

A historical overview of traditional Chinese medicine and ancient Chinese medical ethics

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Traditional Chinese medicine (TCM) has a time-honored history of several thousand years. It is the sum of knowledge gained by all the nationalities of our country in fighting disease and maintaining good health in the course of a considerably long historical period. As pointed out by the first theoretical medical classic, the *Internal Classic of Yellow Emperor*, the human body is built upon two opposing aspects, the yin and the yang, which are interdependent and interrelated. TCM aims at maintaining the harmonious relationship between these two aspects so as to achieve physical health and longevity. In a chapter of the above-mentioned classic, it is stated that "when one masters the mystery of the yin-yang principle, one can even enjoy a life as long as nature itself" [21]. The lofty goal of TCM is thus matched and in line with what the WHO defines for "health" in 1948 as "a state of optimum physical, mental and social well-being and not merely the absence of disease and infirmity".

TCM, being one of the world's oldest medical systems with remote antiquity and opulent contents, has made brilliant achievements and contributed significantly to the health of the Chinese people and the whole world in the course of its historical development. It features a series of theoretical systems and practical experience.

Under special natural conditions, our ancestors gradually accumulated some primitive medical experience through continuous practice. Early in the New Stone Age, they learned how to treat disease with stone tools and this eventually led to the invention of acupuncture therapy. Our ancestors discovered, through the production process, that movements of the body and extremities are capable of conquering fatigue and exhaustion, and even curing some diseases. Furthermore, this greatly promoted the condition of the body. Such activity, on the other hand, led to the invention of the art of Dao Yin, or what are known today as *Qigong* (breathing exercises) and *Tai Ji Quan* (shadow boxing).

The vast territory and wide diversity of natural conditions bestows our motherland with rich resources of materia medica, including herbal plants, animals and minerals. As early as the start of the agricultural period, our ancestors had already gathered rich experience in the application of herbal drugs. Early developed civilization ultimately led to the making of wine and the improvement of food-cooking techniques, including dietotherapy which, in turn, was the foundation of the invention of decoction treatment, a specialized compound herbal remedy characterized by the combination of multiple herbal drugs compounded together to produce its therapeutic effect. This is one of the important features of TCM.

For the time being, we can only present the most important achievements and characteristics of TCM from our rich treasure house.

1. A unique system of medical theory

Compiled in around the fifth century BC, the first monograph of medical theory of TCM now extant, the *Internal Classic of the Yellow Emperor*, laid the foundations for TCM theory.

Making use of the archaic philosophical thinking of ancient China, the nucleus of this medical theory is made up of the yin-yang and "five phases" principles, which explains quite uniquely physiology, pathology and etiology, guides the diagnosis, treatment and prevention of disease, and provides the criteria for the application of drugs.

The theory of the yin-yang principle holds that the internal viscera, both functional and corporeal, are of the counter-reacted aspects of the yin and yang which are interdependent, intersupporting and interconsuming and in a harmonious state. Loss of this harmony would result in the occurrence of disease. The goal of treatment aims at restoring such harmony to the body.

The five-phases theory, somewhat similar to the humourism theory, is made up of five elements, wood, fire, earth, metal and water. There are interpromoting, counteracting and harmonious relationships between them. The visceral phenomena, physiology and pathology of the body can be well explained by the harmony or disharmony of the five phases.

TCM maintains that the causes of all diseases can be grouped into three categories: the exogenous, endogenous, and the intermediate (miscellaneous) causes. An endogenous cause consists of over stimulation of emotion, including joy, anger, melancholy, fear, fright, meditation and grief. Exogenous causes consist of unseasonal changes of climatic factors, such as evil wind, cold, summer heat, dampness, dryness and fire, while the intermediate cause refers to burns, frostbite, bites from snakes, insects and other animals, injuries by metals and, last but not least, irregular and inadequate or intemperate food eating and drinking habits, as well as sexual activities.

TCM holds that disease is a state, under the influence of etiological factors, in which the body loses its harmonious relationship with the environment and within the body itself. Based on the symptoms and the underlying relationship between the body and the disease, TCM applies the "eight key principles" for judging the conditions, i.e. for diagnosis, namely, surface and interior, cold and hot, sthenia and asthenia and yin and yang. The last two comprise the general key-principle, while the first two refer to the site of disease. Cold and hot refer to the nature of the disease, while sthenia and asthenia refer to the severity of disease evils and the condition of physical resistance, respectively.

