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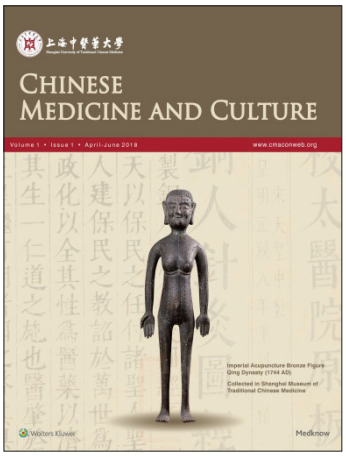

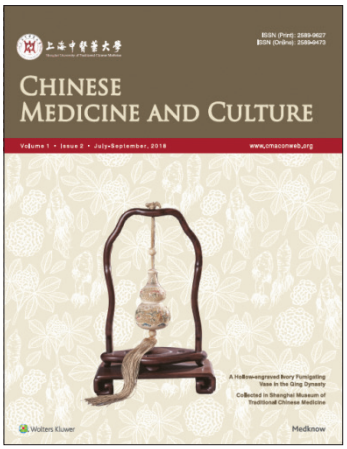

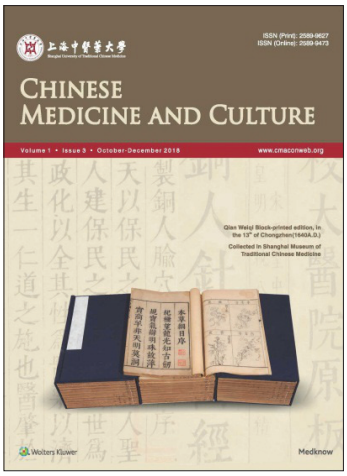

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Review Article

Traditional Chinese Medicine in Canada: An Indigenous Perspective

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Department of Educational Psychology and Leadership Studies, Faculty of Education, University of Victoria, Victoria, Canada

Abstract

This paper summarizes the practice of traditional Chinese medicine (TCM) in Canada by exploring why so many indigenous people are drawn to it. We present a brief history of TCM in Canada, including its acceptance by 5 of the 10 provinces in Canada as one of the medical approaches, accepted and regulated by the government. Chinese philosophy embedded in TCM is compared to indigenous philosophy, and there is a description of some of the plants and animals used as remedies in indigenous folk medicine. In addition, there is a short description of how TCM psychology parallels some practices in indigenous psychology.

Keywords: Canada, indigenous philosophy, traditional Chinese medicine

"When I lived with the shamans, I found out that there is a difference between curing and healing."

–Alberto Villoldo

Introduction

We have always been fascinated by Villoldo's[1] ideas around curing and healing in which curing is described as remedial or fixing a problem, while healing is a means of transforming one's life. In other words, we can be cured of an illness, so it will not hinder us from pursuing our goals, but our life is not drastically changed. However, when we transform our thinking, feelings, and energy levels are different. We can see more clearly in every way, which is why holistic forms of helping have always appealed to us and have energized us to explore forms of helping beyond the Western paradigms that we have been trained in our professions of counseling psychology and education. Transformation involves all parts of the self, not just getting rid of a problem but also changing one's thoughts, feelings, actions, and motivation about how one lives in this world. Western medicine, like Western psychology, is not holistic and has a mind–body separation and thus it is only curing and not healing. In our experience, most Western approaches in my estimation fall into the category of curing (with a very few exceptions such as Transpersonal Psychology), in which one's whole being can be changed. In the spring of 2017, Honoré France had the opportunity to undertake a research project at the Shanghai University of Traditional Chinese Medicine, where he interviewed or attended lectures of major traditional Chinese medicine (TCM) practitioners, theorists, teachers, and writers. Not only was he required to read countless journals and books, but he also had the opportunity to engage his whole being in understanding what he was learning. What he found was that there were some parallels with what he had been taught by our indigenous teachers about healing and how one's life can be transformed. In his curiosity, he wondered how TCM would work with indigenous people in Canada. Consequently, we would like to explore in this paper the similarities between TCM philosophy and practice, and indigenous philosophy and practice. We will summarize TCM's success in Canada since 1985; examine the relationship of TCM, folk medicine, and counseling; explore folk medicine, indigenous counseling, and culture; look at the value of holistic well-being; and examine similarities of indigenous counseling and TCM.

While we were both teaching counseling psychology and indigenous education at the University of Victoria, respectively we were also working as facilitators in the indigenous community

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where we begin to learn more about one of our cultural heritages – indigenous healing, which includes an understanding of the relationship between healing and nature (land), how traditional healing was used before the introduction of Western Medicine, the use of herbs and foods as ways of healing the body, and how indigenous philosophy and spiritual practices could heal the mind and spirit. In a sense, healing is not just getting rid of a problem, but transforming one's life and changing the way one eats, exercises, and learns to live in harmony with all living things.

Traditional Chinese Medicine in Canada

TCM is an integral part of Chinese culture and was introduced in North American when Chinese immigrants came to this continent. One of the oldest Chinese communities in Canada is in the city in which we live, work, and raise our children – Victoria, British Columbia. Hence, TCM was being practiced at the beginning of the Chinese immigrating to this territory, but it was only in 1985 that the first school of TCM opened its door to the general public in Canada in 1985. The first legislation of acupuncture was introduced in Alberta, Canada, in 1988, which quickly spread to other parts of the country. Currently, TCM and/or acupuncture have been regulated in five provinces in Canada and "…and the provinces of B.C. and Ontario regulate both TCM practitioners and acupuncturists (while) Alberta, Quebec and Newfoundland and Labrador regulate acupuncturists only". One of the largest training programs in Canada is at the International College of Traditional Chinese Medicine located in Greater Vancouver (Surrey), which offers a 5-year program doctorate in TCM. Typically, programs also offered in many schools are 3-year diploma in acupuncture and herbalist and a 4-year program in TCM (practitioner). Currently, in Greater Vancouver, there are over 20 institutions that train TCM practitioners, including Kwantlen Polytechnic University in Surrey, BC.

What has Been the Rationale for this Phenomenal Growth of Traditional Chinese Medicine?

According to Janjua,[2] the interest in complementary and alternative medicine (CAM), which includes TCM, has gained a great deal of interest globally, in particular, in the province of British Columbia where it is officially recognized by the government and has had a growth in practitioners and clinics. For example, it is estimated that 70% of the Canadian population uses some form of CAM, compared to 48% in the USA and 31% in Belgium, while in a World Health Organization (WHO) report, "…the world market for CAM has been estimated at 60 billion USA in 2005 with a steady growth where TCM therapies have been found to be extensively used".[2] In exploring a number of reasons for this phenomenon, we believe the growth is a result of the following reasons:

1. Desire for more nature-based and holistic medical solutions
2. Movement away from "big pharmacy" and the medical establishment
3. High costs of Western medicine compared to nature-based practice
4. Increased interests in CAM and folk medical practices (e.g., use of herbs and traditional indigenous practices).

Folk Medicine: What is it?

These days most countries regulate Complementary and Alternative Medicine(CAM) that offer patients an alternative form of medicine. However, there have been from the very beginning of time, different forms and types of medical practice. These practices are from around the world that pre-date modern medical practices and the establishment of modern hospitals; the WHO defines it as a traditional medicine as "the sum total of the knowledge, skills, and practices based on the theories, beliefs, and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement or treatment of physical and mental illness".[3] They were based on the traditional ideas of healing and, in Canada, are widely practiced in the indigenous community.

It should be noted that medicines used in this tradition throughout history were taken not only from plants but also from animals and minerals. An excellent source of information about the use of animals by people from around the world including indigenous people is edited by Rômulo Nóbrega Alves and Ierecê Lucena Rosa (2013) -titled: Animals in Traditional Folk Medicine Implications for Conservation. Interestingly, Alves and Rosa[4] describe the early use of venom as a way of protecting early humankind from diseases and are still in use today. An example of a widely used of animals for medicines is cod liver oil: as a way of dealing with anemic, as a means of preventing parasites in the intestines, and as a way to prevent fever.

The Indigenous People of Canada and their use of Traditional Medicines

Before the Europeans colonized and migrated to the Western hemisphere – over 500 years before – there were millions of indigenous people with advanced civilizations with their own art, technology, culture, languages, and literature just to name a few. Today, in Canada, they now only number about 6% of the total population with over 500 different groups of people with their own languages. The decline in numbers occurred after the first contact mainly from diseases that the Europeans brought with them along with the loss of their lands, way of life, and occupations. The government has classified these diverse peoples into three groups: First Nations(American Indians), Inuit (Eskimo), and those of mixed ancestors called Métis (mixture of indigenous people and Europeans). All have been influenced by the European migration, but most have been taking steps to preserve their culture, language, and teachings which have been passed down from generation to generation. To get an idea of how teachings about medicine and knowledge is passed down consider the following example of Coast Salish teacher – Sarah Modest.

Sarah Modeste, also known as "Tse-e-Ilat," a well-known healing and knowledge keeper whose teachings, she describes as Snuw'uyulh {The psychology of Well-Being"}. Her teacher was her grandmother, and in time, Sarah will pass the teachings on to another person. This oral tradition of keeping knowledge alive is typical of folk medicine. In many conversations about Snuw'uyulk, we became acquainted with the main ideas about the nature of relationships, that healing needs to be holistic, that our actions need to be integrated with our inner selves, and that knowing/knowledge is subjective and in constant change. What makes the folk medicine of indigenous people significant is that they have been living in the land in North American from the very beginning of history, and thus, their knowledge based on observations over time provides all of the people living here now insight into traditional knowledge of plants, animals, and the natural world. These teachings give us a better understanding of how to utilize the gifts of medicine in the plants and animals that exist in this part of the world. Consider the words of the Yupiaq indigenous writer, Kawagley[5] who states that:

…where modern medicine failed and traditional medicine worked, and some elders say that is because the natural remedies integrate human expectations and spirituality along with using an herb.

Examples of Folk Indigenous Medicine from Plants (the Cherokee, Dene, and Athabasca People)

Typically, information about the medicinal uses of animals, plants, and minerals from an indigenous perspective was not written down, although this has changed since the publication of Paul Hamel and Mary Chiltoskey's 1975 book: Cherokee Plants: Their Uses – A 400-year History. Before this book was published, the use of plants in medicine goes back even further with knowledge being passed down through apprenticeship. Banks,[6] quoting a 16th-century writer, on the Cherokee theory and practice of medicine affirms the importance of:

…the order of nature (because) every climate is blest with specific remedies for the maladies that are connatural to it… the Indians instigated by nature and quickened by experience have discover particular properties of vegetables as far as needful to their situation in life.

- Ts'e (spruce gum) from the resin of the spruce tree was primarily used for cuts but can also be taken orally of stomach, diabetics, colds, and sinuses
- Gots'ago (Labrador tea). For flu [Figure 1]
- Dzendi (rat root or sweet flag). Used as an antibiotic and also for bone and muscle aches [Figure 2]
- Ito detsam (mint or mentha). Used to help to sleep and for stomach aches [Figure 3]
- Adirondack (red spruce). Treat infection and gangrene [Figure 4]
- Fern used for sore throat and for food [Figure 5].
- Salix (willow tree bark). The original aspirin [Figure 6].

Figure 1: Labrador tea

Figure 2: Rat root or sweet flag

Figure 3: Mint or menthe

Cultural, Philosophical, Sociological, and Psychological Similarities

I saw that the sacred hoop of my people was one of many hoops that made one circle, wide as daylight and as starlight, and in the center grew one might flowering tree to shelter all

Figure 4: Red spruce

Figure 5: Disambiguation

Figure 6: Willow tree bark

the children of one mother and one father. And I saw that it was holy.[7]

When Black Elk, a First Nations philosopher, spoke these words 70 years ago, he was expressing the most fundamental belief of all First Nations people of North America. The idea that all living things are related. The philosophical essence of this idea can be expressed in one word – respect; respect for the land, respect for the animals, respect for the plants, respect for other people, and finally, respect for the self. This is the essential ingredient for living life. The notion of respect is that humankind is not separate from any other thing in the world but just another living breathing creature among many. Thus, the environment, as a brother or sister, is not something to be exploited or harmed but is to be considered an integral part of everyone. The disease is caused when people are out of harmony with the land. First Nations people believe that humans have a choice of two roads: the "road" to technology (blue) or the "road" to spirituality (red).[8]

Indigenous beliefs emphasize that humankind is interdependent and that there has to be a balance not only in one's thoughts, feelings, and actions but also a manifested spiritual connection between the self and all creation. Since everything is interrelated, well-being is based on ensuring that one is in harmony with one's surroundings. In working with First Nations people, the tribal and the extended family are of utmost importance. Communication is often circular or nonlinear, which is different from European traditions. Spiritualism, as a way of knowing the world and as "good medicine," provides guidance and protection through observation, teaching, and healing. It is important to note that the value placed on the "spirit" is not related to religion but another way of looking at the world that cannot be explained by science. Some important values and way of living that has some relationships with TCM are

- Living life in balance and harmony (Yin-Yang and Earth-Sky)
- Collectivist thinking and decision-making (consensus)
- Relationship between ancestors, cosmic forces, and the natural world
- Interconnectedness of mind, body, spirit, and emotions (integration of practice).

A Brief Description of the Indigenous Therapeutic Approach

In conversations with Professor Lifang Qu,[9] we begin to understand the relationships and contributions of psychology to Chinese medical practices. At the same time, we also begin to see that TCM psychology and indigenous psychology had much in common. In one of her papers – "On the Psychological Significance of Heart Governing Shen Ming" – she says TCM is:[10]

…uniquely equipped to identify and treat body-mind illnesses because from the ancient times it perceived the interior of the living body as a cosmos, combining cognitive ingredients, social ideals, physical data and sensual self-awareness. The heart – "xin"-was seen as a physical organ as well as the abode of the spirit-mind – "shen".

The way we practice indigenous psychology is holistic and nondual, which is totally different from Eurocentric psychological practice and more in line with TCM. The mind and the body, as

well as the spirit, are all connected, so the approach can go in any direction and affect different parts of the self. In a sense, one might say that indigenous counseling is beyond the traditional constructs of traditional Western psychology's conception of personality and is more in line with TCM. The indigenous approach is a developmental process in which one goes beyond the self-limitation of the physical, psychological, social, and spiritual, to the point of self-realization of unlimited potentialities. Healing is the goal where one works at going beyond just getting rid of symptoms of maladjustment and pathology with approaching counseling with the following processes:[8]

- Cognitive processes, for example, "how are you thinking about yourself vis-à-vis the problem and environment?"
- Affective processes, for example, "how do you feel about the problem, people concerned, and your relationship to them?"
- Action processes, for example, "how is your behavior blocking problem resolution in the group?"
- Spiritual processes, for example, "how does your spiritual emptiness distance you from your connections with the cosmos and all living things?" The focus of the helping process is basically about empowerment of self through reconnecting to all that is good (e.g., nature).

Empowerment is the ability to take control over one's life, resolving issues related to negative life experiences, which means reinforcing positive self-esteem, improving coping skills, and strengthening family and community support networks, just to name a few. Indigenous traditions, practices, and ceremonies are utilized because these are basic elements of one's well-being. In addition, the practice one's culture acts as a way of guiding one's behavior in a direction that reinforces self-worth that anchor all of the people to family and community.

Why is Traditional Chinese Medicine Attractive to Indigenous People?

TCM with its long history as a folk medicine has become quite popular in the indigenous community, not only because it is effective but also because of the philosophical and practical traditions that parallel the ancient Chinese traditions and practices to those of the indigenous people of Canada. According to Xu,[11] the following ideas and concepts are what makes TCM attractive to indigenous communities:

- Cultural inclination to pay attention to natural food and natural medicines
- Natural medicine, such as herbs from the land
- Western medicine has not responded well toward many health issues in indigenous communities such as chronic diseases and extraordinary levels of stress and pain
- Indigenous traditional medicine and TCM see a person having a connection between their mind and body and treat a whole person not just their symptoms.

Conclusion

Plants and animals have always given humankind the opportunity to create an environment of well-being; consider the power of the sage plant – "traditional (Indigenous] stories and myths tell of the power of sage, saying wherever sage is present negative forces cannot enter".[12] The psychological benefit of using plants in ceremonies is an important part of maintaining positive self-esteem as well as helping people who keep a positive attitude, which is why I always recommend to my counseling clients to use plants like sage as a way of creating positive energy. The medicinal use of plants and animals has a long history in folk medicine; however, it is only TCM that has achieved its place as the most widely recognized folk medicine, which has really gone mainstream with the long traditions of TCM and its recognition by governments around the world. Indigenous people of Canada naturally are drawn to TCM, especially since it has a proven record of research practices based on its long history of using natural remedies, established medical policies, and a long history of positive use not only in China but also on almost every country in the world. TCM philosophy resonates with people, especially indigenous people, who want to use medicines that are effective, healthy, and regulated with proven medical practices. We would like to end our discussion with a quote from indigenous ethnobotanist Robin Wall Kimmerer(2013) who reminds us of how relationships and connections are made with a natural pull and push, with tension, and with beauty: "Hold out your hands and let me lay upon them a sheaf of freshly picked sweetgrass, loose and flowing, like newly washed hair".[13]

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Conflicts of interest

There are no conflicts of interest.

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Review Article

Life Nurturing in the Illustrated Daoyin of the 24 Solar Terms (二十四节气)

Yi Shen
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Abstract

China's "24 Solar Terms", known as the fifth invention after China's Four Major Inventions, is a knowledge system and social practice formed through observations of the sun's annual motion, and cognition of the year's changes in season, climate and phenology. More and more people in the world have been eager to know more about it since UNESCO inscribed China's "24 Solar Terms" on the Representative List of the Intangible Cultural Heritage of Humanity in 2016. As a way of nurturing life, the Illustrated Daoyin of the 24 Solar Terms includes twenty-four exercise forms, corresponding to the 24 solar terms respectively, which reflects the significant idea of complying with the law of yin-yang changes in the universe. It presents a series of sitting and standing exercises designed to prevent diseases that occur during seasonal changes throughout the year. The ancient Chinese wisdom of time and life nurturing has been witnessed in China's "24 Solar Terms" and "Illustrated Daoyin of the 24 Solar Terms". This article aims to arouse readers' concern and interest in life nurturing by introducing how to do all the exercises presented by the Illustrated Daoyin of the 24 Solar Terms, which is helpful to the prevention and cure of diseases as well as good for health.

Keywords: 24 solar terms （二十四节气）, illustrated Daoyin, life nurturing

Introduction

The Illustrated Daoyin of the 24 Solar Terms presents a series of sitting and standing exercises designed to prevent diseases that occur during seasonal changes throughout the year. The story goes that it was handed down by Chen Tuan（陈抟）, a legendary Taoist sage, styled Tunan (图南), titled Fuyao Zi (扶摇子), and later conferred the title of Xiyi (希夷) by Emperor Taizong of the Song dynasty（宋太宗）.[1] That is why this exercise is also known as Illustrated Chen Xiyi's Daoyin of the 24 Solar Terms （陈希夷二十四节气导引坐功图）, which was once recorded in *Wan Shou Xian Shu*(《万寿仙书》*A Guide to Longevity and Immortality*) secretly passed on by Luo Hongxian (罗洪先) in the Ming dynasty （明代） and supplemented by Cao Wuji（曹无极） in the Qing dynasty（清代） as well as in *Zhong Wai Wei Sheng Yao Zhi* (《中外卫生要旨》*Essentials of Chinese and Foreign Health*) by Zheng Guanying (郑官应) in the Qing dynasty..

Chen Tuan used to live as a hermit in famous mountains such as Mount Wudang（武当山） and Mount Hua（华山）. In Taoism, Chen Tuan has been claimed as the "Founder of Internal Alchemy School" (内丹派创始人) and the "Earliest Ancestor of Old Hushan School" (老华山派鼻祖). He wrote many books about the Taoist theories and the Taoist internal alchemy for life nurturing,[2] which had a profound influence upon later generations. Being adept in the practice of Taoist's inner alchemy and sleep meditation, Chen Tuan was, therefore, known as "Sleeping Immortal（睡仙）." In Chinese, he is often respectfully referred to as "Ancestor Chen Tuan" (陈抟老祖) and "Founding Master Xiyi" (希夷祖师).[1]

In *Chen Tuan Zhuan* (《陈抟传》*Chen Tuan's Biography*), however, no documentary records witness that the exercise of the 24 solar terms was created by Chen Tuan, from which people later inferred that this exercise was just handed down in Chen Tuan's name. As a matter of fact, what people care more about is the benefits this exercise can bring to them rather than who created it. The following pictures and descriptions will lead readers to a full understanding of the exercise of the 24 solar terms.

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The Illustrated Daoyin of the 24 Solar Terms includes 24 exercise forms, corresponding to the twenty-four solar terms respectively. It is a way of nurturing life[3] of the 24 solar terms, which reflects the significant idea of complying with the law of Yin–Yang changes in the universe.

The 24 solar terms go in sequence as Beginning of Spring (立春), Rain Water (雨水), Awakening of Insects (惊蛰), Spring Equinox (春分), Pure Brightness (清明), Grain Rain (谷雨), Beginning of Summer (立夏), Lesser Fullness of Grain (小满), Grain in Ear (芒种), Summer Solstice (夏至), Lesser Heat (小暑), Greater Heat (大暑), Beginning of Autumn (立秋), End of Heat (处暑), White Dew (白露), Autumn Equinox (秋分), Cold Dew (寒露), Frost's Descent (霜降), Beginning of Winter (立冬), Lesser Snow (小雪), Greater Snow (大雪), Winter Solstice (冬至), Lesser Cold (小寒), and Greater Cold (大寒).[4] According to the Gregorian calendar, the dates of the solar terms in the first half of the year are generally on the 6th and 21st of each month, whereas the dates of the solar terms in the second half of the year are usually on the 8th and 23rd of each month. The dates of the solar terms may vary by a day or two.

