purpose of treating diseases. Acupuncture theory includes meridian theory, Qi and Blood theory, and acupuncture theory, among which meridian theory is the core of acupuncture theory. It believes that there is a complex meridian system inside the human body, which can regulate the internal Qi and Blood circulation and metabolism through meridians.

3.2.7 Pharmacology

The pharmacology of traditional Chinese medicine mainly includes two aspects: Chinese materia medica and Chinese patent medicine. Chinese materia medica is a discipline that studies the source, properties, efficacy, dosage, and compatibility of Chinese herbs. Chinese herbs are the main form of TCM drugs, containing various pharmacologically active ingredients that can regulate the physiological functions of the human body and achieve the purpose of treating diseases. Chinese patent medicine is a discipline that studies the preparation, ingredients, properties, efficacy, dosage, and compatibility of Chinese patent medicines. Chinese patent medicines are solid or liquid preparations made by compounding multiple Chinese herbs, which have the advantages of convenient use, accurate dosage, and stable efficacy. They are widely used in TCM clinical practice.

4 Summary and Outlook

Traditional Chinese Medicine (TCM) has a long history that spans thousands of years, from the primitive society to the present day. It is the knowledge and experience accumulated by the Chinese people through long-term production labor, life practices, and medical practices, and is an important achievement of the Chinese laboring people in their struggle against diseases over thousands of years. During the thousands of years of development, TCM has continuously absorbed and integrated advanced scientific and technological achievements and humanistic ideas of different periods, constantly innovating and developing. Its theoretical system is becoming more and more perfect, and its technical methods are becoming more abundant, forming distinct characteristics.

Traditional Chinese Medicine (TCM) is an important component and typical representative of China's excellent traditional culture. It emphasizes the concept of "harmony between man and nature" and "balance of Yin and Yang, harmonization of the center", fully reflecting the core of Chinese culture. TCM's complete and unique theoretical system has become an important part of the world's medical and cultural heritage and a treasure of Chinese



civilization. The development and application of TCM have important practical significance and historical value. Its future development direction is to inherit and carry forward the tradition while actively absorbing the achievements of modern science and technology, promoting the modernization of TCM, and playing an important role in the human health cause.

Indeed, TCM has a long history and a high level of national identity, and it has played an important role in responding to major diseases and public health emergencies due to its characteristic ideology and unique treatment methods, demonstrating its strong vitality. It not only embodies the health and wellness concepts and profound philosophical wisdom of the Chinese nation over thousands of years but also serves as a key to unlocking the treasure trove of Chinese civilization.

Since the outbreak of the COVID-19 pandemic, TCM has become a shining point in the fight against the pandemic. TCM prescriptions for COVID-19 have been adopted and used by many countries, playing a positive role in the global fight against the pandemic. At present, the revitalization and development of TCM has ushered in a good opportunity with favorable conditions and a harmonious social environment. In the journey of realizing the great rejuvenation of the Chinese nation and the Chinese Dream, we should have a high degree of cultural confidence, practice our skills diligently, and promote the prosperous development of TCM culture in the new era.

Authors' contributions

HQK was responsible for the relevant literature and material researching, organizing, and the writing for the first draft of this review; JLF participated in discussions and paper revisions; JLF was the person in charge of this review, guiding the writing and revision of the paper. Both authors read and approved the final manuscript.

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