There are also four kinds of diagnostic method in TCM, namely, inspection, inquiry, auscultation and olfaction and palpation; of these, palpation, or feeling of the pulse and inspection of the tongue, are the most important ones, with distinctive characteristics. Nevertheless, a final and accurate diagnosis can only be reached by an overall analysis and a comprehensive judgement combined. None of them alone can give a correct diagnosis.

Combining, or holistic treatment, is generally adopted in TCM. It is emphasized that the patient's body should be viewed as an organic whole rather than individual parts functioning separately during the course of treatment. Emphasis in TCM is not laid on the disease itself, but rather the patient is considered as an organic whole and integral part of nature and treatment measures should be varied according to differences in the individual patient's inhabited location and seasons, in order that the balance and harmony of the bodily functions can be restored. This is what we call "treatment on the basis of differential diagnosis of symptoms and signs (known in TCM terms as Zheng)". As to the concrete treatment measures, there is a wide variety. A few might be mentioned here, namely dietotherapy, drug therapy, acupuncture and moxibustion, massage, breathing exercises, and spiritual therapy, etc. The first choice of these is dietetic therapy due to its convenience, easy mastering, economical and practical application, inter alia, lack of side effects. Then comes acupuncture and moxibustion. Drug therapy is to be applied in cases where these measures fail or prove ineffective. However, TCM holds that prevention should be put first, just as the Internal Classic of Yellow Emperor states it: "A superb physician 'treats'

before the ailment occurs", which laid down the precious and active prophylactic conception in TCM.

2. Achievements in clinical practice

TCM, being one of the integral parts of Chinese ancient culture as a whole, always stood at the forefront of the world's medical domain in ancient history.

Sphygmology in TCM is the earliest in the world's medical history. Early in the Jin Dynasty (third century AD), Wang Shuhe's *Classics of Sphygmology* mentioned that the Cunkou (the site at the wrist where the radial artery can be felt pulsating) is the place for taking the pulse. At that time, 24 different kinds of pulse could be distinguished: *fu* (floating), *kou* (hollow), *hong* (full), *hua* (smooth), *su* (rapid), *cu* (running), *xian* (string tight), *jin* (tense), *chen* (deep), *fu* (hidden), *ge* (hard and hollow), *shi* (forceful), *wei* (faint), *se* (sluggish or hesitant), *xi* (minute), *ruan* (soft), *ruo* (weak), *xu* (feeble), *san* (scattered), *huan* (moderate), *chi* (slow), *jie* (slow with irregular intervals), *dai* (intermittent) and *dong* (tremulous). In fact, these pulses touch subjects concerning heart rhythm, rate, elasticity of the artery, position of the vessels, the flowing condition of circulating blood (hemorrheology), viscosity of blood and its rheological characteristics. By in-depth exploration of knowledge about the pulse, TCM is able to judge the condition and resistance of the patient, the severity of the ailment and the condition of the internal viscera. Thus, it affords rather accurate and reliable information for correct diagnosis. Once the compilation of the *Classics of Sphygmology* was completed, it spread into the ancient Tibet region between the seventh and eighth centuries AD [1]. Ultimately, passing through many places, this classic was introduced into the Arabian countries via ancient India. The famous *Avicenna's Canon of Medicin* [3] mentioned more than 40 kinds of pulse in which some 20 kinds are believed to be cited from the same classic work of Wang Shuhe.

On the recognition and treatment of diseases, again, TCM made dramatic achievements. Early in the eleventh century BC, the oracle of tortoise shell or animal bones mentioned diseases of the head, the ear, the eyes and the nose. Dental caries and intestinal parasites were also recorded, which showed undoubtedly that our ancestors recognized such diseases at that early stage. One of the prominent achievements in TCM is the recognition and treatment of infectious disease which were termed "seasonal febrile disease" or simply "febrile disease". In the second century AD, the distinguished physician of the Eastern Han Dynasty, Zhang Zhongjing compiled a famous medical classic titled *On Febrile Diseases and Miscellaneous Diseases*, which laid down the compact and rigorous rules and, in addition, recipes for therapeutic compounds for the treatment of infectious disease, of which some are still effective and applicable today with satisfactory results. For instance, a decoction known as "White Tiger Decoction" (composed of *gypsum fibrosum*, *rhizoma anemarrhenae*, *radix glycyrrhizae*, *semen oryzae nonagglutinosa*) for B-encephalitis, decoction of rhei and paeonia for acute appendicitis, decoction of *ephedra*, *gypsum*, *Glycyrrhiza* and almond for acute pneumonia, decoction of *artemisia* for acute viral hepatitis, etc.