January Daoyin of the Beginning of Spring （立春）

Practice this exercise between 23:00 and 3:00 every day. Sit cross-legged with palms overlapped on the laps. Put the left palm on the back of the right hand when breathing in. Extend the arms and shrug the shoulders. Twist the body left with the upper body straight. Make a pause for a while and then relax the shoulders and arms when breathing out. Return to the original sitting posture. Then, breathe in with twisting the body right together. The rest of the steps are the same as the former. Repeat in turn for three to five times. After that, click the teeth, take a deep breath, let the tongue agitate the mouth saliva, and finally swallow [Figure 1]. Repeat in turn for three times. This exercise can prevent and treat diseases such as the stagnation of the wind Qi, neck pain, posterior auricular pain, shoulder–arm pain, backache, and elbow pain.

January Daoyin of the Rain Water （雨水）

Practice this exercise between 23:00 p.m. and 3:00 a.m. every day. Sit straight and press the left palm overlapped on the back of the right hand on the right lap. Turn left with the upper body bended down to the left. Turn the head and the neck. Look back with eyes open. After a pause, turn the head to the right with the upper body bended to the right. Turn the head and the neck. Look back with eyes open. After a pause, turn the head to the left. Repeat like this for 15 times. Then, press the right palm overlapped on the back of the left hand on the left lap and turn the head, the upper body, and the neck as the above [Figure 2]. Repeat like this for 15 times. Finally, click the teeth, swallow mouth salvia, exhale and inhale, and bring the exercise to an end. This exercise can prevent and treat diseases such as dry throat, sore throat, dry retching,[5] inflammation of the throat, deafness, canthus pain, and cheek pain.

February Daoyin of the Awakening of Insects （惊蛰）

Practice this exercise between 1:00 a.m. and 5:00 a.m. every day. Sit cross-legged with hands clenched. Turn the head slowly to the left and then to the right for four times in turn. Bend the two elbows. Raise the forearms up to the chest with palms down and fingers naturally curled up. Stretch the two elbow joints backward together and then return to the original posture [Figure 3]. Repeat like this for 30 times. Finally, click the teeth, swallow mouth salvia, exhale and inhale, and bring the exercise to an end. This exercise can prevent and treat diseases such as pathogenic toxin accumulated in the spleen and stomach, yellowing of the eyes, dryness in the mouth, nosebleed, bleeding gum, head wind (chronic and recurrent headache), puffy face, sudden dumbness due to inflammation of the throat, blurred vision,[6] photophobia, and inability to smell due to nasal congestion.

February Daoyin of the Spring Equinox （春分）

Practice this exercise between 1:00 a.m. and 5:00 a.m. every day. Sit cross-legged at ease. Raise hands up to the armpits from both sides of the body with palms upward. Rotate the palms inward and then push them forward with fingertips upward and arms straight which are as high and wide as the shoulders. At the same time, turn the head to the left, return the hands back to the armpits, and turn the head right ahead. After that, do the same as the above. But, this time, turn the head to the right [Figure 4]. Repeat in turn for 42 times. Finally, click the teeth, swallow mouth salvia, exhale and inhale, and bring the exercise to an end. This exercise can prevent and treat diseases such as consumptive disease[7] of the meridians of chest, shoulder, and back; toothache; neck swelling; shivering with cold and swelling with heat; deafness and tinnitus; posterior auricular pain; shoulder–arm pain; and swelling and itchy skin.

March Daoyin of the Pure Brightness （清明）

Practice this exercise between 1:00 a.m. and 5:00 a.m. every day. Sit cross-legged at ease. Raise the left hand like pulling a bow and then do the same with the right hand but to the different direction [Figure 5]. Repeat in turn for 56 times. Finally, click the teeth, swallow mouth salvia, exhale and inhale, and bring the exercise to an end. This exercise can prevent and treat diseases such as spine pain, deficiency in stomach and intestines, gastrointestinal stagnation, deafness, sore throat, neck pain, shoulder–arm pain, and lumbar flaccidity.

March Daoyin of the Grain Rain （谷雨）

Practice this exercise between 1:00 a.m. and 5:00 a.m. every day. Sit cross-legged at ease. Lift the right hand with the palm upward and fingers pointing toward the left. Bend the left arm in a right angle with the forearm up to the chest, fingers curled up naturally, and the palm pointing inward. Meanwhile, turn

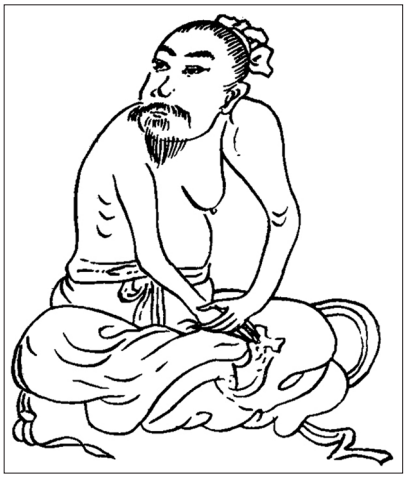

Figure 1: January Daoyin of the Beginning of Spring （立春）

Figure 2: January Daoyin of the Rain Water （雨水）

Figure 3: February Daoyin of the Awakening of Insects （惊蛰）

Figure 4: February Daoyin of the Spring Equinox （春分）

Figure 5: March Daoyin of the Pure Brightness （清明）

Figure 6: March Daoyin of the Grain Rain （谷雨）

the head to the left with eyes looking ahead to the left. Then, do the same with the left hand in turn [Figure 6]. Repeat in turn for 35 times. Finally, click the teeth, swallow mouth salvia, exhale and inhale, and bring the exercise to an end. This exercise can prevent and treat diseases such as spleen–stomach stuffiness and fullness, yellowing of the eyes, nosebleed, cheek–mandible swelling, lateral swelling and pain of elbows, and heat in the palms.

April Daoyin of the Beginning of Summer （立夏）

Practice this exercise between 3:00 a.m. and 7:00 a.m. every day. Sit with one leg crossed and the other leg's knee bended. Embrace the knee with hands intercrossed. Pull the knee with the hands while the knee gives a reverse push to the hands for two or three seconds [Figure 7]. Repeat like this with the two legs in turn for 35 times. Finally, click the teeth, swallow mouth salvia, exhale and inhale, and bring the exercise to an end. This exercise can prevent and treat diseases such as wind-damp stagnation, painful swelling of meridians, armpit swelling, heat in the palms, and endless laughing.

April Daoyin of the Lesser Fullness of Grain （小满）

Practice this exercise between 3:00 a.m. and 7:00 a.m. every day. Sit cross-legged at ease. Press the left hand on the left shank. Lift the right hand with the palm upward and fingers pointing to the left. Then, do the same with the right hand in turn [Figure 8]. Repeat in turn for 15 times. Finally, click the teeth, swallow mouth salvia, exhale and inhale, and bring the exercise to an end. This exercise can prevent and treat diseases such as pathogenic toxin accumulated and stagnated in the lung, fullness in the chest and hypochondrium, palpitations, flushed face and nose, yellowing of the eyes, heart pain with vexation, and heat in the palms.

May Daoyin of the Grain in Ear （芒种）

Practice this exercise between 3:00 a.m. and 7:00 a.m. every day. Stand in a natural posture with two feet apart as widely as shoulders. Lift the hands from the chest with palms upward, two arms straight, fingers pointing backward, and abdomen pointing forward. Bend the back backward with face upward and eyes on the hands for a few seconds. Then, put down the hands slowly along the two sides of the body [Figure 9]. Repeat it for 35 times. Finally, click the teeth, swallow mouth salvia, exhale and inhale, and bring the exercise to an end. This exercise can prevent and treat diseases such as consumptive disease, dry throat, stomachache, yellowing of the eyes, hypochondriac pain, wasting-thirst (diabetes), frequent laughing and fright, amnesia, thigh pain with generalized fever, grief, nape pain, and flushed face.

May Daoyin of the Summer Solstice （夏至）

Practice this exercise between 3:00 a.m. and 7:00 a.m. every day. Squat down with the arms straight, fingers intercrossed, and palms inward. Push hands with the right foot outward while pulling the hands inward for 2 or 3 seconds. Then, do the same with the left foot [Figure 10]. Repeat in turn for 35 times. Finally, click the teeth, swallow mouth salvia, exhale and inhale, and bring the exercise to an end. This exercise can prevent and treat diseases such as wrist pain, knee pain, shoulder pain, arm pain, heat in the palms, lumbago; and the heaviness and fatigue felt in the body.

June Daoyin of the Lesser Heat （小暑）

Practice this exercise between 1:00 a.m. and 5:00 a.m. every day. Put the hands behind to support the ground with fingers pointing backward, arms straight, the left leg extending forward, and the heel on the ground. Bend the right knee so that the thigh is pressed on the shank. Stare at the tiptoe with the body moving forward and then backward. Do the same with the other leg [Figure 11]. Repeat in turn for 15 times. Finally, click the teeth, swallow mouth salvia, exhale and inhale, and bring the exercise to an end. This exercise can prevent and treat diseases such as wind and dampness in the leg, knee, lumbus and thigh; dry throat; hemiplegia; amnesia; archoptoma; and moodiness.

June Daoyin of the Greater Heat （大暑）

Practice this exercise between 1:00 a.m. and 5:00 a.m. every day. Sit cross-legged with fists clenched on the ground. Then, straighten the arms as widely as the shoulders with fists downward. Move the barycenter of the body forward with the upper body bended forward. Turn round the head with eyes staring at the upper right on the left side. Then, move the barycenter of the body backward, with the head turning to the front. After that, move the barycenter of the body forward again, with the head turning right. Do the same as the above in the opposite direction [Figure 12]. Repeat in turn for 15 times. Finally, click the teeth, swallow mouth salvia, exhale and inhale, and bring the exercise to an end. This exercise can prevent and treat such diseases as cough, asthma, fullness in the chest, vexation, arm pain, pain above the umbilicus, back pain, polyuria, skin numbness and pain, grief and worry with a desire for crying, intolerance of cold with fever.[8]

July Daoyin of the Beginning of Autumn （立秋）

Practice this exercise between 1:00 a.m. and 5:00 a.m. every day. Sit on the heels with the upper body forward. Stretch both arms as widely as shoulders to support the ground. Then draw back the chest and shrink the body with holding your breath. Raise the body and move its barycenter forward. After a pause, return to the original posture [Figure 13]. Repeat it for 56 times. Finally, click the teeth, swallow mouth salvia, exhale and inhale, and bring the exercise to an end. This exercise can prevent and treat diseases such as consumption,[9] bitter taste in the mouth and frequent sighing,[10] heart and hypochondriac pain, inability to turn over, lusterless complexion, foot heat, headache, chin pain, orbital pain, armpit swelling, and painful swelling of the supraclavicular fossa.[11]

July Daoyin of the End of Heat （处暑）

Practice this exercise between 1:00 a.m. and 5:00 a.m. every day. Sit straight. Draw the head to the upper right on the left side and then slowly to the upper behind the right side. Meanwhile, pound the back and the waist for six times every time when the head turns [Figure 14]. Repeat in turn for 35 times. Finally,

Figure 7: April Daoyin of the Beginning of Summer （立夏）

Figure 8: April Daoyin of the Lesser Fullness of Grain （小满）

Figure 9: May Daoyin of the Grain in Ear （芒种）

Figure 10: May Daoyin of the Summer Solstice （夏至）

Figure 11: June Daoyin of the Lesser Heat （小暑）

Figure 12: June Daoyin of the Greater Heat （大暑）

click the teeth, swallow mouth salvia, exhale and inhale, and bring the exercise to an end. This exercise can prevent and treat diseases such as wind-damp; pains of shoulder, back, chest, spine and joints; and cough with asthenic breathing.

August Daoyin of the White Dew （白露）

Practice this exercise between 1:00 a.m. and 5:00 a.m. every day. Sit cross-legged with the hands pressing the knees. Draw the head slowly to the left and then to the right for 15 times each. Finally,

Figure 13: July Daoyin of the Beginning of Autumn （立秋）

Figure 14: July Daoyin of the End of Heat （处暑）

click the teeth, swallow mouth salvia, exhale and inhale, and bring the exercise to an end [Figure 15]. This exercise can prevent and treat diseases such as shivering with cold, fright and madness at the sound of water, sweating,[12] nosebleed, neck swelling, inability to speak with inflammation of the throat, and vomiting.[13]

August Daoyin of the Autumn Equinox （秋分）

Practice this exercise between 1:00 a.m. and 5:00 a.m. every day. Sit cross-legged with the hands covering the ears and the fingers pointing backward. Draw the upper body to the left side and then slowly to the right side [Figure 16]. Repeat in turn for 15 times. Finally, click the teeth, swallow mouth salvia, exhale and inhale, and bring the exercise to an end. This exercise can prevent and treat diseases such as wind-damp, abdominal water swelling, painful swelling of the kneecaps, lateral pain of the thigh and shank, enuresis, abdominal distension,[14] swift digestion with frequent drinking, stomach cold, dyspnea and fullness in the chest.

September Daoyin of the Cold Dew （寒露）

Practice this exercise between 1:00 a.m. and 5:00 a.m. every day. Sit cross-legged with the palms upward and fingers facing the fingers. Lift the hands slowly up to the chest. Rotate the forearms inward and lift the hands slowly with palms upward, fingertips outward, and arms straight in an open posture. Lift the body with the head turning to the left and palms downward. Put down the arms slowly along the two sides of the body [Figure 17]. Repeat like this for 15 times. Finally, click the teeth, swallow mouth salvia, exhale and inhale, and bring the exercise to an end. This exercise can prevent and treat diseases such as pathogenic toxin of wind-cold-damp invading the meridians of rib side and armpit, spine pain, yellowing of the eyes, tearing, nosebleed, and cholera.

September Daoyin of the Frost's Descent （霜降）

Practice this exercise between 1:00 a.m. and 5:00 a.m. every day. Sit with straight legs. Put the hands around the soles respectively. Bend the knees, push the feet forward, and pull the hands backward for a few seconds. Then, bend the knees with the arms curled up at the same time [Figure 18]. Repeat like this for 35 times. Finally, click the teeth, swallow mouth salvia, exhale and inhale, and bring the exercise to an end. This exercise can prevent and treat diseases such as arthralgia caused by wind-damp, tearing pain of the shank; pains of neck, back, lumbus, and buttocks; muscular atrophy; purulent and bloody stool; distending pain of the lower abdomen; inhibited urination; and archoptoma with chronic hemorrhoids.

October Daoyin of the Beginning of Winter （立冬）

Practice this exercise between 1:00 a.m. and 5:00 a.m. every day. Sit cross-legged. Raise the hands up to the chest along the sides of the body with the palms upward and the head turning left. Then, put down the arms slowly with the head turning right ahead. Do the same again with the head turning right first and then right ahead [Figure 19]. Repeat in turn for 15 times. Finally, click the teeth, swallow mouth salvia, exhale and inhale, and bring the exercise to an end. This exercise can prevent and treat diseases such as stagnation in the chest and hypochondrium, consumptive disease, lumbago causing to fail in bending and lifting, dry throat, lusterless complexion, hiccup and vomiting with fullness in the chest, headache, cheek swelling, reddish eyes with swelling pain, hypochondriac pain involving the lower abdomen,[15] stuffiness and fullness.

October Daoyin of the Lesser Snow （小雪）

Practice this exercise between 1:00 a.m. and 5:00 a.m. every day. Sit cross-legged with the left hand on the left knee and fingers outward. Put the right hand around the left elbow. Then, pull the right hand and the left elbow outward forcefully in an opposite direction for a few seconds. After that, put the left hand around the right elbow. Do the same as the above. Repeat like this in turn for 15 times. Finally, click the teeth, swallow

Figure 15: August Daoyin of the White Dew （白露）

Figure 16: August Daoyin of the Autumn Equinox （秋分）

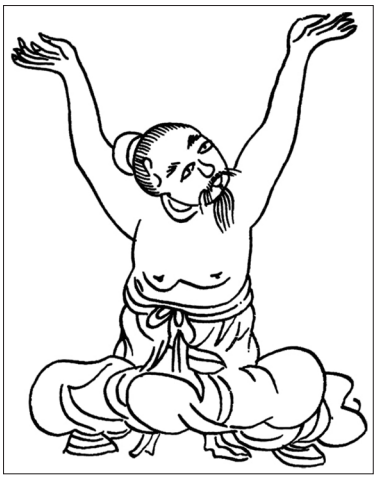

Figure 17: September Daoyin of the Cold Dew （寒露）

Figure 18: September Daoyin of the Frost's Descent （霜降）

Figure 19: October Daoyin of the Beginning of Winter （立冬）

Figure 20: October Daoyin of the Lesser Snow （小雪）

mouth salvia, exhale and inhale, and bring the exercise to an end [Figure 20]. This exercise can prevent and treat diseases such as arthralgia caused by wind-damp, swelling of women's lower abdomen, enuresis, painful swelling of the testicle, twitch, retracted genitals, throughflux diarrhea, cough with asthma, and frequent fright.

November Daoyin of the Greater Snow （大雪）

Practice this exercise between 23:00 p.m. and 3:00 a.m. every day. Stand in a natural posture with feet separate as widely as the shoulders and knees slightly bended. Straighten the arms on

Figure 21: November Daoyin of the Greater Snow （大雪）

Figure 22: November Daoyin of the Winter Solstice （冬至）

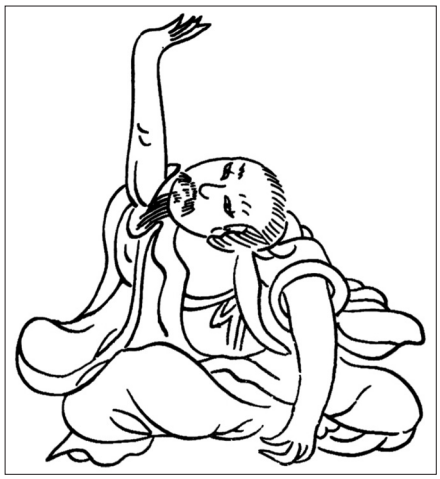

Figure 23: December Daoyin of the Lesser Cold （小寒）

Figure 24: December Daoyin of the Greater Cold （大寒）

both sides with palms outward and fingertips upward. Lift the feet and legs and march on the spot for several times. Finally, click the teeth, swallow mouth salvia, exhale and inhale, and bring the exercise to an end [Figure 21]. This exercise can prevent and treat diseases such as knee and foot pains due to wind-damp, mouth heat, dry tongue, sore throat, and heart pain with vexation.

November Daoyin of the Winter Solstice （冬至）

Practice this exercise between 23:00 p.m. and 3:00 a.m. every day. Sit in a straight-legged pose. Separate both legs as widely as shoulders. Press the knees forcefully with Sit in a straight-legged pose. Separate both legs as widely as shoulders, elbows forward on both sides, palms outward, and the upper body forward. Then, move the barycenter of the body backward and press the knees slightly with fists [Figure 22]. Repeat it for 15 times. Finally, click the teeth, swallow mouth salvia, exhale and inhale, and bring the exercise to an end. This exercise can prevent and treat diseases such as cold-damp in the hand-foot meridians, foot atrophy-flaccidity, heat in the soles, umbilicus pain, abdominal pain, hypochondriac pain, fullness in the chest, difficult defecation, cough, lumbar cold, frostbite, diarrhea and flaccidity of the limbs.[16]

December Daoyin of the Lesser Cold （小寒）

Practice this exercise between 23:00 p.m. and 3:00 a.m. every day. Sit cross-legged with the right thigh on the left shank and the right shank forward. Press the right sole with the left hand. Lift the right hand with palm upward, fingers pointing right, and eyes on the lifted hand. After that, do the same alternately [Figure 23]. Repeat like this in turn for 15 times. Finally, click the teeth, swallow mouth salvia, exhale and inhale, and bring the exercise to an end. This exercise can prevent and treat diseases such as vomiting as soon as eating, epigastric pain, abdominal distension, the heaviness and fatigue felt in the body, acute pain below heart, difficulty in urination and defecation, and jaundice.

December Daoyin of the Greater Cold （大寒）

Practice this exercise between 23:00 p.m. and 3:00 a.m. every day. Sit with one leg forward and the other kneeling on a bed. The sole of the forward foot supports the ground. Buttocks

should sit on the heel of the knelt leg. The upper body lies backward with arms put behind on the ground on both sides and fingertips pointing backward sideways. Move the barycenter of the body backward and then forward. Do the same with the two legs alternately [Figure 24]. Repeat in turn for 15 times. Finally, click the teeth, swallow mouth salvia, exhale and inhale, and bring the exercise to an end. This exercise can prevent and treat diseases such as pathogen invading the meridians,[17] pain in the stiff tongue, inability to move and lie, pain of the foot back, abdominal distension, borborygmus, diarrhea, and ankle swelling.

Following all the exercises presented by the Illustrated Daoyin of the 24 Solar Terms will be beneficial to the prevention and cure of diseases as well as good for nurturing life. Why not have a try for your health?

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Conflicts of interest

There are no conflicts of interest.

Note

All the pictures in the text are downloaded from Baidu Library (百度文库) at https://www.baidu.com/. (2018.6.30.)

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Review Article

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

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Abstract

Traditional Chinese Medicine (TCM) in British Malaya developed concurrently with the influx of Chinese immigrants. To cater for this growing community, Chinese medical halls which sell Chinese herbs were established in major townships. Consultation and various TCM treatments were also offered by contract TCM practitioners in some of these medical halls. As the needs for TCM services continued to grow, dedicated TCM institutions were set up subsequently. The establishment of these institutions marked the beginning of professional TCM services in the history of Malaysia.

Keywords: Development, history, Malaysia, medical institutions, Traditional Chinese Medicine

Introduction

This article is a continuation of a previously published article in issue 2 of the Chinese Medicine and Culture 2018. The previous article examined the interactions between China and Malay Peninsula. Kuang Yu (匡愚) is believed to be the first Chinese medicine practitioner set foot in the Malacca Sultanate. Traditional Chinese Medicine (TCM) was later systematically introduced to the Malay Peninsula during the British colonial rule, and its growth was closely related to the blossoming of tin mining industry. Over the years, many local herbs were absorbed and used by TCM practitioners in the Malay Peninsula. Some tropical herbs had even become important exports to China; influencing and reshaping the way TCM were practiced in Mainland China.

This article aims to provide a brief overview on the development of TCM institutions in the pre-colonial and post-independent Malaysia.

Institutions of Traditional Chinese Medicine

During the British ruling of Malaya, the Chinese immigrants concentrated on working in the tin mining and trading. The nature of their livelihood determined that they would live nearby to the tin mines and ports. As the number of Chinese immigrants expanded, these areas formed into a larger community. Together with these growing communities laid the needs for healthcare services. Yin Oi Tong (仁爱堂) was the first Chinese medical hall operating in the Penang Straits Settlement. Established by Mr. Koo Suk Chuan (古石泉) in 1796, Yin Oi Tong offered not only hundreds of Chinese herbs for over-the-counter consumption, but also TCM consultation service by contract TCM practitioners.[1-3] This relationship between TCM practitioners and Chinese medical hall is seen mutually beneficial to both parties as it provides TCM practitioners with the lifeline of starting up a clinic, while at the same time maintains herbal demand necessary for the survival of Chinese medical hall. This mode of mutual cooperation still exists in today's Malaysia society. Figure 1 is the facade of Yin Oi Tong [Figure 1].[4]

In 1879, Malaya saw its first dedicated TCM infirmary, the Chha Yong Fay Choon Kuan (茶阳回春馆) set up in Kuala Lumpur. The Chha Yong Fay Choon Kuan was sponsored by the Char Yong Society of Selangor and Wilayah Persekutuan (雪隆茶阳公司), an association set up to strengthen the

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bond among the Chinese Hakka and to help each other during emergency. Owing to the needs, the society set up an infirmary and recruited a TCM practitioner to provide TCM consultation at this infirmary. The infirmary also acted as a wake memorial place for those families whose member had died. Figure 2 shows the original building where Chha Yong Fay Choon Kuan was located in 1879 [Figure 2].[5] Although it was small, the infirmary managed to keep its TCM operation for a continuous 32 years.[6]

In the early 19th century, TCM institutions in Malay Peninsula were primarily owned and operated by individuals. The establishment of TCM hospitals in the 1860s was the turning point in the development of TCM in Malaysia. Not only could these hospitals accommodate a larger capacity of patient load, but they also marked the beginning of a proper and more professional TCM services in the history of Malaysia. Three of the earliest TCM hospitals in the British-ruled Malaya were the Singapore Thong Chai Medical Institution (新加坡同济医院), Tung Shin Hospital (同善医院), and Lam Wah Ee Hospital (南华医院).

The Singapore Thong Chai Medical Institution was established in 1867 by seven largest business Chinese entities in the Singapore Straits Settlement. It was originally called Thong Chai Yee Say (同济医社) with the aim of providing free medical consultation and herbal medicine to the residents of Singapore Straits Settlement. Derived from Cantonese, the name "Thong Chai" literally means helping or relieving sick people equally regardless of their socio-economical backgrounds. In 1886, a piece of land at Wayang Street was granted by the Governor of the Straits, Sir Cecil Clementi Smith in supporting the welfare work of the institute. The institute then changed to its current name in 1892 when it moved into the site at Wayang Street. Thong Chai Medical Institution played a pivotal role in charitable fundraising. From 1903 to 1961, the institution supported the communities by raising funds for disaster rescue works in both local Singapore and China. The Wayang Street site has now been gazetted as a historic building in Singapore.[7] Figure 3 is the former Thong Chai Medical Institution at Wayang Street [Figure 3][8]

Between 1901 and 1983, the institution held an examination triennially for the recruitment of TCM practitioners. Owing to the gazetting of historic building, the institution was relocated to Chin Swee Road. This new site marked a new milestone for the institution for it included a TCM library. Chinese herbs

Figure 1: Facade of Yin Oi Tong

Figure 2: Chha Yong Fay Choon Kuan in 1879

Figure 3: Original Thong Chai Medical Institution (新加坡同济医院)

Figure 4: Original Tung Shin Hospital （同善医院）

Figure 5: Lam Wah Ee Hospital in 1883 (南华医院)

were also on display at the new site. In 1983, the institution replaced the examination with an in-house 3-year full-time postgraduate program to nurture future TCM practitioners. Unfortunately, the program was shut down after 5 years owing to lack of students. Nevertheless, its free medical consultation and herbal medication services have survived and continue to be used by Singaporeans until today.[9]

Tung Shin Hospital was established in 1881 by Kapitan Yap Kwan Seng. Kapitan is a title honored by the British colonial government to ethnic leader who contributed to the welfare of the society. Yap felt that the tin miners in Kuala Lumpur, mainly Chinese ethnic, were not given proper medical treatment. In light of this condition, Yap donated money and established Pooi Shin Tang (培善堂) to provide free medical treatment in appreciation of the contributions of the tin miners. As the patient load began to increase year on year, Pooi Shin Tang was converted into a charity organization named Tung Shin Hospital in 1894.[10] Figure 4 is an image of the original building of Tung Shin Hospital which is still in use.[11] In 1986, a 60-bed inpatient TCM department was set up by the hospital mainly for stroke patients. The TCM practitioners would provide a combination of acupuncture, tuina, and TCM herbal formula treatment for patients. Since then, Tung Shin Hospital has been in operations for the past 123 years and has served millions of people to date.

Figure 5 is an image of the Lam Wah Ee Hospital in 1883, Penang.[12] The hospital was inaugurated in 1884 after a group of people led by Tan Ley Kum (陈俪琴) and Khoo Thean Teik (邱天德) raised sufficient funds for its operations. In Cantonese, "Lam Wah" means "Chinese in the South" and "Ee" means "medicine." The original building at Muntri street was unfortunately destroyed in the Japanese air raids during World War II. It was rebuilt in 1955.[13] Initially, Lam Wah Ee Hospital relied on importing experienced TCM practitioners from China to provide the services. An examination system was later introduced as a selection criterion of local TCM practitioners similar to that used by the Thong Chai Medical Institution. Tung Shin Hospital also adopted a similar approach in recruiting talented local TCM practitioners. To date, the examination system is still being used in Tung Shin Hospital

Figure 6: Original Chinese Medical Aid Department （中华施诊所The building was burnt to ash in a fire incident in 2017）

and Lam Wah Ee Hospital, with the aim to ensure competent TCM practitioners were recruited. Both TCM hospitals are charity organizations and are still in operation today serving all people irrespective of their race, religion, and social status. Running a charity hospital requires tremendous funding. Nevertheless, Lam Wah Ee Hospital continues to provide free treatment to the poor and needy by sourcing their expenses through direct donations and rental collections.[13] With financial support from Tan Sri Dato' Loh Boon Siew, the late Penang tycoon, the hospital later opened a separate wing for the inclusion of western medicine. Similar to the TCM services, the western medicine services are also run on charity basis. These two hospitals are the pioneers in the field of integrative medicine in Malaysia.

There was also one important TCM charity clinic established in the 1950s. The Chinese Medical Aid Department (中华施诊所) was established in Kuala Lumpur by the Chinese Physicians Association of Central Malaya. Its aims were to promote TCM, nurture future generations of TCM practitioners, and provide medical aid to the underprivileged community. On the March 17, 1954, the Chinese Medical Aid Department began its charity operations on a corner of the Chan See Shu Yuen Clan Ancestral Hall (陈氏书院).[14] TCM practitioners offering consultation were all volunteers. Public donations were used to cover the expenses of procuring and prescribing free medication to the needy. Owing to increased demand for the services, fundraising was held to support the construction of a 3-story building at the current Hang Jebat Road. In 1959, the building was completed, and the Chinese Medical Aid Department moved into the first two floors. The third floor was used as the lecture hall and library of the Malaysian Chinese Medical Institute. Such environmental settings allowed TCM students at the Malaysian Chinese Medical Institute a convenient access to observe and practice clinically.[14] Figure 6 is an image taken prior to the fire incident[15]

The heyday of the Chinese Medical Aid Department started from 1960 onward. Not only had the expansion allowed

additional services such as acupuncture to be offered to the public, there was even an X-ray department set up within the building until the enforcement of the Atomic Energy Licensing Act in 1984. In 1989, specialist clinics including pediatric, gynecology, dermatology, rheumatology, ENT, anorectal, and andrology were set up. Patient load continued to increase tremendously throughout the period between the 1990s and 2000s. Equally, public donations also continued to pour into the department supporting the increasing expenses incurred by the growth in patient load. In 2012, a branch of the Chinese Medical Aid Department was set up in Pudu West Road. Similar to the headquarter, the Pudu branch is also used as a clinical teaching base for the Malaysian Chinese Medical Institute, INTI University, International Medical University, and Universiti Tunku Abdul Rahman. Close collaborations continue to be seen between the TCM education providers and the TCM industry.[14]

In addition to medical institutions set up by local Chinese, there are also a few foreign institutions offering TCM consultation services in the 21st century Malaysia. Unlike those charity institutes discussed above, foreign institutions are mostly profit-making organizations. In 2002, Hai-O Enterprise (海鸥集团), a local TCM herbal manufacturer and supplier joint ventured with Tongrentang China Group (北京同仁堂集团) in starting the Peking Tongrentang (Malaysia) business in Kuala Lumpur. Originated as the royal-appointed herbal supplier to the Qing monarchy, Tong Ren Tang, is a good manufacturing process certified TCM herbal supplier in Beijing.[16] This is a company that offers TCM services ranging from retail herbs store and over-the-counter medicine to TCM consultation and prescribed medication all under one roof. TCM practitioners are sent from China to provide consultation in Malaysia. To date, there have been additional two branches set up in Petaling Jaya and Penang.[17]

In 2016, the Federation of Chinese Physicians and Medicine Dealers Associations of Malaysia collaborated with Chengdu University of TCM (成都中医药大学) in starting a diabetes specialist center. Situated in Bangsar South, the center aims at promoting awareness for diabetic prevention and control.[18] The concept of setting up the center was mooted after a national survey revealed that 17.5% of Malaysia population aged 18 years and above are diabetic, with the main increase shown in undiagnosed diabetes.[19,20] It is hoped that through strategic One Belt, One Road (一带一路) partnership that Malaysia hopes to find a TCM solution in tackling the prevalence of diabetes.

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Review Article

Cultural Nourishment for the Development of Chinese Medicine

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Abstract

Medicine, especially traditional Chinese medicine, is by no means a single level of knowledge system and operational skills, but is full of humanistic color, encompassing natural science and social science, medical theory and traditional culture. Traditional Chinese medicine is rooted in the splendid traditional culture of China, and its theoretical exploration methods and explanations are based on the historical and colorful traditional Chinese culture. This article will give advice on the irrigation and nourishment of traditional culture.

Keywords: Chinese medicine, cultural nourishment, development, suggestions

Definition of Culture

Culture is the social behavior and norms found in human societies. The concept of material culture covers the physical expressions of culture, such as technology, architecture and art, whereas the immaterial aspects of culture such as principles of social organization, philosophy, literature, and science comprise the intangible cultural heritage of a society. Traditional Chinese culture is one of the world's oldest cultures, originating thousands of years ago. It is the root of and soul to the Chinese nation.

Characteristic of Chinese Medicine

Traditional Chinese medicine (TCM) is rooted in the splendid traditional culture of China, and its theoretical exploration methods and explanations are based on the historical and colorful traditional Chinese culture. Chinese medicine, the towering tree that has lasted for thousands of years, is still flourishing, which exactly derives from the nourishment of traditional Chinese culture.

"If you can't be a good prime minister, then be a good doctor," (不为良相，便为良医) which for thousands of years has become the value orientation of Chinese intellectuals; "A good medicine tastes bitter（良药苦口）" means "Good advice is harsh to the ear （忠言逆耳）," which for thousands of years has become a famous saying for self-cultivation of Chinese people; "Curing the sickness to save the patient（治病救人）" and "Healing the wounded and rescuing the dying（救死扶伤）" have also become a moral standard beyond time and space. TCM, as a part of traditional Chinese culture and even an important part of Chinese social life, has been passed down from generation to generation.

It is indisputable that the humanistic factors, such as philosophical basis, thinking method, value orientation, national consciousness, and customs, play an important supporting role in health-care behaviors. "Correspondencebetween nature and human（天人相应）," "recuperating the patients as a whole（整体调治）," "treatment according the trend of its development（因势利导）,""eliminating pathogenic factors at the nearest hand（就近祛邪）," "treatingdisease from the root（治病求本）," and "simultaneous treatment of bothbody and spirit（形神兼治）" are all the characteristics and features of TCM, which stem from the unique way of thinking of the Chinese nation and the rational sublimation of the life and

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production experience of the Chinese people cultivated by the farming culture.

Development of Chinese Medicine

Medicine, especially TCM, is by no means a single level of knowledge system and operational skills, but is full of humanistic color, encompassing natural science and social science, medical theory, and traditional culture. Whether reviewing the past, envisaging the present, or looking into the future, the occurrence and development of TCM, in addition to relying on in-depth research in clinical practice and the promotion of advanced technology, must rely on the irrigation and nourishment of traditional culture. To this end, we propose the followings:

Colleges and universities of TCM should establish special institutions, organize full-time personnel, and allocate special funds to make positive contributions to the inheritance, research, dissemination, and guidance of TCM culture.

Students in TCM colleges and universities are the main source of practitioners, so it is necessary to carry out general education on humanistic basis for them. Certain quantity and quality of this kind of education should be guaranteed, with special assessment system.

In order to carry forward TCM culture, the in-depth academic research should be carried out in the professional field of TCM through continuous education to improve the traditional cultural literacy of the practitioners.

More attention should be paid to the spread of TCM among the public and to improve their understanding and acceptance.

From the perspective of global cultural collision, exchange, complementarity, and integration, developed countries with industrial culture as the background have developed strong interest and objective demand for TCM. Some scholars believe that the cross-cultural communication barriers encountered in the process of the internationalization of TCM are prominently manifested in the different values of TCM and Western science, as well as the difficulties in the accurate translation of philosophical abstractions, analogism, entity falsified, and other aspects. In this regard, we should also attach great importance to the cultural level.

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There are no conflicts of interest.

Review Article

Traditional Vietnamese Medicine between Chinese Heritage and National Tradition

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Abstract

The influence of Chinese medical theory and practice on traditional Viet Nam medicine in the past is undeniable. We can discuss about a Chinese heritage. This Chinese School of Traditional Medicine has trained a large number of Vietnamese doctors. There is, however, throughout the history of medicine in Viet Nam and along with the native genius, the birth of a Vietnamese specificity. What is the part of the heritage in this tradition, what is its own distinctiveness? Hence the title of this article.

Keywords: Heritage, Hải Thượng Lãn Ông（海上懒翁）, Northern medicine, Southern medicine, specificity, traditional Chinese medicine, Tue Tinh（慧静）, Vietnamese traditional medicine

Chinese Heritage

The history of traditional medicine in Viet Nam has often been considered as just a heritage of China's long annexation. For Northern Viet Nam, the heritage is explained by several factors: the geographical proximity, a common history of more than a thousand years of Chinese annexation, and a common language and writing. For Southern Vietnam, it is more influenced by India. It is in fact the reason for the name Indochina.

A common history

North Viet Nam is annexed by China, from the reign of Hàn Wǔdì (汉武帝) until the end of the reign of the Tang Dynasty（唐代） (141 B.C.-907 A.D.). Then again annexed by the Yuan-Ming dynasties between 1420 until 1427.

Compliance with the Chinese model exists not only in the organization of the medical profession but also in the administration and culture.

Based on the model of China, the Vietnamese Dynasties settled in Huê. This town became the capital for the imperial court. In 1802, Gia-Long（嘉隆帝） [Figure 1], the first king of the Nguyen dynasty, created in Huê a medical corpus which gradually became hierarchical and assimilated to Mandarins. A medical institution, the *Thai-y vien* （越南阮朝）, raised from there. Vietnamese doctors are recruited and sent throughout the country. However, this form of institutionalization of medicine remains marginal. An apprenticeship from father to son or teacher to student provides the largest number of physicians who claim to be inspired by the Chinese tradition.[1]

Another lasting model is the technique of flooded rice. We still see this technique throughout Viet Nam.

A common language

The current Vietnamese language, spoken by more than 80% of the population of Viet Nam, is a mixture close to an amalgam of the Thái, Khmer, Chinese, and Vietnamese elements, but the Chinese are clearly dominant.

In contact with China, the Vietnamese people incorporate Chinese elements into their culture. On the other hand, Chinese words are going to be tinted with Vietnamese. Both Chinese and Vietnamese languages give birth to the Sino-Vietnamese language.

A common writing

The first writing used in Viet Nam was Chinese writing.

Chinese writing *Chu Nho* or "Writing of the Literates" （儒字） was the official writing. The classical medical texts are

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studied in Chinese by high-ranking families, i.e., Mandarins, a legacy often from father to son. It was necessary to wait until the beginning of the 20th century for these texts to be translated into Vietnamese writing.

Sino-Vietnamese writing *Chu Nôm* or "South writing" （字喃） is essentially based on a transcription system of the Vietnamese words combined with Chinese characters, according to the sound of a Vietnamese word or the meaning of a Vietnamese word. Used from the 13th century onward for literary works, it was however never the official writing. Not standardized, this writing whose handling required the knowledge of the Chinese remained the prerogative of an elite.

There are two ways of transcription:

1. Direct transcription 官, *guān* in Chinese and *quan* in Sino-Vietnamese
2. A character is a combination of its semantic value and of its phonetic value.

mouth	peace	eat
zh:kou	zh:an	vn: an
口	安	咬

Finally, the important event occurred in the 17th century with the French Jesuit Alexander de Rhodes （法国耶稣会传教士罗德） [Figure 2] who invented the national writing *Quôc Ngu* （国语字）. He used the Latin alphabet to create Vietnamese writing; there are no longer Chinese characters. The consequences of this event are very significant. Vietnamese writing becomes accessible to the entire population without elitism, thus enabling the unification of the country. This writing is practiced until now.

The evolution of writing has a great importance in the transmission of Chinese heritage in traditional Vietnamese medicine (TVM). Despite the advent of the national writing brought by Alexander de Rhodes, Viet Nam continued to practice Chinese writing by various ruling dynasties until 1945, at the end of the Nguyen dynasty with Bao-Dai, the last Vietnamese king.

From that date on the *Quoc Ngu* has become the national Vietnamese writing, undoubtedly the advent of French colonization also contributed to the return of Vietnamese national writing.

The medical writings, inherited from China, are gradually translated into Vietnamese writing, accessible to everybody. They are thus enriched and become more specifically Vietnamese.

Birth of a Tradition, the Sino-Vietnamese Traditional Medicine

Two giants of traditional medicine marked their time and gave birth to specificity of the traditional medicine of Viet Nam: Tuê Tĩnh Thiền sư 慧静禅师(1330–1400) and Hải Thượng Lãn ™ng 海上懒翁 (1724–1791) [Figure 3].

Figure 1: The writing of Emperor GIA LONG （嘉隆帝 1762–1820）, Comment about Duy Xuyen district and the recruitment of mandarins

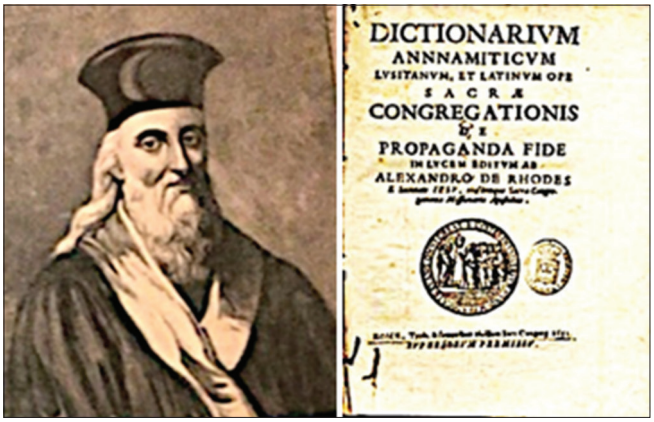

Figure 2: Alexandre de Rhodes（罗德） 1591–1660, Dictionarium Annamiticum Lusitanum et Latinum. 1651

Figure 3: Hải Thượng Lãn Ông （海上懒翁 ，1724–1791）-Tuê Tĩnh Thiền sư （慧静禅师，1330–1400), Tuê Tĩnh Thiền sư alias Nguyền Bá Tíng （阮伯静，1330–1400）

Tue Tinh Thien Su was born in 1330 in Hai Duong. At 6 years old, he lost his parents. As an orphan he was raised by monks. Having past the examination of the Mandarinate, he refused to leave the monastery, became a monk, and took the name of Tuệ Tĩnh. He studied medicine at the monastery. He was a very famous doctor. In 1385, he was sent to the Chinese court under the Ming Dynasty-appointed Grand Doctor of the court. He died in China in 1400 (?).