Living around 281-341 AD, the well-known physician and alchemist of the Eastern Jin Dynasty, Ge Hong, made prominent contributions to the knowledge of infectious disease. In his famous medical book entitled *Handbook of Prescriptions for Emergency Treatment*, he mentioned a kind of sand flea.

According to his description concerning the symptoms and course of this disease, he was referring to what we call tsutsugamushi today. In the same work, he also pointed out a kind of acute infectious disease manifesting skin eruption, pustules and pigment-free scars or pit formations. This, again, is believed to be the earliest record of smallpox in the world's medical history.

For the treatment of acute infectious diseases, Ge Hong proposed some valuable opinions and concrete methods. In treating hydrophobia (rabies), he suggested the application of the brain tissue of the same

rabid dog that had bitten the patient on the patient's wounds as treatment. This method, based on the archaic concept of "like cures like" or "poison attacked by poison", might be considered as the beginning or birth of the primitive concept of immunity. Moreover, such a concept was so highly developed that it eventually led to the invention of variolation with a humanpox vaccine **and is the** predecessor of the cowpox vaccination. According to historical records, in no later than the sixteenth century, our ancestor began to inoculate the humanpox vaccine for the prevention of smallpox. It should be emphasized that the virus is attenuated by passing through several generations of inoculation in the human body, and yet the immunity of the virus is still preserved intact as a prophylaxis against smallpox. This measure is comparable, and quite similar in principle, to the preparation of attenuated viral vaccines in modern times. Medical documentation indicates that Jenner's invention of vaccination was enlightened by the variolation technique.

In TCM, another well-known physician of world renown is Hua Tuo. Living in the later Han Dynasty, Hua Tho invented *Ma Fu powder*, which was taken with wine as an anesthetic for performing surgical operations, including abdominal operations. Some researchers maintain that the powder might contain rhododendron molle (B 1) G. *Don or Datura metel (L.)*. The prestige of Hua Tuo for the invention of anesthetics and the role they played may be understood by quoting what Lawall wrote in his "*Four Thousand Years of Pharmacy* ", published in the US in the 1920s: "Some of the Arabian authorities speak of a form of anesthesia by inhalation. This was probably derived from Chinese, for Hua Tuo, the Hippocrates of China, is said to have taught this practice and used for the purpose a combinatin of aconite, datura and herbal".

Another distinguished contribution of TCM is the establishment of *Tai Yi Shu* (Imperial Academy of Medicine) which is believed to be the first of its kind in history, devoted exclusively to the teaching of medicine, in which some 300 faculties are divided into four departments: internal medicine for adults, pediatrics, massage and incantation. The institution embraces a system of academic professionals including doctors, assistants, practitioners and technicians. There is a very rigorous system of examination every month, season and year. Only those who pass the examinations may qualify for clinical practice. Of course, the Academy also includes a department for the training of students qualified in the identification, cultivation, preservation and processing of Chinese materia medica. Turning to medical jurisprudence, a book entitled *Washing Away the Wrong Cases* (xi yuan lu), compiled by Song Ci of the Song Dynasty in 1247, described the examination of the corpse, identification and analysis of death caused by mechanical wounds, causes of poisoning and antitoxicity, and on-the-spot examination of criminal cases. This work is recognized by medical professionals as the first monograph on legal medicine. This monograph was introduced abroad and has been translated into various languages, including Korean, Japanese, Russian, English, German, French and Dutch and spread all over the world.

In the area of clinical medicine, the techniques for the treatment of foreign bodies in the esophagus and artificial respiration are noteworthy. For instance, Ge Hong advocated swallowing a bundle of *bulbus allii macrostemi* fibres for small foreign bodies in the esophagus, or a sophisticated technique of pushing rosary beads through the hock string remaining in the mouth cavity to treat children having accidentally swallowed fish-hooks into the esophagus, Meanwhile, Zhang Zhongjing recorded the method of artificial respiration for the emergent treatment of a suicide attempt by hanging. Moreover, there are records of enemas with bees honey or animal bile. Abdominal paracentesis was also mentioned in the fifth century BC.