When he was in China, he often shed tears about his fate far from his native land and hoped that one day he would return to his hometown. On his tombstone, he had a verse engraved:

"To whoever goes southward: take me with thee." In 1690, Dr. Nguyen Danh Nho travelled to China to visit the Tuê Tĩnh's tomb. Moved by the passion of the famous doctor, Dr. Nguyen Danh Nho made a drawing of his tomb. Back in Hai Duong, he built the tomb exactly as it was; since then, it becomes a place of pilgrimage for the Vietnamese. They consider him as a saint.

Tuê Tĩnh was a great precursor of traditional national medicine. He founded the Vietnamese traditional medicine. He said, "Medicine of the South heals people of the South;" these words became famous for Vietnamese people.

He made two fundamental observations to demonstrate the specificity of TVM:

1. Some effective remedies for people from the North (i.e., China) have an opposite effect for the people from the South (i.e., Viet Nam)

For example, the ginger and cinnamon used for people in the North gave a feeling of pleasant warmth; they have a harmful effect for the people of the South.

2. Climatic adaptation of the South: Tropical diseases and damp-heat. China is in a temperate zone whereas Vietnam is in a tropical zone. As a result, the two countries do not have access to the same plants. Tuê Tĩnh takes into account the Vietnamese tropical climate and prescribes small amounts of "calorific" ingredients to his compatriots. For fevers, he uses a "reconciling remedy" or *Hoa Giai*, composed at first times with soothing agents, then acrid agents so as to lower the temperature. He recommends the following plants for this remedy:
   - Acrid agents: *Zingiber officinale* and *Allium fistulosum*
   - Soothing agents: *Dolichos hirsutus*, *Gardenia florida*, *Bambusa*, gypsam, *Hodgsonia macrocarpa*.

He made the distinction between the medication of Northern *Thuoc Bac* which is, in fact, Chinese traditional medicine, and the medication of Southern *Thuoc nam*, which is specifically Vietnamese traditional medicine.

His works:

He wrote two books of great importance:

1. *Nam dược thần hiệu* （《南方医学的神奇疗效》 *Miraculous Effects of Southern Medicine*） [Figure 4]
   - 1761 First Chinese edition by Monk Ban Lai, his disciple (Hanoi). Ten pharmacopoeia treaties
   - 1960 First edition in Vietnamese by the Printing of the School of Traditional Medicine in Hanoi
   - 1972 reissued by the same publishing house
2. *Hồng Nghĩa Giác Tư Y Thư* （《红義官医书面》 Written on the medicine of the Mandarin of Hong Nghia [Figure 5] in 2 volumes. The first edition is drafted in Sino-Vietnamese (*Nôm*) in 1723. We have to wait until 1978 to get the translation in to national writing (*Quoc ngu*) by the Association of the Sino-Vietnamese, Faculty of Medicine of Hanoi.

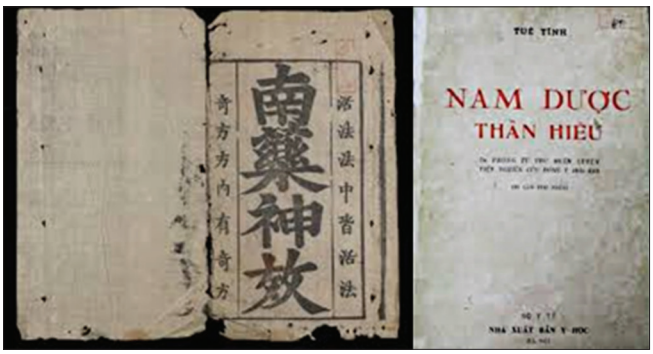

Figure 4: *Nam dược thần hiệu* （《南方医学的神奇疗效》 *Miraculous Effects of Southern Medicine*)

The first volume includes *the Medicine of the South*, the prescription of the medicine of the South, the comments of 37 treaties of the fevers (typhoid).

Volume 2 includes 13 methods of treatment and therapeutic approach by medicinal plants of the country.

However, Tuê-Tinh's doctrine of traditional VN medicine is not a separation from China; it appears to be an adaptation for the Vietnamese population. His proverb about "using southern remedies to heal the people of the south" is preceded by "Disciples of the ancient teachers must venered their doctrine." This first verse clearly demonstrates his attachment to the doctrine of traditional Chinese medicine (TCM). He respected the TCM and did not deviate from it.

Hải Thượng Lãn Ông 海上懒翁 alias Lê HữuTrác 黎有晫 (1724–1791)

He was born in 1720 in Hải Duong（海阳）, his father was a high-ranking dignitary in the court of King Lê Du Tông (1705–1729). In 1740, when his father died, he left the capital, studied the art of the war, and enrolled in the army. Very disappointed by the violence of the army, he left it in 1746 and settled at Huong Son, a mountainous region. Specializing in medicine and he named himself "*Hải Thượng Lãn ông*（海上懒翁）," which means the lazy old man. In 1756, he came back to Hanoi after 10 years of in-depth study of the Chinese canonical texts and the writing of Tuê Tĩnh. He began to practice medicine and at the same time he finished his book in Chinese writing entitled, *Thượng kinh ký sự*, which he completed in 1785. The book was published in 1791, just after his death. It was given a new title: *Hải Thượng y tông tâm lĩnh* [Figure 6].

Hải Thương Lan Ông used Chinese canonical texts to compose his work. His sources were essentially: *Huangti Neijing suwen* （《黄帝内经・素问》）, Nanjing 81 difficulties （《八十一难经》）and Bencao gangmu（《本草纲目》）. However, as Tuê Tĩnh, Lan Ong adapted his medicine to the Vietnamese population. He used many Vietnamese plants for treatment (Volume IV, Chapter 9: South pharmacopoeia). He had his own specificity about traditional medicine. He advocated intuitive medicine (Volume XVIII: instinctive Knowledge and Memento of marvelous recipes).[2] Thus, he got away from Chinese heritage.

Traditional Vietnamese Medicine between Western Colonization and Tradition

In 1858, the French colonization began with Emperor Gia Long. He had as private doctor, a Frenchman, who treated him for 20 years. Thus, started the influence of Western medicine.

The year 1945 is very important in the history of Viet Nam and at the same time for the evolution of the TVM. The war of Indochina took place between 1945 and 1954: Viet Nam fought against France to put an end to the colonization, which allowed the advent of the Republic and the end of dynasties. In fact, the Nguyen dynasty ended in August 1945. King Bao Dai was exiled to France. The end of dynasties means also the end of official Chinese writing. The Chinese traditional medicine was long reserved for people who practiced the Chinese language as their mother tongue; the transmission was direct, in a common language, however inaccessible to the Vulgus pecum. Because Chinese writing is no longer the official language, Vietnamese writing with the Latin alphabet becomes national writing (*Quoc Ngu)*, Chinese canonical texts are gradually translated into Vietnamese language, they are no longer reserved for the elite, and they are now accessible to non-Sinologists.

Nguyễn Tử Siêu (Hà Nội 1887–1965), a Mandarin doctor, he was the first translator in Vietnamese writing of canonical texts [Figure 7].

In 1954, he published in Vietnamese writing the most important traditional medical text: *Huangti Neijing suwen*《黄帝内经•素问》*Hoàng-đế Nội-kinh Tố-vấn,* Edition Hông-Khê, with the comment of Zhang Yin-an and Ma Huan-tai.[3] From this date, there are many publications of TCM such as *Zhenjiu* Dacheng《针灸大成》1963 Ed. Thanh Hoa HCM ville, Shanghan lun《伤寒论》 Ed. Dong Nai 1996, and Huangti Neijing lingshu《黄帝内经•灵枢》 Ed. Dong Nai 1989.

Integration of Traditional Medicine in the Health-Care System Today

In the Eastern Asia, the status of TCM is quite varied, whereas in more westernized countries, the integration of TCM into the health system is very limited. In Viet Nam as in modern China, traditional medicine is officially “”recognized by the state.

Because it is softer, less aggressive, and the TMC integrates perfectly with the health system in Viet Nam, it gradually earns its titles of nobility. Despite the western influence due to French colonization, TVM is experiencing an exceptional boom.[4] TVM becomes a state institution in big cities like Hanoi, Ho-Chi-Minh city, or Huê [Figure 8].

Thus, many great Vietnamese medical practitioners stand out to form a high-level medical corpus.

Three real pioneers in TVM became national heroes:

1. In the South, Dr. Nguyen van Huong. His name is important to remember for the role he played in Vietnamese traditional medicine. First because he was one of the main founders of the Society of Traditional Medicine. In 1930, he was appointed Head of the Microbiology Laboratory at the Pasteur Institute in Saigon. From 1954, he participated in the building of the sanitary system. From 1968–1970, he started teaching TCM at the Ho-Chi-Minh-Ville Institute
2. In the Center, Dr. Le Quy Nguu who is from Huê. A famous medical doctor both sinologist and acupuncturist, he

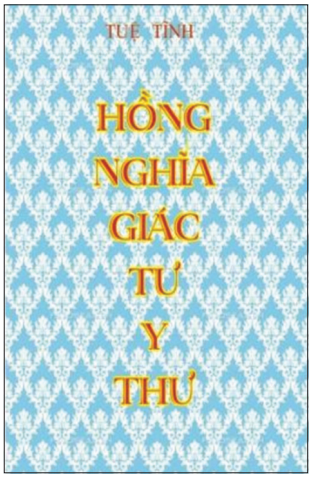

Figure 5: Hồng Nghĩa Giác Tư Y Thư（《红義官医书面》）, Written on the medicine of the Mandarin of Hong Nghia

Figure 6: Hải Thượng y tông tâm lĩnh

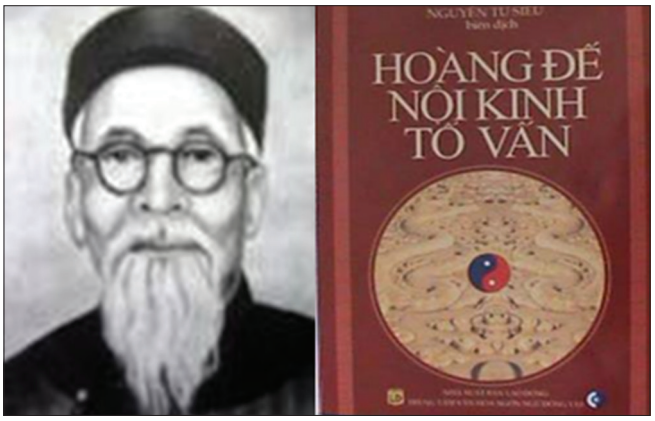

Figure 7: Dr. Nguyễn Tử Siêu 1887–1965. Huangti Neijing suwen 黄帝内經素問 Hoàng-đế Nội-kinh Tố-vấn, Edition Hông-Khê,1954

Figure 8: National Hospital of Traditional Medicine in Hanoi, Statue of Hải Thượng Lãn Ông （海上懶翁）

translated numerous works and he was proclaimed as Knight Hero of Viet Nam thanks to his numerous humanitarian actions such as the founding of free care centers

3. In the North, Nguyen Tai Thu, he is an internationally renowned acupuncturist doctor that I had the honor of meeting at a traditional medicine Congress in Lille (France). He opened a center of treatment by acupuncture and traditional medicine for children suffering from neurological diseases.

Conclusion

Viet Nam has played a very important role in the import of TCM into Europe and in particular into France. The Latinization of the Vietnamese language has greatly facilitated the translation of Chinese texts in French and other European languages. The French colonization of Viet Nam for nearly a century explains this early opening of France to TCM. Finally, French-speaking Vietnamese doctors also took part in the extension of this medicine in France. Among these French-speaking Vietnamese doctors, I would like to mention Dr. Nguyen Van Nghi (1909–1999) who was my mentor. I pay him tribute for his impressive work in translating Chinese canonical texts from Vietnamese into French as he had cleared a forest to make it a flower garden for future generations of acupuncturists.

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Conflicts of interest

There are no conflicts of interest.

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Review Article

Wang Jimin （王吉民） and *History of Chinese Medicine* （《中国医史》）

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Abstract

Wang Jimin was not only a distinguished medical historian in modern China and an academician of the International Academy of the History of Science but also an originator of the first Museum of Chinese Medical History and of the Chinese Medical History Society. This study briefly introduces Wang's family academic history, his groundbreaking achievements in studies on medical history and the first monograph of *History of Chinese Medicine* (English edition) in China. It also reviews the foundation of the first Museum of Chinese Medical History.

Keywords: *Zhong Guo Yi Xue Shi* (《中国医史》*History of Chinese Medicine*）, Museum of Chinese Medical History （中国医史博物馆）, Wang Jimin （王吉民）

Wang Jimin (王吉民, 1889–1972) [Figure 1], also named as Jiaxiang (嘉祥) with a literary name of Yunxin（芸心）, was born in Humen（虎门） of Dongguan（东莞） in Guangdong（广东）. Since his father worked for a Hong Kong Christian church, Wang went to Hong Kong at 7 and studied in St. Paul's College（香港圣保罗书院） and Queen's College（皇仁书院）. He started to learn medicine in Hong Kong College of Western Medicine （香港西医大学堂，现香港大学医学院 the Li Ka Shing Faculty of Medicine of the University of Hong Kong now) at 16. After he graduated at 21, he took the posts such as ship doctor for a foreign shipping company, Dean of China Anti-epidemic Hospital（中国防疫医院院长）, General Chief Physician of Shanghai-Hangzhou-Ningbo Railway Administration Bureau （沪杭甬铁路管理局主任总医师）, doctor of Zhejiang Postal Administration Bureau（浙江省邮政管理局局医）, and deputychairman of Chinese Medical Association（中华医学会副会长） successively. Wang Jimin was not only a prestigious medical historian and an expert in quarantine in modern and contemporary China and an academician of the International Academy of the History of Science （国际科学史研究院院士） but also a founder of the first Museum of Chinese Medical History （中国医史博物馆） and of theChinese Medical History Society （中华医史学会）, the deputy chairman of the first session of the Chinese Medical History Society （中国医史学会） and Chairman of the following three sessions. He co-authored the first monograph of History of Chinese Medicine （《中国医史》） (English edition) in China andinitiated the Chinese Medical Journal (《中华医学杂志》).

Figure 1: Wang Jimin(王吉民)--An Historian of Medicine

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Born from an Academic Family with Numerous Celebrities

Wang Jimin was born in a Christian family. With a quiet disposition and a modest personality, he was fond of music and created his own songs. He once composed several pieces of songs for *Hymns of Universal Praise*（《普天颂赞》）. He learned both oriental and western knowledge, read extensively, and understood thoroughly many languages. Moreover, all this was closely related with his family influence.

Wang's grandfather, Wang Yuanshen （王元深）, studied from German missionary of Karl Friedlich Gutzlaff（郭士立）in Hong Kong in 1847 and preached Christian in Humen of Guangdong with other Chinese priests such as Li Qingbiao（李清标） and Ye Naqing（叶清纳） in November of the same year. Yuanshen's published works included Miao Zhu Wen Da(《庙祝问答》Temple Attendants' Questions and Answers), Kan Yu Wen Da(《堪舆问答》Questions and Answers on Geomantic Omen), Xing Mi Lun(《醒迷论》On Awakening and Confusion), Sheng Dao Dong Lai Kao(《圣道东来考》Research on Orientation of Christian), Li Jian Ming Zheng(《历艰明证》Clear Evidence Through Hardships), etc., Wang Jimin's father, Wang Qianru（王谦如）, with adult name of Bingkun（炳堃）, was converted to Christian and an appointed priest, who preached in the area of Dongguan and Bao'an（宝安）, with works such as Zhai Mu Quan Zhen(《宅墓诠真》 Essentials on Houses and Tombs, Zhen Li Ke Xuan(《真理课选》Selection of Christian Matins), and San Jiao Du Zhen(《三教度针》Release Strategies of Three Religions), Ye Ru Yue Dan(《耶儒月旦》Comments on Jesus and Confucius), Dao Yuan Ji（《道原集》Collection on Origins of Tao) and Ya Ge Jiang Yi(《雅各讲义》Textbook of James）, etc., Wang's family brothers were all talented with sorts of achievements. Jimin's brother of Wang Zemin（王泽民） began to learn medicine in Hong Kong College of Western Medicine (the Li Ka Shing Faculty of Medicine of the University of Hong Kong now) in 1887, who was a schoolfellow of Sun Yat-sen（孙中山）'s. Sun was one of the first graduates of the college and Zemin graduated 2 years later. Zemin was also one of the founders of Guangdong Red Cross Society（广东红十字会）, and once translated the work of Hong Shi Zi Hui Jiu Shang Yao Fa(《红十字会救伤要法》First-aid Essentials of Red Cross) written by British Doc. James Cantine（简地利）. Wang Jimin's cousin of Wang Pangyi（王宠益） was the first Chinese professor of Medical College of UHK（香港大学医学院）, cousin of Pangqing（王宠庆） was a professor of University of London（英国伦敦大学）, and cousin of Panghui（王宠惠）, a famous Chinese jurist, diplomatist, and politician, once was appointed as the first Foreign Minister of the interim government of Republic of China（民国临时政府首任外交总长）.[1]

In 1918, Wang Jimin was married to Su Meiying（苏梅英） from Yin County of Zhejiang（浙江鄞县）, who was an industrious and frugal wife and helped him in raising their five children, including the first son of Zihong（王子鸿）, first daughter of Xianglan（王湘兰）, second daughter of Mulan（王慕兰）, third daughter of Zhilan（王芝兰）, and fourth daughter of Jinglan（王静兰）.

Dedicated to the Research on Medical History with Substantial Publications

Mr. Wang Jimin dedicated himself to research on medical history for over 50 years with striking contributions achieved, including over 200 works written in both Chinese and English, with the contents involving medical administration, medical affairs, biographies, elucidations on Chinese and western medicine, medical exchanges and mutual introduction between western and Chinese medicines, medical reports, memorial articles, work and meeting reports, etc. For instance, he wrote monographs such as *as Zhong Guo Li Dai Yi Xue Zhi Fa Ming(*《中国历代医学之发明》*Elucidations on Medicine Through Chinese History) and History of Chinese Medicine and worked as chief editor for journals such as Zhong Hua Yi Xue Za Zhi Yi Shi Zhuan Hao*（《中华医学杂志医　史专号》*Special Issue of Medical History of Chinese Medical Journal*）*, Zhong Hua Yi Xue Za Zhi San Shi Zhou Nian Ji Nian Hao*（《中华医学杂志三十周年纪念号》*30th Anniversary Memorable Issue of Chinese Medical Journal*）, Zhong Hua Yi Shi Xue Hui Wu Zhou Nian Ji Nian Te Kan*(*《中华医史学会五周年纪念特刊》*5th Anniversary Special Issue of Chinese Medical History Society*）, Zhong Guo Yi Xue Wai Wen Zhu Shu Shu Mu（《中国医学外文著述书目》Bibliography of Foreign Writings on Chinese Medicine） and Zhong Guo Yi Shi Wai Wen Wen Xian Suo Yin（《中国医史外文文献索引》Index of Foreign Literature on Chinese Medical History）, etc. The most renowned contribution he'd made was the book of *History of Chinese Medicine* co-authored by Wu Liande（伍连德）and him, collected by numerous university libraries in European and American countries.

In around 1916, Wu Liande read through the *Yi Xue Shi*（《医学史》*History of Medicine*） written by American medical historian F. H. Garrison（嘉立森）, only to find words involving Chinese medicine had occupied less than one page of this over-700-page monograph full of mistakes.[2] He corresponded with Garrison to ask the reason and received the reply that the author had not seen any relevant literature in western language and the half-page documentation was reference from other foreign writer. Wu showed the letter to his friend Wang Jimin, and they were both deeply touched. To their disappointment with Garrison's wrong argument on and superficial understanding of Chinese medicine, Wu and Wang *et al.* for 10 years and completed the *History of Chinese Medicine* (English edition) in 1932 to introduce Chinese medical achievements in history to the world. The prestigious expert on history of science and technology, Joseph Needham（李约瑟）, once wrote an article in 1976 for the *Mei Guo Zhong Yi Za Zhi*(《美国中医杂志》*American Journal of Chinese Medicine*) to highly praise the book as "nearly the only one known to western medical historians."

Wang Jimin was devoted to research on medical history for decades and attached great importance to the collection of medical literature and medical books both at home and abroad. In 1937, he donated over 5000 books and journals on Chinese and western medicine he collected to the Chinese Medical Association(中华医学会). Since 1959, he had presented over 1000 pieces of literature on medical history to Shanghai College of Chinese Medicine（上海中医学院）.[3] In 1969, he donated to the Museum of Medical History（医史博物馆）another 700 + pieces of medical literature, which all became precious data of reference for relevant further researches.

Establishment of the Museum to Spread Quintessence of Chinese Medicine

In the spring of 1937, Wang Jimin was invited by the Chinese Medical Association to Shanghai to assist in its operation. In April, the 4th National Membership Meeting of the Chinese Medical Association（中华医学会第四届全国会员代表大会） was held in Shanghai. Wang Jimin was in charge of the preparation of exhibition on medical history literature involving over 1000 items such as medicine bottles, medicine processing tools, acupuncture utensils, ancient books, and portraits of medical practitioners, which was covered by the media and positively praised by the public. During the meeting, Wang made a special speech named Appeal to the Establishment of Museum of Medical History（“吁请筹设医史博物馆”）. In May, his article of Opinion on the Establishment of Museum of Medical History （《筹设中国医史博物馆刍议》）was published in *Chinese Medical Journal*, stating three tenets including “safe storage to avoid loss of national treasures（“妥为保存，以免散失”，“国粹不致外流”）,” “for academic study on the evolution of medicine and treatment（“供学者研究，藉以考察医学之变迁，治疗之演进”）,” and “as teaching tools for medical education and popular propaganda of medical knowledge（“对学生为有效之教授方法，对民众可作宣传医药常识之利器”）,” which was in accordance with the world-recognized three traditional functions of museums – storage, study, and education. Due to Wang Jimin’s advocate and active promotion, in July of 1938, the first Museum of Medical History in China was set up in a small room of the library of Chinese Medical Association, located on No. 41 of Chibang Road of Shanghai with about 400 items of exhibition and Wang as the first curator. In 1956, the museum was relocated into Guohua Building on East Beijing Road with the Shanghai branch of Chinese Medical Association. In January of 1959, the museum became affiliated to and changed its location into Shanghai College of Chinese Medicine, still with Wang Jimin as the curator until early 1966.

Mr. Wang Jimin dedicated over half a century to his career and was indeed a pioneer of researches on Chinese medical history. His work of *History of Chinese Medicine* and the first museum on medical history initiated by him were historical milestones for the development of Chinese medicine, leaving a rich legacy to later generations.

Translator: Yingshuai Duan(段英帅)

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Conflicts of interest

There are no conflicts of interest.

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Original Article

The Silk Road (丝绸之路) and Sources of Chinese Medicine Expansion: Part III – Histories

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Abstract

Medicine and knowledge of medical practice have been exchanged along the Silk Road since antiquity. Medical texts provide the vast majority of information about the drugs, techniques, and ideas that passed from foreign lands into China and became part of Chinese medicine. In addition to the medical corpus, historical works provide the backdrop for how, when, and from where these ideas and medicines entered and influenced Chinese medical practice. Examining the historical texts and the information pertaining to medical exchange can allow us to better understand how foreign cultures and practices of medicine along the Silk Road entered and influenced Chinese Medicine.

Keywords: Chinese medicine, history, Silk Road（丝绸之路）, transfer of medicine

While medical texts provide the vast majority of information we gather for the study of the exchange of medicine, we also must draw information from more general sources to better understand the complexity of the Silk Road [Figure 1] on Chinese Medicine.

Historical writings are invaluable for providing the context for medical practices in China throughout its development. They provide the backdrop for how, where, and by whom medicines and techniques were used in antiquity. There are two primary types of historical texts in Chinese. The first category contains the annals and dynastic histories, and the second category contains other various historical texts such as topically arranged, institutional notebooks, and miscellaneous works. Both of these broad categories shed light on the foreign influence of ideas and products on medicine in China.

Standard Histories

The standard or dynastic histories provide a treasure trove of information about the interactions between Chinese and foreign cultures. These standard histories include chapters that deal directly with bordering lands that sometimes list products traded or given as tribute.

In the Bei shi(《北史》History of the Northern dynasties), compiled in the 7th century CE by Li Yanshou (李延寿，fl. 618–676), we find references to substances sent as tribute.[1]

In a chapter on on Cao country（漕国） that was Jaguda（治至漕国）, Ghazni（加兹尼）, in what is now Afghanistan, various products are listed including millet, wheat, and horses, but also includes aromatics that continue to be used in medicine such as *a wei* 阿魏 (asafetida) and *mo yao* 沒药(myrrh) (Note 1).[2,3] We find a nearly identical list in the corresponding chapter in the *Sui shu* (《隋书》*The Book of Sui*) compiled in 636 by Wei Zheng (魏征，580–643).[4]

In addition to descriptions about foreign nations and cultures, the extensive biographies can also provide information about how medical information was brought into China.

The Wei shu (《魏书》The Book of Wei), part of the San Guo Zhi (《三国志》Record of the Three Kingdoms) compiled by ChenShou (陈寿, 233–297 CE), contains a biography of noted physician Hua Tuo (华佗~d. 208 CE). In this biography, HuaTuo uses an herbal anesthetic formula mafeisan（麻沸散）. When it is given to patients, they "become intoxicated and pass out as if dead." From this, surgery could be performed and "as for the disease, if it is located in the intestines, he would cut out and wash them. Then, he would suture up the

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abdomen and apply a medicinal past."[5] This description of surgical technique and anesthesia may have been similar to those used in India, often attributed to Jīvaka, that made their way into China.[6] While Hua Tuo is a rare case in his use of surgery in China, this practice was much more widespread in India with texts such as the *Suśruta-saṃhitā*.[7]

While there is some information found in these biographies and regional studies that either directly or indirectly point to medical exchange along the Silk Road, the catalog of the holdings of the Imperial Library（经书殿） that some of the histories contain provides a look at the literature that existed during that time and can also give clues to foreign import of texts and information.

In the catalog of the Sui shu compiled compiled in 636 by Wei Zheng (580–643), there are clearly identifiable foreign medical texts of South Asian origin. Hinrichs and Barnes divide the South Asian medical works in the *Sui shu* into three types.[8] The first are those associated with Hinduism such as the *Poluomen zhuxian fang* (婆罗门诸仙药方*Medical Formulas of Brahman Immortals*) and *Poluomen yaofang*(婆罗门药方*Medical Formulas of the Brahman*). The second are texts that have Buddhist origins such as *Longshu pusa yaofang*(龙树菩萨药方*Medical Formulas of Bodhisattva Nagarjuna*), *Longshu pusa yangxing fang*(龙树菩萨养性方*Bodhisattva Nagarjuna's Formlas for Nurturing Nature*), *and Longshu pusa hexiang fa*(龙树菩萨和香法*Bodhisattva Nagarjuna's method for Combining Aromatics*) (Note 2).[9] The third are texts written by Buddhist monks that include both herbal and acupuncture works. Works attributed to the famous Indian physician Jīvaka are a major example of these types of works such as the *Qipo suoshu xianren ming lun fang (*耆婆所述仙人命论方*Formula Treatise of Immortality Described by Jīvaka)* [Figure 2].

These types of texts are also found in later histories. The Song Shi (《宋史》History of the Song) by Toghto (1314–1355 CE) in 1344 lists the *Poluomen seng fu xian mao fang (*婆罗门僧服仙茅方*Monks of the Brahman's taking of Golden Eye-grass Formula)* and the *Longshu yan lun longshu (*《龙树眼论》*Nagarjuna's Treatise on the Eye)* that are both from or influenced by South Asian sources. In addition, several Chinese medicine texts associated with Jīvaka are listed in the catalog. These includes the formulary *Qipo yao yong fang* (耆婆要用方*Jīvaka's Essential Formulae*), but also lists texts on medical theory such as *Qipo wu zang lun* (《耆婆五脏论》*Jīvaka's Treatise on the Five Viscera*), *Qipo mai jing* (《耆婆脉经》*Jīvaka's Canon of the Vessels*), and *Qipo liushisi wen* (《耆婆六十四问》*Jīvaka's Sixty-Four Questions*).

How exactly these texts have influenced traditional Chinese medicine is also uncertain since much of the information has been lost, and without non-Chinese source texts to directly compare, we can only speculate as to the nature and content of the works. While these standard history examples shed light on the types of texts that were exchanged, they comprise only a small glimpse of the potential interactions and information transfer. In addition to the standard histories, a broader body of literature must be explored to better understand the scope of information that entered China from abroad.

Additional Histories

Aside from the standard histories, there are additional historical references that have shed insight into medical exchange throughout antiquity. These include regional records, topical or institutional histories, notebooks, and others. The *Nanzhou ji* (《南州记》The Records of Nanzhou) by Xu Biao（徐表）is an early regional text from the 4th century. This text gives the first reference to myrrh, which is from the Arabic peninsula, as it is imported into China. While the original text has been lost, references to it are found in the Bencao gangmu (《本草纲目》Compendium of Materia medica) of Li Shizhen（李时珍） completed in 1596[10] [Figure 3].

The passage mentioned above about imported medicines from Cao country, or Jaguda, is also found in the *Tong dian* (《通典》Comprehensive Institutions) written by Du You (杜佑，735–812). The text is the same as that found in the *Bei shi* and refers to products being brought into China. The *Tong dian* later lists a number of foreign texts including the *Poluomen yaofang, Poluomen zhuxian fang,* and *Longshu pusa yao fang*

Figure 1: Transport along the Silk Road

Figure 2: Helan Shan-Buddhism along the Silk Road

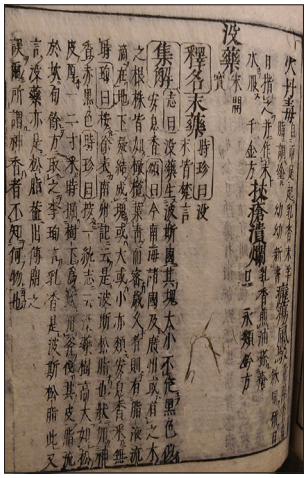

Figure 3: Entry on myrrh in a 17th century Japanese edition of the Bencao gangmu (Compendium of materia medica)

that are found listed in the *Sui shu* catalog. It also lists other medical works from the Western regions or *xiyu* （西域）. These texts can also be found in the later work, *Tong zhi* (《通志》*Universal Treatise*) compiled in 1149 by Zheng Qiao (郑樵，1104–1162).

The *Taiping yulan* (《太平御览》*Readings of the Taiping Era*), compiled between 977 and 983 CE by Li Fang 李昉 (925–996 CE) cites a number of passages concerning medicine (藥 *yao*) tracing back to ancient texts such as the *Yi jing* （易经） and the *Shu jing*（书经）. The text also lists later examples of the use of medicine including citations from the *Wei shu* 魏書 by Wei Shou (魏收,506–572 CE). The citation from the *Wei shu*, though it does not appear in the received text of the *Wei shu*, mentions the state of Oḍḍiyāna（乌长国） in India in a passage about medicine. The passage says that Hindus use a medicine that will make a person appear crazy before they are cured. While it does not clarify the specific medicine, it does serve as an example of knowledge of Indian medicine by the Chinese.

It is only by looking at a variety of sources that we are able to piece together the history of medicinal exchange along the Silk Road. Using the standard histories alongside other historical resources creates a clearer picture to understand the import of foreign drugs and ideas into Chinese medical practice.

The influence of these works and the information within them is uncertain and will need to be studied more by looking at both the changes in Chinese medicine over time and the state of foreign medical practices during the same periods. Only by in-depth study of the systems of medicines exchanged along the Silk Road can we truly know how they have influenced one another and how Chinese medicine developed into what it is today.

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Conflicts of interest

There are no conflicts of interest.

Note

1. Myrrh is not mentioned in the *Sui shu* (《隋书》 *The Book of Sui*) written in 636 by Wei Zheng (魏征，580-643) et al., as the first character is left out, leaving only yao （药）. This could have implied that simply herbs were transported, but the Bei shi and the *Tong dian* (《通典》*Comprehensive Institutions*) by Du You (杜佑，735-812), both have moyao 沒藥 (myrrh), and commentators on the *Sui shu* generally agree that the character was accidentally omitted.

2. Salguero states that using Jīvaka is likely an example of symbolic appeal of ancient authors to legitimize the use of Indian knowledge into mainstream Chinese medical literature, but also stresses that these may not represent the incorporation of any particular Indian source doctrine.

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Original Article

Historical Background of *Ben Cao Gang Mu* (《本草纲目》*Compendium of Materia Medica*)

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Abstract

The compilation of *Compendium of Materia Medica* by Li Shizhen is the product of both his great dream of writing and years of diligent work and it was also all round related to the historical times when he lived. At that time, the appreciation from the Emperor, competitive publication of medical works by the state kings and the rapid developments in medicine in the Ming dynasty all contributed to the establishment of a solid foundation for the success of *Compendium of Materia Medica*. This paper explored the contributing factors of the great work from a perspective of the historical environment.

Keywords: *Ben Cao Gang Mu* (《本草纲目》*Compendium of Materia Medica*), herbal works, historical stages

The birth of a work is always bound with its time. Although the writing of Ben Cao Gang Mu（《本草纲目》Compendium *of Materia Medica*）was attributed to his great ideal and hard work, it was also closely related to the times when he lived. Therefore, its publication was the product of the corresponding society in the Ming dynasty, and factors such as government policies on medicine, special appreciation by state palaces, and the developments in medical works had all contributed directly or indirectly to the formation of this prominent herbal masterpiece, influencing its styles and features. This paper studied on Li Shizhen's life to explore the historical stage when he wrote the great work of *Compendium of Materia Medica* [Figure 1].

Part One

Rescript to print medical works by the Emperor of Jiajing

Appreciation by the Emperor favors the development of Chinese medicine

In the 21st of Jiajing (嘉靖1542 A.D.), Li Shizhen（李时珍）was in his twenties and wondered what to pursue as a career: participating the imperial examinations or studying Chinese medicine. He was dedicated to the Confucian study and prepared for the imperial examinations for years. Yet, failure in the provincial examinations for three times frustrated him deeply. At the same year, under the rescript of the Emperor Jiajing, *Ying Tong Bai Wen* (《婴童百问》*Hundred Questions about Infants and Children*) was published.

Ying Tong Bai Wen was regarded as a book written by Lu Bosi. Yet in Jiajing years, its author was unknown. In the 18th of Jiajing (1539 A.D.), Xu Jin（许进） submitted the book to and was praised by the Emperor. Later, it was ordered to be printed by the Ministry of Rites（礼部）, with a preface written by the first Cabinet Minister（首辅大臣） of Yan Song（严嵩）. This implied a medical work could reach readers at home and abroad through government publicity. It thus was quite tempting to a scholar who intended to keep his ideas immortal. Especially to those like Li Shizhen, who had failed in the examinations, this also meant a new choice of life.

It was not explicitly recorded in history when Li was dedicated to medicine. However according to the speculations of *Li Shi Zhen Zhuan*(《李时珍传》*Biography of Li Shizhen*) by Gu Jingxing（顾景星）, Li was 14 years old when he passed the county-level examination and elected as Xiucai, so he must be in his twenties after he failed for three times in the provincial

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本草綱目序
紀稱皇龍光知古劒覘寶氣辯明珠
故洋實商羊非天明莫洞厥後傳物
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Figure 1: *Compendium of Materia Medica*

examinations which was held every 3 years. There was also no document to confirm the publishment of *Ying Tong Bai Wen* was directly related to Li's determination to practice medicine. Since even an authorless work like this could win special attention, it was easy to imagine how inspiring it was to average authors of medical books like Li Shizhen.

Certainly, *Ying Tong Bai Wen* was only one of the various medical works printed under the Emperor's order. Influential ones include include *Yi Fang Xuan Yao* (《医方选要》 *Selected Essentials of Medical Prescriptions*), *Wai Ke Ji Yan Fang* (《外科集验方》 *Collection of Effective Surgical Prescriptions*), and *Wei Sheng Yi Jian Fang* (《卫生易简方》 *Simple Hygiene Prescriptions*), etc. Li Shizhen once praised in his late memorial to submit *Compendium of Materia Medica*, "His Majesty of Emperor Shizong once ordered to print *Yi Fang Xuan Yao* and *Wei Sheng Yi Jian*, whose benevolent government and reputation had gone beyond his reign".

Encouraged by the publication of medical books supported by the Emperor, Li Shizhen, who took deep interest in writing and was determined to record his thoughts, found a new route to revive his ideas in later generations. Then, he endured decades of hardships and succeeded in writing the work of *Compendium of Materia Medica*. Medical books like *Ying Tong Bai Wen* were also listed in the *Cited Catalogue of Ancient and Present Medical Scientists*.

In the 6th of Wanli (万历六年1578 A.D.), the compilation of *Compendium of Materia Medica* was completed. Li Shizhen intended to submit his work to the Emperor, prepared and wrote a memorial, but it was not fulfilled even on his death, so he demanded his son submit it for him. Li's late memorial began with his life profile and the reasons for submission, which involved the importance of *Materia Medica*, its numerous mistakes, and his decades of effort in emendations. In the latter part, it also elaborated the development of herbal medicine in history and problems existing, the further work he had done and using guide of his work, and recalled the importance Emperors of Taizu and Shizong had attached to medicine. Li Shizhen not only emphasized stating facts and reasoning in his late memorial but also mentioned several times the royal support and his own painstaking devotions, reflecting his eagerness to win his work acknowledge by the royal court.

In addition to writing the submission memorial, Li Shizhen made other preparations. In the 8th of Wanli (1580 A.D.), he invited Wang Shizhen（王世贞）, the leader of the literary field of that time and one of the Late Seven Sages（后七子）, to write preface for his work to improve its publicity. Unfortunately, Li died before submitting himself, and what's more regrettable was that the submission by his son Li Jianyuan（李建元） failed to realize his expectations as well.

Part Two

Fan (State) Palaces Advocating Medicine

Promotion of Medical Book Printed by State Palaces

Li Shizhen once presided over the Good Doctor Department（良医所） for the King Chu（楚王）,[1] which was an institution for medicine administration set up by state kings after the 4th of Hongwu (明洪武四年，1371 A.D.), involving Good Doctor Official (良医正，Eighth Grade) and Good Doctor Vice-Official (良医副，Sub-Eighth Grade) titles. In the 44th of Jiajing (1565 A.D.), the position of Good Doctor Vice-Official was abolished. Although the Eighth Grade official was not a high rank position, Li was delighted to take it, and the reason behind this may be attributed to a medical phenomenon, the emphasis by state kings on medicine and publishing medical books.

In the Ming dynasty（明朝）, due to reasons of political diversion and healthcare promotion, state kings around the country devoted enormous efforts to the compilation (by oneself or inviting others) and publication of many medical books. King Zhou of Zhu Su（周定王朱橚） and King Ning of Zhu Quan（宁献王朱权） had contributed more to the compilation of medical works, such as Jiu Huang Ben Cao (《救荒本草》Herbs for Relief of Famines), Pu Ji Fang (《普济方》Prescriptions for Universal Relief), and Xiu Zhen Fang (《袖珍方》Pocket-size Prescriptions) by King Zhou, and Yan Shou Shen Fang (《延寿神方》 Life-extending Miraculous Recipes), Huo Ren Xin Fa (《活人心法》Effective Methods on Preserving Life), Geng Xin Yu Ce (《庚辛玉册》Geng Xin Jade Book), and Qian Kun Sheng Yi (《乾坤生意》Heaven and Earthly Benevolence of Life) by King Ning. In Sorting literature on herbal medicine, Li Shizhen had specially listed Zhu Su's [Figure 2] *Jiu Huang Ben Cao*, and Zhu Quan's *Geng Xin Yu Ce*.

When Li Shizhen served as sacrifice official and presided over Good Doctor Department in Chu Palace was lost of track in available documents. By the deduction of common sense, competent staff for these posts should have enough experience and/or abundant clinical experience. Li began to learn medicine in his twenties and it was probable he should be over thirty or forty when he took these positions. During that time, medical works such as *Yi Fang Xuan Yao* had been reprinted by the

Figure 2: Portrait of Zhusu

Ministry of Rites, and Li's idea of compiling *Compendium of Materia Medica* could be formed as well, so he went to the king's palace to seek for support. Unfortunately, King Chu was not interested in compiling medical books and appreciated Li Shizhen only because of the prescription of Fu Zi He Qi Tang (附子和气汤*Radix Aconiti Qi-harmonizing Decoction*) he submitted. Li's main duty was to offer sacrifice and conduct Yuefu. There is also no record on the compilation and printing books by King Chu in present data. It was then meaningless to maintain his post, so Li Shizhen left Chu Palace and dedicated himself to the work of *Compendium of Materia Medica* until his success. Although this work experience did not help a lot in his compilation, his enthusiasm was inspired by the state kings' attaching importance to medicine in the early and middle Ming dynasty, and he also benefited greatly from the medical books compiled and printed by state kings all over the empire.

Part Three

Contribution from medical literatures

Compilation of *Materia Medica* through extensive reading and intensive citation

Any work exists and lies in the chain of the historical development of its field, absorbing nutrition from related works of its time; so was Li Shizhen's *Compendium of Materia Medica* with other medical works, especially those in the Ming dynasty.

His work was directly related with herbal medical literature.

There appeared many works of herbal medicine in the Ming dynasty. Li Shizhen sorted in the *Numerical Examples of Herbal Literature* 42 kinds of works, which include 9 Ming books, such as Ben Cao Fa Hui (《本草发挥》Elaborations on Herbal Medicine), Jiu Huang Ben Cao, Geng Xin Yu Ce, Ben Cao Ji Yao (《本草集要》Collection of Essentials on Herbal Medicine), Shi Wu Ben Cao (《食物本草》Herbs for Food), Shi Jian Ben Cao (《食鉴本草》Identification of Edible Herbs), Ben Cao Hui Bian (《本草会编》Collection of Herbs), and Ben Cao Meng Quan (《本草蒙筌》Herbal Medicine for Beginners), in addition to his own work.

Li's evaluation of these eight works varied greatly. Some were praised moderately, such as "elaborate and reasonably cited" *Jiu Huang Ben Cao* and *Ben Cao Meng Quan* "with meritorious elaboration." Li's work also quoted several items from them. While, the other six works were bitterly criticized by Li, maybe out of reasons to establish the necessity to compile *Compendium of Materia Medica* or summarize failure lessons from them. However, what is the real relationship between those "not benefiting", "with no elaborations," and "without real witness" works with Li's own work? We will take the *Ben Cao Hui Bian* by medical scholar of Wang Ji from Qimen in the Middle Jiajing period as an example.