3. Achievements of acupuncture, moxibustion and Chinese pharmacology

TCM features the art of acupuncture and moxibustion, which originated in the New Stone Age with stone needles and knives as its predecessor. In the Bronze Age (sixteenth to eleventh century BC), our ancestors applied metal needles for treating disease. Through the manipulation of acupuncture and moxibustion, knowledge about vessels or channels gradually developed and became complete. Acupuncture and moxibustion, by adjusting the yin-yang principle of the body itself by means of a manoeuvre, could cure many kinds of disease, ranging from microbial infection to diseases of the nervous system and functional diseases, and are especially effective for relieving pain. Owing to its capacity to relieve pain, ancient medical workers applied acupuncture to suppress pain prior to minor operations. And this eventually resulted in the invention of acupuncture analgesia (acupuncture anesthesia). The art of acupuncture and moxibustion was spread abroad in the early period. In the East, Japan and Korea were the two countries that first came into contact with the Chinese art of acupuncture and moxibustion. Early in 562 AD, a Chinese scholar, Zhi Cong, took *Illustrated Channel and Point Chart* to Japan. Thereafter, the Japanese authorities stipulated that the *Classic of Acupuncture and Moxibustion*, the earliest work of its kind now extant, be a required course for medical study. In 1673, W. Rhijne, a physician of the East Dutch India Company, introduced acupuncture/moxibustion into France. Meanwhile, E. Kampfer, a German physician, introduced it into Germany. The science of acupuncture/moxibustion flourished in Europe thereafter and made its contribution to the health of the people in all European countries.

Chinese pharmacology is another important contribution made by the Chinese people to the world's medical arsenal. The *Shen Nong's Classics of Materia Medica*, the earliest pharmacological work now extant, was written in around the second century AD. It recorded 365 kinds of materia medica. Although its classification of drugs is rather primitive and clumsy, it contains many highly effective remedies, among them *herba ephedrae* for asthmatic coughs, *radix dichroae* as an anti-malarial drug, *rhizoma coptidis* for dysentery, *radix et rhizoma rhei* as a cathartic agent and sargassum as an anti-goiter drug are the famous ones, which have been proven by modern scientific methods to be effective. Perhaps the most prominent and influential work in this field is the *Compendium of Materia Medica*, written in 1593 by Li Shizhen, which embraces 1892 kinds of herbal drugs divided into 16 categories: water, fire, earth, metal and stone, grass, cereal, vegetable, fruit, wood, utensil, worm, scale, shell, bird, beast and man. The classification applied by this work appears to be fairly advanced when compared with contemporary works in the same field. This naturalist work embraces achievements in biology, chemistry and other natural sciences, in addition to its classification. For example, Shizhen mentioned the phenomena of genetics, correlative variation and the adaptation of animals to their environment. He also mentioned the extraction of mercury from *herba portulacae* and gallic acid from *galla chinensis*. For the preparation of certain drugs, he adopted various ways in which distillation, evaporation, sublimation, precipitation, burning and efflorescence were applied. No wonder this work has drawn the attention of many scientists in foreign countries with ever-increasing enthusiasm. Domestically, this voluminous work has been republished and reprinted in some thirty editions so far, and it has been translated, partially or completely, into foreign languages including German, French, English, Latin, and Russian for Europe and Japanese and Korean in the East, the latter two appearing even earlier than the former. The most prominent evolutionist, Charles Darwin, cited some material, either directly or indirectly, from Li Shizhen's work. It is quite natural that Li Shizhen became one of the most prominent and well-known scientists in the history of ancient natural science in the world.

4. Medical ethics in ancient China

In tandem with the advent of medical activities in remote antiquity, ethical problems appeared, albeit in a

very primitive form. Based on the economic infrastructure of the society, medical ethics is a particular social ideology reflecting the mutual relationship between different people and communities and maintained by the inner belief of medical workers, social opinion and medical professional tradition. During the middle stage of primitive society, when the professionalization of medical workers and the medical profession appeared, the idea of medical ethics began to take shape, which is, in fact, a historical category. As the main subject of medical ethics, the doctor adjusts the mutual relationship between himself and his patients, the society and doctors themselves constituting the main body of the domain of medical ethics.

China is a time-honored civilization with several thousand years of history of medicine; thus it follows that it also has a long history of medical ethics. However, the ethical knowledge in the medical world at this early stage was by no means complete or systematic, but rather fragmented and trivial. During the Zhou Dynasty 3000 years ago, doctors were divided into different groups according to their responsibility, namely, *ji yi* (doctors for curing internal disease) *yan yi* (doctors for external disorders), *shou yi* (veterinary doctors), and *shi yi* (dietetic doctors). To determine their salary, the various doctors had to undergo examinations at the end of each year, judged in terms of the effectiveness of their treatments. The reward system for these examinations was: full salary for a 100% cure rate, and decreased salary based on the percentage of treatment failure. Thus, doctors were urged to improve their medical skill in order to achieve better compensation for their profession.