Li Shizhen regarded there were only several items meritorious in the *Ben Cao Hui Bian*, and accordingly, this work should not be of much referable value to him. But when examining Li's work, we can find at least dozens of quotations from this book. Moreover, three medicines such as Shuixian (水仙*Daffodil*), Chongbaila (虫白蜡*Cera chinensis*) and Mabinlang (马槟榔*Capparis masaikai*) are put just based on *Ben Cao Hui Bian*'s record.

One of the great contributions *Compendium of Materia Medica* had made to herbal medicine is the compilation style of items following outlines, with 1892 kinds of medicines introduced in Volume 5 to Volume 52, classified into 16 radicals (outlines) and 60 categories (items). This style has largely promoted the development of herbal medicine.

Prior to *Compendium of Materia Medica*, the prevalent method in herbal literature was Three Grade Classification, initiated by *Shennong's Classic of Herbal Medicine*, which classified 120 kinds of medicines into upper, middle, and lower grades according to their efficacy and purpose of the application. This method once changed the situation of nonsystemic knowledge of ancient medicines and thus created a new era for *Materia Medica*. Yet, with the increase of medicine categories, Tao Hongjing began to use the natural property classification of medicines, which was followed by herbal literature in Tang to Song dynasties. What is notable is that these works had adopted a mixture use of both Three Grade and natural property classifications. After all, it is hard to overthrow the sacred status of the *Shen Nong Ben Cao Jing* (《神农本草经》*Shennong's Classic of Herbal Medicine*) entirely. This had naturally lead to chaos use of compiling styles, medicines with wrong species, and even discrepancy of names with items. Li Shizhen pointed that although the name of three grades was employed, there were different kinds of actual mistakes such as "one medicine recorded as several items".

On that account, Li Shizhen adopted a new classification system. However, the prototype of this innovation was from the *Ben Cao Hui Bian* criticized by Li, which was a good example of how *Ben Cao Hui Bian* enlightened *Compendium of Materia Medica* to form its compiling style.

That is just a glimpse of the whole picture and leads us to the conclusion that the compilation of *Compendium of Materia Medica* was dependent on other herbal literature, especially those in the Ming dynasty.

In the *Compendium of Materia Medica*, medical literature was categorized as herbal and medical books. Although it pertained to the herbal category, *Compendium of Materia Medica* also cited remarkable records from works by medical physicians in the Ming dynasty.

The Yin Ju Gu Jin Yi Jia Shu Mu(《引据古今医家书目》 Cited Catalogue of Ancient and Present Medical Scientists) included two categories of books: cited by previous editions V.S. cited by Shizhen. The category of "cited by Shizhen" involved 276 books from *Ling Shu Jing* (《灵枢经》*Classic of Miraculous Pivot*) to Yan Hou Kou Chi-Fang (《咽喉口齿方》Prescriptions for *Throat, Mouth and Teeth Diseases*). Although the number was questionable since some books were cited repeatedly or some were cited by previous editions, the number of medical books actually cited by Shizhen must have been over 200 kinds, many of which were Ming books, including nearly 80 kinds by preliminary estimate.

It can be seen that medical works in the Ming dynasty had provided Li Shizhen with adequate beneficial resources, and the product of *Compendium of Materia Medica* owed much to the achievements in medicine by masters and professionals in both previous and Ming dynasties.

Of course, we shall admit the complexity and variety in reasons why Li Shizhen was encouraged to write the work of *Compendium of Materia Medica*. It is hard to restore what really happened in history. Through exploring the historical influence of the medical context of the Ming dynasty on Li's compilation of *Compendium of Materia Medica*, we managed to draw a global outline of the development of Chinese medicine in the Ming dynasty (especially early and middle periods), hoping have demonstrated a new perspective of study on discovering the reasons for the formation of *Compendium of Materia Medica*.

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Original Article

Historical Evolution of Traditional Medicine in Japan

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Abstract

Traditional Japanese Medicine originated from traditional Chinese medicine and was first introduced to Japan directly from the mainland of China or the Korean Peninsula. After its dissemination, integration, adaption, and development in Japan for generations, it had evolved into Kampo medicine with Japanese characteristics and taken a leading role in Japanese medical practice. In history, there appeared successively schools such as Followers of Later Developments in Medicine, Followers of Classic Methods, Integrated School, and School of Textual Research. After Meiji Restoration, Kampo medicine experienced a tremendous impact by western medicine. However after World War II, with unremitting endeavors from learned scholars, traditional Japanese medicine was revived again.

Keywords: Integrated school, Kampo medicine (汉方医学), school of classic methods, school of later developments, school of textual research

Introduction

Japan lies adjacent to China geographically, and thus shares common cultural features with China. After its introduction to Japan, traditional Chinese medicine integrated itself with indigenous Japanese customs and lifestyles, and gradually evolved into Kampo medicine（汉方医学）of Japanese characteristics, which yet reflects its Chinese origin. Throughout its development history, traditional Japanese medicine has experienced the following six periods.

Preliminary Stage (15th Century)

Xu Fu（徐福）,[1,2] a learned Chinese scholar, who was expert at medicine, astronomy, and sailing, was sent by the First Emperor of Qin（秦始皇）in 210 B. C. to the east to search for the elixir of immortality, leading groups of pure youth and maiden, technicians, warriors, and doctors. They eventually arrived in Japan and still found nothing. They would be killed because of the failure if they returned to China, they decided to stay there instead, and disseminated Chinese medicine, agriculture, spinning and forging techniques around Japan, which promoted its social development. Moreover, he was thus respected as God of medicine and agriculture. Nowadays, there exist many temples, tombs, and parks named after Xv Fu in Japan [Figures 1 and 2].

In the early 5th century, traditional Chinese medicine and mainland Chinese culture[2,3] were introduced to Japan through the Korean Peninsula. In 414 A.D., Korean physician of De Lai (德来) went to Japan to teach TCM. In 562 A.D., Zhao Yuan (照渊), (King of Wu)'s grandson-Zhi Cong (智聪) went to Japan through the Korean Peninsula and brought with him medicine processing tools and TCM books, to teach processing of medical herbs. Due to his prominent contributions in teaching, he was awarded the honor of "Mater of Pharmacy (和药使主)"by the Japanese Emperor at that time.

In the 7th century, the Japanese government dispatched many envoys to the Sui and Tang China to learn humanities, culture, medicine, agriculture and religion. In 608, Ono no Imoko（小野妹子）arrived in Tang China and returned to Japan with Si Hai LeiJu Fang (《四海类聚方》*Assembly of Formulas of Four Seas*). The pharmacist of Namba Huiri (难波惠日) went to China in 623, 630, and 654, learned a large amount of TCM books and put them into practice back in Japan, thus honored as the "Great Benevolent Pharmacist（大仁药师）" by the Japanese Emperor at that time. In 701, based on the Yong Hui Laws（《永徽律》）of Tang（唐） China, Japan issued its first law of *Taihō Code* (《大宝律令》). The articles concerning medicalsystem and education were basically the same with the Tang file. For instance, technical positions such as physician, medical expert, doctor,

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acupuncturist, acupuncture expert, masseur, and massage expert were set according to different specialties. Doctors and acupuncture students should be taught separately, with the former learning subjects of *Jia Yi Jing* (《甲乙经》*The A-B Classic*), *Mai Jing* (《脉经》*Classic of Pulse*), *Xiao Pin Fang* (《小品方》*Excerpts of Prescriptions*) and *Ji Yan Fang* (《集验方》*Collection of Effective Formulas*), and the latter learning *Su Wen* (《素问》*Plain Questions*), *Zhen Jing* (《针经》*Classic of Acupuncture*), *Ming Tang* (《明堂》), *Mai Jue* (《脉决》*Secrets of Pulse*) and *Liu Zhu Jing* (《流注经》*Classic of Ebb and Flow*).

During the Tang period, not only were batches of envoys sent to China but also many experts from various specialties went to Japan to teach TCM. The most representative figure should be the distinguished monk and physician of Jian Zhen. He was well-versed in both Buddhism and TCM.[4] On invitation by Japanese monks of Rong Rui(荣睿) and Pu Zhao(普照), Jian Zhen was determined to take the trip to Japan to teach commandments in 742. Against all hardships and adversities and after five failed attempts, he succeeded in landing Japan leading a team at the end of December of 753. He then began to teach Chinese culture and medicine throughout the country, which significantly promoted the achievements and development of Japanese Buddhism and medicine. It was said that 36 kinds of herbs were brought into Japan by Jian Zhen（鉴真） from China, such as Ma Huang (麻黄*Herba Ephedrae*), Xi Xin (细辛*Herba Asari*), Shao Yao (芍药*Radix Paeoniae*), Fu Zi (附子*Radix Aconiti Carmichaeli*), Yuan Zhi (远志*Radix Polygalae*), Huang Qi (黄芪*Radix Astragali*), Gan Cao (甘草*Radix liquiritiae*), Ku Shen (苦参*Radix Sophorae Flavescentis*), Dang Gui (当归*Radix Angelicae Sinensis*), Chai Hu (柴胡*Radix Bupleuri*), Chuan Xiong (川芎*Rhizoma Chuanxiong*), Xuan Shen (玄参*Radix Scrophulariae*), Di Huang (地黄*Rehmannia glutinosa*), Zi Su (紫苏*Perilla frutescens*), Dan Shen (丹参*Radix Salviae Miltiorrhizae*), Huang Qin (黄芩*Radix Scutellariae*), Jie Geng (桔梗*Platycodon grandiflorus*), Xuan Fu Hua (旋覆花*Flos lnuJae*), Cang Zhu (苍术*Rhizoma Atractylodis*), Zhi Mu (知母*Rhizoma Anemarrhenae*), Ban Xia (半夏*Rhizoma Pinelliae*), Yuan Hua (芫花*Flos Genkwa*), Zhi Zi (栀子*Fructus Gardeniae*), Wu Wei Zi (五味子*Fructus Schisandra chinensis*), Huang Bo (黄柏*Cortex Phellodendri Chinensis*), Xing Ren (杏仁*Fructus Almond*), Hou Po (厚朴*Cortex Magnoliae officinalis*), He Hou Po (和厚朴*Magnolia Obovata*), Rou Gui (肉桂*Cortex Cinnamomi*), Du Zhong (杜仲*Cortex Eucommiae*), Mu Gua (木瓜*Fructus Chaenomelis*), Da Zao (大枣*Fructus Zizyphi*), Shu Jiao (蜀椒*Sichuan Pepper*), pepper and Wu Zhu Yu (吴茱萸*Fructus Evodiae*). When the Japanese Empress dowager was critically ill, only Jian Zhen's prescriptions would work. He advocated actively Zhang Zhongjing（张仲景）'s *Shang Han Za Bing Lun* (《伤寒杂病论》*Treatise on Cold Damage and Miscellaneous Diseases* and left as his legacy the book of *Jian Shang Ren Mi Fang* (《鉴上人秘方》*Treasurable Prescriptions by Mater Jian Zhen*. Until the 17th and 18th century, his image was still printed on the packing bag of medicines by many drugstores, from which we can speculate how influential Jian Zhen is on the traditional Japanese medical field. Therefore, He was honored as the ancestor of both Ritsu（律宗） and Kampo medicine.

Japan had just imitated or copied TCM in the early period, when it came to Heian Period (784–1192 A. D.), the Japanese began to emphasize on the compilation of medical works of their own with the wakening of national consciousness.

In 808, Abe Zhenzhi(安倍真直) and the royal doctors including Izumo Guangzhen(出云广贞), acted under the Emperor's order, collected comprehensively indigenous prescriptions, and compiled the 100-Volume work of *Da Tong Lei Ju Fang* (《大同类聚方》*Da Tong Assembly of Formulas*), based on Chinese medical works such as *Huang Di Nei Jing* (《黄帝内经》*The Yellow Emperor's Inner Classic*), *Mai Jing*, *Jia Yi Jing*, *Xiao Pin Fang* and *Xin Xiu Ben Cao* (《新修本草》*Newly Revised Materia Medica*).

In 838 A.D., Japan sent the last batch of envoys to China and then the dispatching system was abolished. According to the *Catalogue of Books Present in Japan* (《日本国现在书目录》) in 898, there were 166 kinds (in 1309 volumes) of Chinese medical works stored in Japan at that time, which shows how eager the country was to study TCM.

In 984, Tanba Yasuyori（丹波康赖）, the 8th generation descendant of the King of E Liu（阿留王） who was offspring of the Ling Emperor（灵帝） of the Eastern Han dynasty（东汉）, compiled the first Japanese medical book of Ishinpō (《医心方》Prescriptions *from the Heart of Medicine*) [Figures 3-6], drawing from numerous Chinese texts introduced to Japan. The book was written in 30 volumes involving nearly 200 kinds of Chinese medical literature, and in mixed Chinese and Japanese. It was a systemic summary and preservation of a large amount of medical literature before the 10th century, providing valuable data for research on Chinese medicine in the Six Dynasties and Sui-Tang periods.

During the Kamakura Period (镰仓时期1192–1333 A. D.), plenty of Song medical books entered into Japan due to the rapid development of Chinese printing technique. Beitiao Shishi(北条实时) (1224–1276 A.D., also called Jinze Shishi (金泽实时)), built Kanazawa（神奈川） Library in Kanagawa-ken（金泽文库） to collect the Chinese books he had stored, in which there were quite a few ancient editions of medical literature. Meanwhile, there appeared a transformation in Japanese medicine from royal physicians serving the noblemen to Buddhist monks who served the folks.

During the Muromachi Period (室町时期1338-1573 A.D.), many Japanese doctors came to China to learn theories of the great Four Jin-Yuan Schools. When they returned, most of them became the leading elites of Japanese medicine at that time, including representative physicians such as Zhutian Changqing(竹田昌庆), Yue Hu (月湖), Ban Jingyun(坂净运), Banjing Mingqin(半井明亲), and Jitian Yian(吉田意安). In the middle and late 15th century, the theoretical system of Jin-Yuan Schools（金元四大家） spread widely all over Japan, of which Li Gao（李杲） and Zhu Danxi（朱丹溪）'s academic thoughts were of more influence since they were introduced much earlier.

Period of Later Developments in Medicine (15–17th Centuries)

After settlement of TCM in Japan for nearly 1000 years, the Japanese physicians, based on TCM and its integration with

Figure 1: Xufu Park

Figure 2: Statue of Xu Fu

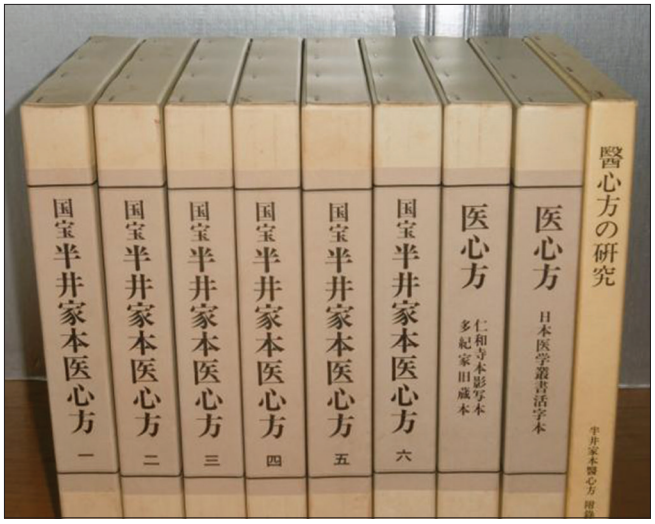

Figure 3: Research on Ishinpō (*Prescriptions from the Heart of Medicine*)

Figure 4: *Ishinpō (Prescriptions from the Heart of Medicine)*

Japanese elements, continuously made contributions and gradually established the school of Later Developments in Medicine,[5] during the three hundred years of late Muromachi Period, Azuchi-Momoyama Period (1573-1603 A.D.), and Edo Period (1603–1868 A.D.). Leading figures include Tashiro Sanxi(田代三喜)[6] and Manase Dosan(曲直瀬道三).[7]

Tiandai Sanxi [Figure 7] (1465-1544 A.D.), born in a medical family, became a monk at 15. He went to China to learn from physician monk of Yue Hu (月湖) in 1487. He was dedicated to the academic thoughts of Li Gao and Zhu Danxi's. In 1498, he returned to Japan with numerous medical works, including Quan Jiu Ji (《全九集》*Collection of Securing The Nines*) and Ji Yin Fang (《济阴方》*Formulas for Benefiting Yin*) by his teacher. At first, he dwelt on Kamakura(镰仓) and worked as an attendant physician. Years afterward, he returned to and practices in his hometown of Saitama. As the pioneer of the school of Later Developments, Tiandai was well-versed in profound theoretical knowledge and superb clinical skills, thus respected as the Medical Sage（医圣） and one of the originators of Japanese Chinese medicine together with Manase Dosan and Nagata Toruhon (永田德本).

Manase Dosan (1507-1594 A.D.), first studied on poem and calligraphy in Kyoto（关东） and began to learn medicine from Tiandai Sanxi in Kanto in 1528. He returned to Kyoto in 1546 and then focused on medicine. His fame prevailed after he treated several generals successfully. Moreover, he then set up a medical school in Kyoto. He inherited Tashiro's experience, took basis on yin-yang and five-element theories from the Inner Classic, employed Jin-Yuan and Ming（金元明） Chinese medicine as orientation, and created his own academic genre by combining excellent medical experience and flexible clinical prescriptions. His followers counted up to several hundred, spreading his art of healing among Japanese states. Until the early Edo Period, the scale of his school reached the peak, which even thrived till the middle and late Edo Period（江户中后期）.

School of Classic Methods (17–19th Centuries)

Although as early as during 1492–1501 the monk physician of Ban Jingyun(坂净运) had already learned Zhang Zhongjing's academic thoughts in China, and there was Nagata Toruhon (永田德本) with the honor of "medical Sage" in later stages (1513–1630), the real formation of the School of Classic Methods began after the 17th century, when a trend of learning *Shang Han Lun (*《伤寒论》*The Treatise on Cold Damage Diseases) appeared in Japan. The representative figures included Nagoya Gen'I*（名古屋玄医）, *Gotō Gonzan*（後藤艮山）, *Yamawaki Tōyō*（山胁东洋）, *and Yoshimasu Tōdō*（吉益东洞）.[8,9]

Figure 5: *Ishinpō* (*Prescriptions from the Heart of Medicine*)

Figure 6: *Ishinpō*

Figure 7: Tiandai Sanxi（田代三喜）

Nagoya Gen'I (1628-1696) was regarded as the initiator of the School. He familiarized himself with classics in his childhood, first learned Manase Dosan's Medical School, and then dedicated himself to ancient medical classics in later life after he contacted *Shang Han Shang Lun* (《伤寒尚论》*Elaborated Treatise on Cold Damage*) by Yu Jiayan（喻嘉言） of Ming dynasty（明代）. He was the first Japanese to annotate *Jin Gui Yao Lue* (《金匮要略》*Golden Chamber Synopsis*), advocating guidance of Zhang's academic theories, treating principle of supporting yang and subduing yin, and reviving of ancient classic formulas.

Gotō Gonzan (1659–1733) held that the yin-yang and five-element theories of the *Huang Di Nei Jing* (《黄帝内经》*Inner Classic*) and Jin-Yuan medical thoughts advocated by Tiandai Sanxi's School were mostly impractical in the clinic. Hence, by referring to *Treatise on Cold Damage and Nan Jing* (《难经》*Classic of Questions*), he invented the view of "sole qi stagnation（一气滞留）," believing qi stagnation was the root for all diseases. In practice, he was expert in using Xiongdan (熊胆 Bile bear), pungent-spicy herbs and qi-smoothing formulas, recommended medicinal diet, hot spring spa and indigenous therapies, with preference to moxibustion. As a pioneer of medical innovation, Gotō weighed practice over theories and rarely wrote his own work, and hence, his academic thoughts were inherited by his students such as Osamu Kagawa (香川修徳) and Yamawaki Tōyō.

Yamawaki Tōyō (1706–1762), was born in a generation-physician family, learned from Gotō Gonzan and advocated current use of classic formulas. He respected *Wai Tai Mi Yao Fang* (《外台秘要方》*Essential Formulas from the Imperial Library*) greatly and once reprinted it in 1746. In practice, he often quoted formulas from the book with pattern-differentiated modifications. Yamawaki doubted the traditional human anatomy through dissecting otter, developed anatomy on prisoners with death sentence after receiving official approval in 1754, and published an illustrated book on his anatomical findings in 1759, which pointed out several errors regarding zang-fu theories in traditional Kampo medicine. Although the experiments he had carried out was strongly opposed by the ancient School of Classic Methods led by Yoshimasu Tōdō, his attempts to testify human anatomy by experimenting had a tremendous impact on the Japanese medical field, and promoted the modernization of traditional Japanese medicine.

Yoshimasu Tōdō (1702–1773) [Figure 8] was born in a Kampo-medicine family for generations and deemed as the originator of reviving modern Japanese medicine. In the early years, he learned from the medical classics, objected some points of Jin-Yuan physicians, and advocated clinical practice based on *Treatise on Cold Damage*. At about 30, Yoshimasu proposed the theory of "Sole Toxin for All Diseases（万病一毒说）". He believed, on the one hand, the occurrence of diseases was closely

Figure 8: Yoshimasu Tōdō （吉益东洞）

Figure 9: Classified Assembly of of Formulas（《类聚方》）

Figure 10: Figure of Qiantian Zongbo（浅田宗伯）

Figure 11: *Anesthesia Figure of Hua Gang*（华冈麻醉图）

Figure 12: Figure of Huagang Qingzhou（华冈青洲）

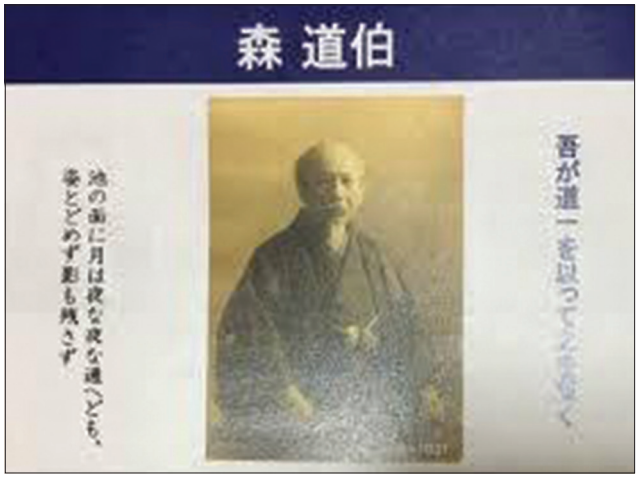

Figure 13: Figure of Sen Daobo（森道伯）

related to toxins; on the other hand, medicines were also toxins, so treating with medicines was like eliminating toxins with toxins and the disease would be cured after the toxins were gone. In specific, he preferred to use formulas of drastic properties. He also emphasized a lot on examination of the abdomen, considering abdomen as the root of the body. On the basis of Shang Han Lun and his adaptions to formulas according to clinical indications, he compiled the work of *Lei Ju Fang* (《类聚方》*Classified Assembly of Formulas*) [Figure 9]. Although it only consisted of over 200 kinds of formulas, most of the formulas would involve sweating, vomiting and draining methods. Yoshimasu called the drastic reaction after administration as responsive vertigo quite took pride in it, and regarded his book as *Yoshimasu's Shang Han*. In his early practice, there were few patients, and he had to do

handcrafts to earn a living. After he was appreciated by Yamawaki Tōyō when he was 44 years old, his reputation prevailed rapidly. Inundation of patients and apprentices came. He had gained a pool of over 500 apprentices, and his academic views influenced the Kampo medicine greatly. His son of Jiyi Nanya(吉益南涯) followed his career and became the apprentice of of Hanaoka Seishu(华冈青洲) later. Nanya modified the radical views of his father and initiated a theory of qi-blood-water. It is believed that Yoshimasu Tōdō had played a key role in diverting the Kampo medicine from its origin of traditional Chinese medicine.

In summary, the academic features of the School of Classic Methods can be concluded as suspecting the *Inner Classic*, advocating *Treatise on Cold Damage*, emphasizing clinical experience, preferring compatibility between formulas and patterns, and making good use of classic formulas.

Integrated School (18–19th Centuries)

After entering the 18th century, transformation occurred among followers of the School of Classic Methods, who tended to focus on clinical efficacy and began to utilize elements of both schools. The academic field regarded physicians of this inclination as belonging to the Integrated School. This School had overlapped time span with that of the School of Classic Methods. Since the physicians of this new School held diverse academic views, and some of them could be categorized as Classic followers, it was hard to distinguish strictly the categorization of a physician's Schools. In general, Wangyue Sanying(望月三英), Hetian Dongguo(和田东郭) and Munehaku Asada (浅田宗伯) are representative figures.[10,11]

Wangyue Sanying (1697-1769), a pioneer figure of the Integrated School, was a royal physician of General Tokugawa in middle Edo Period, studied and examined the texts of many medical books, and opposed the theory of Sole Toxin for All Diseases by Yoshimasu Tōdō, being the first to advocate integration of ancient and modern medicines.

Hetian Dongguo (1743–1803), born in a generation-physician family, whose father was a surgeon, chose the career of a physician. He learned successively from Hutian Xiushan(戶田旭山), Yoshimasu Tōdō and others. Although he did not approve all his teachers' academic views, they significantly influenced the formation of his own thoughts. He had both recognized the merits and disadvantages of classic medicine, claiming a treatment centering on classic formulas with later modifications as a supplement. In diagnosis, he not only applied the abdomen examination appreciated by followers of Classic Methods, but also employed pulse-taking with consideration of inspecting skin, tongue, deficiency or excess of eyes, and palpitation between the kidneys, termed as the six diagnoses. His medication preferred gentle treatment without inclination of warm supplement or pure draining. The harmonious method he proposed won general recognition in the medical field and has extended to impact the traditional Japanese medicine nowadays. As a leading scholar of the Integrated School, Hetian Dongguo was ont only well-versed in concise and exquisite medical skills but pursued a benevolent career.

Qiantian Zongbo (1815-1894) [Figure 10], was born in a generation-physician family and determined to become a doctor. He once went to Kyoto and Edo to learn Kampo medicine, Confucianism and history. In 1875, he took the position of a royal physician and won well-known fame after treating a French ambassador and Japanese prince (later the Emperor Taish大正天皇) at that time successfully. Qiatian absorbed the excellent experiences of different schools with abundant effective cases of critical and difficult illnesses. He also enrolled numerous apprentices and wrote over 80 books in 200 + volumes. Zongbo was not only a skillful doctor but also expert at writing, poems and calligraphy, entitling himself as physician, historian, literature, thinker and poet. As a master of Kampo medicine during late Bakufu Period（幕府末期） and early Meiji Period（明治初期）, Qiantian Zongbo had constantly been an influential leader, whose clinical legacy illuminated the traditional Japanese medicine historically.

In addition to the Integrated School of Classic Methods and Later Developments, there appeared the Kampo-Dutch School to integrate traditional Japanese medicine with Dutch medicine in the 18th century, with a leading figure of Hanaoka Seishu(华冈青洲).[12]

Huagang Qinghzou (1760–1835) [Figures 11 and 12] was the third generation physician of his family. In 1782, he went to Kyoto, first learned classic formulas from the son of Yoshimasu Tōdō and then studied on surgery from a German doctor of a Dutch business house. He returned home in 1785 and inherited his father's post to practice medicine. Qingzhou contended the integration of Kampo and Dutch (Japanese and western) medicines, without separating internal medicine and surgery and with emphasis on clinical treatment. To relieve patients' suffering from operations, he began to develop anesthetic and tried the anesthetic efficacy on herbs such as Mantuoluo (曼陀罗*Datura stramonium*), Caowutou (草乌头*Radix Aconiti Kusnezoffii*), Baizhi (白芷*Radix Angelicae Dahuricae*), Danggui (当归*Radix Angelicae Sinensis*), and Chuanxiong (川芎*Rhizoma Chuanxiong*). After animal experiments for several times, he tested the medicine on his family, and at the cost of his mother's life and blindness of his wife, he invented a general anesthetic of Tong Xian San (通仙散Powder for Communicating with the Immortal), which was also named as Ma Fei San（麻沸散）. In 1804, he performed a successful mastectomy on a 60-year-old female patient with mammary carcinoma aided with his anesthetic. Although according to the Chinese literature, Hua Tuo in the Three Kingdoms Period (三国时期220–280 A.D.) once operated on patients with Ma Fei San, the composition of the formula was unknown. Afterward, Huagang became a nation known and carried on operations concerning bladder stone, hemorrhoids and carcinomas in succession, incurring inundation of patients and apprentices. He established a private medical school of Chunlin Xuan(春林轩), which had cultivated over 1000 students. To keep secrets his medical experience and recipes, Qingzhou seldom wrote books and instructed nobody except his own apprentices. Once someone made one of his recipes public without his consent and was then deported from his teaching. The medicines developed by Huagang such as Ten-ingredient Toxin-eliminating Decoction（十味败毒散）, Zhong Huang Paste（中黄膏） and Ziyun Paste（紫云膏）,

etc., which are still in use in Japan at present, reflecting Huagang's influence on the traditional Japanese medicine.

School of Textual Research

During the late Edo Period（江户后期）, after learning form Chinese textual research methods, the Japanese scholars began to apply them to the study on Kampo medicine. Besides sorting and exploring ancient classic literature, they would annotate the texts appropriately. The dedicated research institutions and groups were mainly lodged in the Edo Medical Institute, involving prominent scholars such as Duoji Yuanjian(多纪元简), Sejiang Chouzhai(涩江抽斋) and Sen Lizhi(森立之),[13,14] etc.

Duoji Yuanjian (1755-1810), learned medicine from his father when he was young, and studied Confucianism from Jingshang Jin'e(井上金峨). In 1777, he began to work in the Tokugawa General House and became a royal physician later. In 1791, he acted as a teaching assistant in the official medical school his father took charge in. When his father retired in 1799, he succeeded the post. Except for his life-long dedication to his work, he was an expert at textual research, including proofreading and reprinting of ancient books, deemed as one of the initiators of textual research medicine together with Yize Lanxuan(伊沢兰轩), Duoji Yuanjian, Sejiang Chouzhai, and Sen Lizhi. The textual monographs he authored incorporated Shang Han Lun Ji Yi(《伤寒论辑义》Editing of Intentions from Treatise on Cold Damage), Su Men Shi(《素问识》Editing of Intentions from Golden Chamber Synopsis), Understanding of Plain Questions and Ling Shu Shi(《灵枢识》Understanding of Miraculous Pivot). Among all his offspring, Duoji Yuanyin(多纪元胤, the third son) and Duoji Yuanjian (多纪元坚，the fifth son) also contributed significantly to the textual research of medical classics.

Sejiang Chouzhai (1805-1858), born in a generation-physician family, learned from several famous scholars on textual research, made friends with learned figures both in the Confucian and medical field, and acquired the academic essence deeply. He had achieved excellent accomplishments in his research, and became the academic authority of textual research in Japan. Among all his works, the *Jing Ji Fang Gu Zhi*(《经籍访古志》*Record of Ancient Classic Literature*) coauthored with Sen Lizhi（森立之） was a time-honored masterpiece. Furthermore, he was one of the major proofreaders of Ishimpo.

Sen Lizhi (1807-1885), was a distinguished physician and scholar on textual research in the late Edo Period. He learned from Sejiang Chouzhai (two years older than him) when he was only 11 years old. At 16, he became an apprentice of the top scholar of Yize Lanxuan who was Chouzhai's teacher as well. In 1837, he went to Sagami and lived a recluse life for 12 years, studying dedicatedly on medical works such as *Shennong's Classic of Herbs*, the *Yellow Emperor's Inner Classic*, *Treatise on Cold Damage Diseases*, and *Jin Gui Yao Lue* (《金匮要略》*Golden Chamber Synopsis),* etc., He returned to Edo in 1848. In 1854, he published his work of *Shen Nong Ben Cao Jing Kao Zhu* (《神农本草经考注》*Textual Annotation of Shennong's Classic of Herbs*), appointed as a lecturer of a medical school, and participated in the proofreading work of Ishimpo at the end of the same year. Sen Lizhi's prominent academic achievements could be reflected by the publishment of *Textual Annotation of Shennong's Classic of Herbs* and *Record of Ancient Classic Literature*, etc.

With the development of the School of Textual Research, there came forth a generation of prestigious scholars who had compiled numerous monographs of high-academic values. These research achievements were introduced into Qing China after the Meiji Restoration, which influenced on the Chinese medicine of the day properly.

Declination and Revival Periods

Declination period (late 19th century to middle 20th century)

Although it was introduced into Japan in the late 16th century, the scale of influence of western medicine was far inferior to traditional Japanese medicine at that time. Since the 18th century, western medicine began to develop gradually. *Jie Ti Xin Shu* (《解体新书》*The New Book of Human Anatomy*) by Shantian Xuanbai(杉田玄白) in 1774 and *Excerpts of Western Internal Medicine*（《西说内科选药》） by Yutian Chuanxuan(宇田川玄) in 1793 impacted massively on the development of Kampo medicine. The western medicine based on surgery grew rapidly before the Meiji Restoration（明治维新） when trends of integration of Kampo and western (Dutch) medicines emerged, and some even pursued Dutch medicine and abandoned traditional medicine. After the Meiji Restoration, driven by economic and military needs to catch up with European countries, the government put into force a medical system of promoting western medicine and eliminating traditional medicine. In 1883, it was regulated that only those who had received western medical education and passed national examination could be qualified medical practitioners. This changed the destiny of Kampo medicine decisively. Some learned scholars initiated petition but failed, which led to a dramatic decrease in the number of practitioners in Kampo medicine. Physician who chose to stay were forced to practice privately or among the folks. Meanwhile, though licensed western doctors were allowed to practice Kampo medicine, on the one hand, they were lack of theoretical knowledge and clinical experience; on the other hand, against the context of restrict and obstruction toward Kampo medicine by the government, few would like to consider studying it. The Kampo medicine then fell declined, and various terms appeared to avoid suspicion, such as Imperial Formula, Imperial Kampo Formula, Yamato Formula, Yamato Kampo Formula, and Toyo (Oriental) Medicine.[15,16]

In 1875 (early Meiji Period), there were 22527 Kampo doctors, taking 81.5% of the total number of 27650 in Japan. After the Meiji Restoration, the situation went downhill. To survive the fierce and brutal competition with western medicine, the imperial physician of Qiantian Zongbo, together with other learned scholars, established a Kampo institute in 1879, called Wenzhi She(温知社), to carry on academic activities and cultivate students. They set up the Wenzhi Hospital in 1884, with about 30 relevant Kampo clinics around the country. However after the death of the pioneer Kampo physicians such as Sen Lizhi, the Wenzhi She, had unfortunately come to an end too in 1887. As the last master of Kampo medicine and Kampo physician of the Japanese royalty, Qiantian's death signaled a complete failure of

traditional Japanese medicine in a fight against western medicine, and also the declination of Kampo medicine. In 1895, the Japanese parliament rejected the amendment proposed by Kampo doctord by 105 votes to 78 votes, which was the last straw to Kampo medicine and left hopeful practitioners of Kampo medicine in desperation. Ever since the Kampo medicine with a time-honored history exited from the once glamorous stage, its clinical treatment and academic research had also been heavily wounded.

Revival period (since the middle 20th century)

Despite the governmental inhibition and attack of western medicine, the Kampo medicine still survived in the folk because of its historical influence and actual effectiveness. Some firm believers chose to practice maong the folks as well, especially prestigious Kampo physicians from generation-physician families. They inherited the tradition of Kampo medicine and stored the seed for its revival. Kampo medicine, which almost perished in the late Meiji Period, began to revive in early Showa Period(昭和初期). Moreover, Sen Daobo(森道伯) played a leading role in the process.

Sen Daobo (1867-1931), once learned from the famous Kampo physician of Qingshui Liangqi(清水良斉). When he was 35 years old, his teacher suddenly went out and never returned, so he had to succeed his teacheran to revive in early Yi Guan Tang(一貫堂) Hospital, and dedicated to Kampo treatment. Many people admired his exquisite medical skill and noble character, and went to him for medical attention and experience, even including some licensed western doctors. Since Sen Daobo did not take systemic western medical education and acquire licensing, his attempts encountered opposition and rejection by the Japan Medical Association and relevant government departments. On November 26, 1926, the Medical Conference of Reviving Kampo Medicine was held in Nagano-ken, when Sen Daobo claimed in a speech that the legal position of Kampo medicine should be restored, and whoever intended to extinguish Kampo medicine must perish him first. It had been nearly 30 years since the salvation movement of Kampo medicine failed in 1895. This time Sen Daobo was a representative figure to ignite the fire of its revival. He not only took the lead himself in the fight but also cultivated generations of successors loyal to the Kampo cause, including many distinguished scholars in the traditional medical field.

During early Showa Period, academic institutions and groups dedicated to the revival of Kampo medicine and traditional Japanese medicine emerged in succession, involving Kampo physicians like Sen Daobo, and western medicine doctors who took great interest in it such asShishu Daoming(矢数道明), Dazhong Jingjie（大塚敬节）, and Teng Pingjian(藤平健), etc. They were young and vigorous, participated actively in the revival movement, carried out various kinds of academic activities, and set up Kampo medical organizations and journals, such as Japan Kampo Medicine Association and East Asian Medical Association, etc.

In the meantime, the Kampo medical field carried on the protest to win back its legal position. According to the scale and impact of the petitions, the notable ones were the petition by Shishu Ge(矢数格) of Yi Guan Tang and one thousand more in March of 1934, and the petition launched by Japan Kampo Medical Association and Japan Medical Research Association in November of 1940. After World War II, the Kampo practitioners intended to restore the Kampo organization, yet were mocked by the staff of Ministry of Welfare when they handed in the application. In view of the sensitive meaning of the word of "漢 (Kampo)" and the official inhibition of the word in government files, they considered to establish the organization of Japan Society for Oriental Medicine, which was approved and officially set up in March of 1950. It only enrolled 98 members at the beginning, but now incorporates nearly 10000 registered members, of whom physicians take the majority of proportion, with dentists, pharmacists, and acupuncturists included.

Since 1976 when many Kampo formulas and crude medicine were incorporated into Japanese national medical insurance, increasing number of people is turning to use Kampo medicine. Research organizations, societies, and clinics of Kampo medicine have been founded by some universities and national research institutes, and even in the folks. After the 1980s, with the Chinese economic reform and opening up, Japan and China have reached a new level of exchanges and cooperation. The word "Chinese medicine" has been recognized by traditional Japanese medical field, and there has existed a compatible situation of Kampo, Oriental and Chinese medicines in Japan. Except Kampo and Oriental medical institutes existing, some institutions, organizations, and clinics of Chinese medicine have also sprung up. According to recent statistics, there are about 85% of Japanese western doctors who will employ Kampo formulas every year.

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Conflicts of interest

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Original Article

Maqianzi (马钱子*Strychnos*), A Poisonous Medicinal Native to the Western Regions

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Abstract

Maqianzi (马钱子*Strychnos*) is also called "Fanmubie (番木鳖)," "Kushi (苦实)" and "QianJi drug (牵机药)." The alias "Fanmubie" shows its origin and its characteristics. The name of "Kushi" implies its taste and flavor. "Qianji Drug vividly shows the clinical manifestations of the poisoning of Maqianzi. The name of "Maqianzi" is the comprehensive display of its characteristic, toxicity, etc., Maqianzi is famous for its poison, which is often used in the treatment of various intractable diseases. It shows the poison Culture in the Western Regions, meanwhile it also displays the unique charm of Traditional herbs in transforming poison into treasure.

Keywords: Fanmubie, Kushi, Maqianzi (马钱子*Strychnos*), QianJi drug; poison culture in the Western Regions, use

"It can treat typhoid fever and sore throat, and eliminate phlegm. Place it on the tongue to dissolve, and swallow with saliva; or dissolve it in water as a drink."

-*Ben Cao Gang Mu*（《本草纲目》*Compendium of Materia Medica*）

When it comes to poisons, people always have a feeling of terror and death. Since all kinds of poisons such as Duan Chang Cao (断肠草*Gelsemium elegans*), colored snow spiders and life-and-death charms are native to the Western Regions, folks have the saying that extreme poisons all over the world are produced in the Western Regions. Although poisons of the Western Regions in martial-arts novels cannot be verified, Maqianzi (马钱子*Strychnos*), which has been introduced into the central China via the Silk Road, is still in use today [Figure 1].

Interpretation of Medical Name

The name of Maqianzi was first recorded in *Ben Cao Gang Mu* (《本草纲目》*Compendium of Materia Medica*), in which it says "The vines are born with yellow flowers in summer. It is green when unripe and full red when ripe and it looks like Mubie (木鳖*Momordica cochinchinensis, A kind of herb*). Its nucleus is smaller than the Mubie and its color is white [Figure 2]." In fact, as early as before the Tang and Song Dynasties（唐宋）, Maqianzi has been introduced into China as a poison.

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People gave different names to Maqianzi in the process of knowing about and applying it, such as "Fanmubie（番木鳖）," "Kushi（苦实）," and "Qianji Drug（牵机药）," in terms of their origin, appearance, taste and toxicity.

Interpretation of alias

The name of "Fanmubie" emphasizes on its origin and its characteristics. *Shuo Wen Jie Zi*（《说文解字》 *Origin of Chinese Characters*）says that "The original meaning of 'Fan' is animal's claw," which has a certain belittle meaning. From ancient times to the present, the feudal emperors has regarded the countries they ruled as the supreme heavenly kingdoms, and regarded ethnic minorities and foreign nationalities other than the Han as uncultivated barbaric nationalities, with the words "fanguo (番国)," "fanbang (番邦)," etc., following. When it comes to the origin of Maqianzi, Ben Cao Gang Mu says: "It is born in Huihui (回回) nation, namely, today's Arabarea, and is now everywhere in the western soil of Dengzhou (邓州)." Maqianzi was introduced into central China fromthen "fanbang." Besides, the name of fanmubie also originates from the Mubie because they share similar size and shape-flat

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and round, or slightly triangular shell, with a slightly bulging shape in the middle.

"Kushi" embodies the characteristic of its taste and flavor. "Ku（苦）" means bitter in Chinese. The seed of Maqianzi is used as medicine, and it is usually raised on one side, and the other side is slightly concave. The taste is extremely bitter, so it is called "kushi."

"Qianji Drug" vividly shows the clinical manifestations of the poisoning of Maqianzi. "Qianji（牵机）" originally refers to a structure that drives the shuttle when hand-woven. According to the records in Mo Ji（宋代王铚《默记》，*compiled by Wang Shuo in the Song Dynasty*）, the victim poisoned by Qianji Durg tends to sometimes clench his fists and sometimes unfold his fists, with his head bending or tilting and twitching forward, and he cannot stand straight, which is like a working weaving shuttle that never stops [Figure 3]. Then he ends up dying with foot-to-foot contact. It is also one of the poisons that ancient emperors grant to courtiers and concubines if he wants them to die.