As is generally known, Confucianism, the ruling and guiding philosophical ideology of Chinese feudal society for over 2000 years, established by the great educationalist, thinker and philosopher, Confucius, was also the guiding principle of medical ethics in ancient China. The core of Confucian thinking is "benevolence" or "love and kindheartedness", "humanity", maintaining that "those who are kindhearted or benevolent love the people". In other words, all people should love one another, not alone doctors their patients. As a motto for doctors, Confucianists advocate that "medicine is a benevolent art" or, as a technical art for saving life and curing disease, doctors should have a kind heart. Confucius also pointed out that he who does not have perseverance is not qualified to become a doctor. These are the minimum qualifications for a doctor. In summary, this benevolent art, as the core of Confucian medical ethics, embodies the spirit of humanity and reflects the social responsibility of medicine and the characteristics of the medical profession.

The *Internal Classic of Yellow Emperor*, the earliest medical classic now extant and written about 2500 years ago, instructs doctors to focus their attention, in addition to their skill, primarily on the prevention of disease, instead of focussing on treatment after the onset of disease. He who is conversant with the prevention of disease is a "superior worker" in the medical province. It also states as a prerequisite that a doctor should be erudite, with extensive knowledge regarding "astronomy, geography and worldly affairs". Only those with such immense erudition and great originality can serve their patients well and combat and conquer disease.

About half a century after the advent of the Christian era, Buddhism was introduced into China. This religion exerted certain influences on medical morality in our country. The concept of *samsara*, or transmigration due to causality and retribution, advises people to do only good deeds in this world, to their credit in the next, meaning that a doctor could have a magnificent and glorious next-life. Naturally, the medical profession is an ideal profession to satisfy such a demand. On the basis of the old ethical tradition, this new idea helped to shape a primitive standard for medical ethics between the third and fifth centuries AD, including three aspects: careful examination and consideration when dealing with disease, diligent manner when dealing with medical art and careful and appropriate administration when

prescribing a recipe or drugs.

The seventh century saw the maturity of medical ethics in ancient China, embodied in two special chapters regarding the requirements for a doctor in the book *Qianjinfang (Prescriptions worth a Thousand Gold)* written by the famous physician Sun Simiao (581-682). The titles of the two chapters are "Perfect Proficiency of a Great Doctor" and "Practising and Conducts of a Great Doctor", respectively.

These formulated the standards for ancient traditional medical ethics, including:

1. Be erudite in medical knowledge and diligent in learning: all doctors should progress constantly and keep improving their skill of the medical art and technical know-how.
2. Be sympathetic to patients and serve them wholeheartedly. Serve all patients equally, regardless of their age, sex, wealth, rank, nationality and intelligence. Treat all patients as if they were your own relatives and their illness as if it were your own suffering. Meet the patient at any time or any place when a doctor's help is needed, notwithstanding any danger.
3. Be painstakingly careful in diagnosing a disease. Think carefully when prescribing treatment. Be objective and avoid any personal considerations of responsibility or being swayed by personal feelings.
4. Be solemn in one's conduct without making any personal demands: no humor, demands for money, or sexual issues should be raised.
5. Be respectful to one's tutor and profession. Avoid any arrogance and rashness. Do not criticize other doctors' skill or conduct in the presence of a patient. Do not be arrogant about one's own achievement. Learn from other doctors to ensure one's own progress, only charlatans are jealous of other doctor's superb skills.

This is the ancient Chinese manifesto on medical ethics, embracing almost all aspects of present day medical morality, and becoming the standard motto for Chinese traditional doctors to follow. Even so, the author summarizing this glorious chapter on medical morality had his **own** limitations, personal and historical. He was a devotee of Buddhism, so much so that he advised a "standard" or model doctor not to apply drugs of animal origin in order to observe the Buddhist taboo regarding the taking of life, by saying that "it is far from saving (patients') life by killing (animals') lives, because all animals, man and domestic animals, have pity on their own lives". He even emphasized that, when using snake drugs, one must purchase those dead ones sold in the market, and he was even very reluctant to use hens' eggs for medicinal purposes, because the egg, in his opinion, was already a potent life. Ironically enough, in Sun's text mentioned above, he applied a lot of animal drugs in his thousands of recipes, indicating that the Confucian idea of whole-heartedness is far more important than and superior to Buddhist taboos, a pragmatic concept to meet the demands of patients' practical needs.

In summary, ancient Chinese medical ethics was standardized in the seventh century and further developed to its complete form thereafter. Though it is far later than the Hippocratic oath, Sun's chapter on medical morality may be boasted as the earliest complete text of morality in China.

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