Interpretation of *Strychnos*

Li Shizhen（李时珍）said in *Ben Cao Gang Mu*, "Its appearance is very similar to the "lianqian (连钱)" hanging on the neck of the horse ("*ma" in Chinese*), so it is called maqian（马钱）.[1]" Lianqian refers to two ancient coins joined together without being chipped [Figure 4]. In the Qing Dynasty（清代）, Lu Zhao（鲁照）explained the function of Maqianzi in *Chuan Ya Bu*（《串雅补》*The Sequel of Chuan Ya*）. He said: "with the name of "maqian（马前）," this herb has great properties in passing through the whole body without sticking to one place, it can drill the sinews and penetrate the bones, regulate meridians and collaterals and cure the numbness, the pain of joints and rheumatoid disease." Another explanation for the name of "Maqianzi" is to emphasize the intensity of its toxicity. Since "money" and "before" are both called "qian" in Chinese. An old folk vividly says: "Ate before the horse and died after the horse." That is to say, the herb is named Maqianzi because it is highly poisonous and can cause death after swallowing it for a while. Besides, a mace (*Another homonym of the Chinese word "qian"*) should be the smallest dosage unit in ancient times, and there is a saying that "one mace is worthless." A single mace (3.73 g) Maqianzi can poison a horse to death, from which its toxicity is evidently exposed.

Therefore, Maqianzi and its other names, "Fanmubie," "Kushi " and "Qianji Drug," are essentially derived from its morphological characteristics and toxicity, and constantly tell the historical vicissitudes of poison culture in the Western Regions.

Maqianzi and its poison culture in the Western Regions

In *Shen Diao Xia Lv*（《神雕侠侣》*Legends of the Condor Heroes*）, the colored snow spider（彩雪蛛） is produced on the top of the snow mountain in Tibet（西藏）. It shares the same size with the wine cup. It is colorful and one of the three most poisonous spiders in the world.

In *Yi Tian Tu Long Ji*（《倚天屠龙记》*The Heaven Sword and Dragon Saber*）, a monk from the Western Regions dedicated a poison powder called Shi Xiang Ruan Jin powder（十香软筋散）to King Ruyang（汝阳王）. This kind of poison is colorless and odorless. After digesting it, victim's bones and muscles become weak and his internal force is useless.

In *Tian Long Ba Bu*（《天龙八部》 *The Demi-Gods and Semi-Devils*）, Ding Chunqiu（丁春秋） poisons Xinghe Su（苏星河） and Master Xuannan（玄难）with a poison called "San Xiao Xiao Yao powder（三笑逍遥散）," which is characterized by the strange smile on the face of the poisoned person, and then dies after three times of laughter [Figure 5].

Why are so many strange and highly poisonous drugs native to the Western Regions? Obviously, it is inseparably related to the bad ecological environment in the Western Regions(西域). The poor water and mountains there not only facilitate the growth of all kinds of poisonous creatures, but also make it possible for human beings to produce and use poisons [Figure 6].

As a highly toxic herb, the toxic effects of Maqianzi have been widely recognized and applied in nations in the Western Regions since ancient times. In ancient times, it was often used as a poison to kill rats. It was also used to kill criminals or to murder people for money. For example, in Ji Du Shan Bo Jue（《基督山伯爵》The Count of Monte Cristo）, the, the French Alexandre Dumas described that the beautiful and greedy prosecutor's wife uses Maqianzi to kill four lives for huge amount of fortunes [Figure 7].

After being introduced into China, Maqianzi killed many people as a poison, among which the most famous was Li Yu（李煜）, the king of the Southern Tang Dynasty(南唐) [Figure 8]. In 975, Li Yu was captured and surrendered to the Song dynasty. On one night of the Mid-Autumn festival, he looked up at the bright moon in the sky and wrote down a famous poem, Yu Mei Ren（《虞美人》*Yu, the Lady of Beauty*）. After Song Emperor Zhao Guangyi（赵广义）read his word, he felt Li Yu's nostalgia for the good life of the past, and his unwillingness to be a prisoner. He thought Li Yu wanted to make a comeback and this would be a big worry. So, in a moonlit night, he sent Li Yu a pot of poison wine containing Maqianzi to poison him to death.

The understanding and use of the toxicity of medicinal Maqianzi have experienced a process from "nontoxic" to "toxic" and even "greatly toxic." In *Ben Cao Gang Mu*, it was first recorded that Maqianzi is "bitter, cold and nontoxic." In Ben Cao Hui Yan（《本草汇言》*Collection of the Commentaries on the Materia Medica*）, it is pointed out that Maqianzi is "poisonous."[2] Ben Cao Yuan Shi（《本草原始》*Origin of the Materia Medica*）records that it is "sweet, cold, and poisonous," "If birds are poisoned by Maqianzi, they feel numb and contracture. If dogs are poisoned, they feel spasmodic pains in the bowels. If people take it by mistake, it causes all limbs convulsive."[3] *Yi Xue Zhong Zhong Can Xi Lu*（《医学衷中参西录》）*Discourses of Traditional Chinese and Western Medicine in Combination*）records that it is "highly poisonous."[4] As a member of the poison culture in the Western Regions, the medicinal value of Maqianzi is also centered around its toxicity.

Figure 1: Picture of Strychnos(马钱子)

Figure 3: Picture of Qian Ji (牵机， A structure that drives the shuttle when hand-woven)

Figure 5: Louis Cha (金庸，1924-2018), Many of the poison were originated in the Western Regions in his martial-art novels, such as (《神雕侠侣》 *Legends of the Condor Heroes*)

The function of Maqianzi

Maqianzi is famous for its toxicity, which is often used in the treatment of various intractable diseases. Its most important characteristics and applications are achieved by taking unblocked transmission. Zhang Xichun (张锡纯) has a deep

Figure 2: Strychnos and Momordica are similar in shape and color. (Left: Strychnos; Right: Momordica)

Figure 4: Picture of Lianqian (连钱，Two ancientcoins jointed together without being chipped)

Figure 6: Picture of the Western Regions(西域)

understanding of this: "the toxicity of Maqianzi is very strong, and its function of dredging the channels and collaterals and going through the joint is far stronger than other drugs." Its application is mainly centered around two aspects: promoting circulation and expelling toxicity.[5]

Obstruction of collaterals（络脉不通证）

If the collaterals are impassable, the blood will not be freely circulated, and various diseases follow such as rheumatism, numbness, hemiplegia, facial paralysis, bruises, swelling pain and so on. Maqianzi does well in taking unblocked transmission and can ease rheumatoid arthritis symptoms by

Figure 7: Alexandre Dumas pere (1802-1870), the author of "The Count of Monte Cristo"

Figure 8: Li Yu (李煜, 937–978), the Emperor of the Southern Tang Dynasty, It is said that he was poisoned to death by the wine containing Strychnos

dredging the channels and collaterals and penetrating joints and unblocking blood.

Toxic accumulation （毒积证）

Maqianzi, as a drug of great toxicity, is good for taking unblocked transmission. For some diseases caused by the accumulated toxins, such as carbuncle and cancer, Maqianzi can not only combat poison by virtue of its toxicity, but also reduce the swelling with the characteristic of taking unblocked transmission. Clinically, the treatment for such diseases is very effective. Whether it is for internal or external use, it has high application value.

"Use it inappropriately, one's life will be shortened; use it properly, severe lingering diseases may be cured." Native to Huihui nation, Maqianzi shares the same shape with the connected-coins, either seizing one's life or curing diseases and saving one's life with its great toxicity. It constantly unveiled the mysterious veil of the poison culture in the Western regions.

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Conflicts of interest

There are no conflicts of interest.

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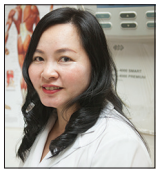
Case Report

Chinese Guqin Music and Calligraphy for Treating Symptoms of Primary Insomnia



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Abstract

Purpose: To investigate the intervention effects of using traditional Chinese Guqin music and Chinese Calligraphy handwriting (CCH) for patients with Primary Insomnia. **Methods:** A total of ninety patients were assigned to control group, Guqin group, and calligraphy group for 8 weeks. For 5 days a week, patients' heart rate variability (HRV) and frontal midline (FZ) electroencephalographic signals were recorded in a clinic during interventional period while either listening to Guqin music or writing calligraphy. Patients in the control group remained in rest condition. **Results:** For the Guqin group, the higher low-frequency-range HRV of coherence was found with marginal significance ($P = 0.055$), and heart rate was significantly reduced ($P < 0.05$) during the 4th week in listening to Guqin music compared to the prerest period. For listening to Guqin music or calligraphy intervention, FZ δ, FZ θ, and FZ α waves in the 8th week compared to the 0th week (Pre Intervention) showed a significantly enhanced effect ($P < 0.05$). Between the three groups, for heart rate and FZ δ and FZ θ waves, calligraphy group showed significantly increased heart rate than the Guqin group ($P < 0.001$)and the control group ($P = 0.004$); increased FZ δ wave than the Guqin group ($P < 0.001$) and the control group ($P < 0.001$); and increased FZ θ wave than the Guqin group ($P = 0.024$) and the control group ($P = 0.008$) respectively. **Conclusion:** Positive intervention effects on HRV coherence of Guqin music; FZ δ, FZ θ, and FZ α waves of Guqin music and calligraphy proved that Guqin music together with calligraphy training helping to promote physical and mental health, thereby it contributes to the clinical application of TCM Psychology for patients with insomnia syndrome.

Keywords: Alpha, calligraphy, Chinese calligraphy handwriting, delta, EEG brainwave, Guqin, heart rate variability, physical and mental health, primary insomnia, TCM Psychology, theta

Introduction

Traditional Chinese Medicine (TCM) has always emphasized the harmony of "Essence (精), Qi (气), and Spirit (神)" and the unity between mind and body. The key to good health is the self-regulation of mind and body to reach a state of balance. We found that Guqin music and calligraphy on mental health of TCM are inextricably linked, as they both focus on "breathing exercise (运气), cultivating the heart (养心), and empathizing empathy (移情). They encompass the same key philosophy as the reinforcing method "tranquil the mind for cultivating the heart (静神养心)."

As early as in Yue Ji (《乐记》The Record of Music), Guqin has been promoted as a means of cultivating the heart[1] in ancient China. Calligraphy therapy has recently been promoted in the field of evidence-based behavioral medicine;[15,17,21] in Western psychology, Guqin music and calligraphy therapy could be categorized as psychological relaxation therapy;[2] listening to Guqin music often and practicing Guqin as well as calligraphy could induce an individual state of mental peace, harmony, and health.[3,27]

Music Therapy on Insomnia Research

Music therapy is considered a traditional treatment method in physical therapy, sports therapy, and rehabilitation, which are also an integral part of the treatment methods in alternative medicine. Although drug treatment of insomnia is most common, the benefits of music therapy are confirmed with clinical efficacy: music therapy has effects on nutrition and the circulatory, respiratory, and endocrine systems. It is also confirmed in the field of psychology that music therapy effectively reduces mental symptoms of patients

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on anxiety and depression and sleep disorders, helps in pain relief, and improves self-appraisal.[4] Clinical research found that music therapy was effective in reducing anxiety and improving sleep quality among patients with critical illnesses.[5,6] Relaxing music was effective for emotion regulation and treatment for patients with schizophrenia and students with depression[7] for improving the sleep quality among students and the elderly.[8-10] However, Western and TCM in academic field have no clinical reports on Guqin music or calligraphy for the intervention of patients with primary insomnia on the effect of mind–body harmony and optimal brain functions. Thus, an empirical study researching the use of calligraphy in promoting the mind–body health of patients with insomnia on heart rate variability (HRV) and frontal midline (FZ) electroencephalographic (EEG) is initiated as follows.

Guqin and Calligraphy on Electroencephalographic Research

The effects of music from different cultural environments (Guqin: Chinese music; piano: Western music) on crossmodal selective attention were studied on behavioral and event-related potential (ERP) responses, with a visual task, from Chinese participants in three conditions: silence, Guqin music, or piano music background. The early (N1) and late (P300) stages exhibited no differences between Guqin and piano backgrounds during the visual task, which was in contrast with the results of the auditory task collected in previous research showing that the musical cultural factor is more obvious in intramodal than in crossmodal selective attention.[11,12] Zhou Chang *et al*.[13] assigned an experimental group of 14 to do painting creation after listening to Guqin music and found that cognitive effect and creativity on brain electric spectrum analysis had greater promoting effect than that of piano music.

An early study on Chinese calligraphy handwriting (CCH) found that, when a participant reads a Chinese or English character right before writing, the English character elicited a higher positive ERP on the parietal cortex, whereas Chinese character elicited higher positive ERP on the motor cortex. It was also found that when participants started writing, both the Chinese and English characters elicited higher negative ERP on the left hemisphere, showing a process of brain activation on calligraphy writing.[14] Recently, an electroencephalographic (EEG) research on the FZ of 24 college students with theta and alpha waves of both the calligraphy group and the calligraphy with neuro-feedback group showed significant increase after 10-day intervention, reflecting a relaxed and concentrated state evoked by calligraphy.[15]

Guqin and Calligraphy on Heart Rate Variability

HRV is a common index used to represent the emotional mind–body harmony phases in physiological coherence which describes a mode that encompasses entertainment, resonance, and synchronization – distinct but related phenomena, all of which emerge from the harmonious interactions of the body subsystems. Correlates of physiological coherence include increased synchronization between the two branches of the autonomic nervous system (ANS), a shift in autonomic balance toward increased parasympathetic activity, increased heart–brain synchronization, increased vascular resonance, and entrainment between diverse physiological oscillatory systems. The coherent mode is reflected by a smooth, sine wave-like pattern in the heart rhythms (heart rhythm coherence) and a narrow-band, high-amplitude peak in the low-frequency (LF) range of the HRV power spectrum, at a frequency of about 0.1 Hz.[16]

Lam *et al*.[17] used a smartphone and a Bluetooth chest heart rate device as a Guqin–calligraphy biofeedback system for brain health and emotion. Training results showed that the first and third Guqin sessions elicited 55% and 68%, respectively, and the second calligraphy session elicited 31% of high HRV coherence. This indicated a preliminary observation that finger calligraphy and Guqin music listening both improved one's emotion regulation, and that this effect could mean a shortening of intervention duration as well as an application of both treatments. The second session with finger writing of calligraphy further demonstrated a brain activation elicitation of 31% high and 69% medium HRV coherence ratios, showing that the heart and brain were interacting under a balanced state. We believe that this practice contributed to increased emotion regulation from 55% to 68% of high HRV coherence through an increase in attention and concentration that are associated with the practice of calligraphy.

Calligraphy therapy in evidence-based behavioral medicine can be divided into two major directions, "mind–body" and "brain"

"Mind–body" direction

In the psychology of Chinese calligraphy, Kao[18] reported a series of psychological experiments in calligraphy behavior research, mainly covering the topics of the psychological and physiological responses of calligraphic acts, such as heart rate, blood pressure, breathing, electromyography, and brainwaves (electrocardiography). Moreover, it aimed to establish a scientific foundation for calligraphy from various aspects in theory, research, and clinical application with the goal of clarifying why calligraphy, a seemingly simple writing operation, can serve as an effective treatment and result in positive overall outcomes on physical and mental health.[19-21]

"Brain" direction

From calligraphy on intelligence and brain function tests, Chinese character cognition, Chinese character structure, and attention allocation research results, a theory of "calligraphy-optimizing brain activation effect" was proposed which revealed that calligraphy can enhance the intelligence functions of the brain.[22]

Recent research has confirmed that neuroplasticity is elicited by CCH which is believed to induce significant therapeutic effects.[28] It has also confirmed that CCH therapy can reduce neuropsychiatric symptoms.[29,30]

Guqin and Calligraphy for "Heart Cultivation" and "Brain Cultivation" in Clinical Research

Research objective

Based on the results of the above studies, it was found that Guqin music and calligraphy are effective for "heart cultivation," "brain

cultivation," and HRV. Delta, theta, and alpha brainwaves were measured for indexing of the present heart–brain intervention research for patients with primary insomnia.

Research method

Observation of clients: Patients were screened to meet the standards of primary insomnia. Measurements and clinical interventions took place at Yi-Ren Clinic, a specialist insomnia outpatient TCM Health Center in Hong Kong.

Group standards, exclusion criteria, and methods

Criteria

(1) Males or females aged between 16 and 70 years; (2) those who met the diagnostic criteria for insomnia in accordance with the Diagnostic and Statistical Manual of Mental Disorders Fourth Edition and with difficulties falling asleep and/or sleeping with difficulties or feeling tired even after sleep, lasting for at least 1 month causing significant distress or damage on social, occupational, or other important features; (3) those with a lasting course with more than 4 weeks and <1 year; (4) and those with education attainment above junior high school, on a voluntary basis, and signed informed consent form.

Exclusion criteria

Individuals with mental disorder, somatic diseases, as well as other medical problems such as alcohol or drug-induced insomnia were excluded. A total of ninety cases with primary insomnia were assigned in random, with thirty to each of the three groups as control group, Guqin music group, and calligraphy group.

Clients and research procedure

Clients

A total of ninety patients with primary insomnia syndrome were assigned to control group (rest condition) (n = 30), Guqin group (n = 30), and calligraphy group (n = 29, 1 miss). They were assigned based on randomly generated numbers. Consecutive interventions lasted for 8 weeks, 5 days a week. Participants were assigned to either listening to Guqin music or tracing Chinese calligraphy characters with brush for 30 min before sleep. HRV and FZ EEG signals were recorded in a clinic on the 0th, 4th, and 8th weeks for a total of three times each week: during the pre- and post-interventional period for 3 min at rest, the 30-min interventional period either listening to Guqin music or writing calligraphy, and when the control patients remained on rest condition. Five types of Guqin music with leisure rhythms, namely (1) "Serene Orchids" 《幽兰》; (2) "Enjoyable Night-An Opening Tune"《良宵引》; (3) "Wild Geese Hovering over the Sands"《落雁平沙》; (4) "A Chat Between a Fishman and a Woodcutter"《鱼樵问答》; and (5) "Thinking of an Old Friend"《忆故人》were played with a stereo headphone by the Guqin group. A set of specially designed psychological symbols and characters by Professor Henry Kao (高尚仁)[21] from the patented biofeedback-based system of calligraphy were printed in the form of copybook for the participants of the calligraphy group to trace on the top with a calligraphy brush to complete the daily intervention.

Research equipment

ProCom 2 manufactured by Thought Technology Ltd, 5250 rue Ferrier, Suite 812, Montreal, Quebec, Canada, H4P 1L3 was employed for HRV and EEG brainwave recording. According to the standard procedure as suggested in the handbook, blood volume pulse from the index finger for heart rate and LF range (0.04 − 0.15 Hz) HRV in percentage and FZ point delta (δ), theta (θ), and alpha (α) EEG brainwaves were taken. The recorded data were preliminary analyzed using the BioGraph Infiniti version 5.1.4 system software provided by Though Technology Ltd in operation with the ProCom 2.

Statistical analysis by SPSS

Preliminary experimental data were collected from the clients by the ProCom 2 on LF-HRV, heart rate, FZ δ wave，FZ θ wave, and FZ α wave and were arranged in the following SPSS format: GROUP (control, calligraphy, Guqin music) × client measurement (0-week preintervention, 0-week intervention, 0-week postintervention; 4-week preintervention, 4-week intervention, 4-week postintervention; and 8-week preintervention, 8-week intervention, 8-week postintervention). Analysis was performed using ANOVA of the SPSS statistical software version 16.0 and general linear model with repeated measure on a 3 (between group design) × 9 (within participant design). Analysis of variance with F and P values, between groups, repeated measure of participants, and pairwise comparisons were tested with least significant difference (LSD) t-test. A P value of less than 0.05 indicates statistical significance.

Results

Guqin music group for heart rate variability measure on mild body effect

Compared to preintervention, during the 4th week, LF HRV increased with marginal significance F (1, 29) = 4.000, P = 0.055 [Figure 1], and heart rate decreased significantly F (1, 29) = 4.207, P = 0.049 [Figure 2].

For electroencephalographic measure on brain effect

- During intervention in listening to Guqin music, the 8th week compared with the 0th week, increased significant effects were elicited on FZ δ wave F (1, 29) =11.292, P = 0.002; FZ θ wave F (1, 29) =19.005, P < 0.001, and FZ α wave F (1, 29) =8.553, P = 0.007 [Figure 3]
- During intervention in writing calligraphy, the 8th week compared with the 0th week, increased significant effects were elicited on FZ δ wave F (1, 28) =8.551, P = 0.007; FZ θ wave F (1, 28) =10.150, P = 0.004, and FZ α wave F (1, 28) =7.686, P = 0.01 [Figure 4].

Comparison of control group, Guqin group, and calligraphy group

- For groups comparison on heart rate, there is a significant main effect between the calligraphy group, the Guqin group and the control group F (2, 86) = 7.419, P = 0.001; where the heart rate of the calligraphy group increased significantly higher than the Guqin group F (1, 57) = 12.291, P < 0.001

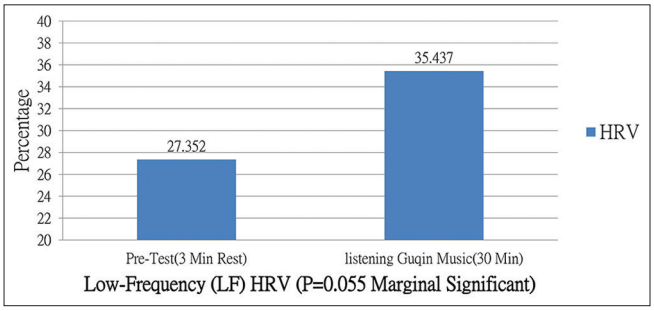

Figure 1: Low-frequency heart rate variability increased with marginal significant (Guqin group)

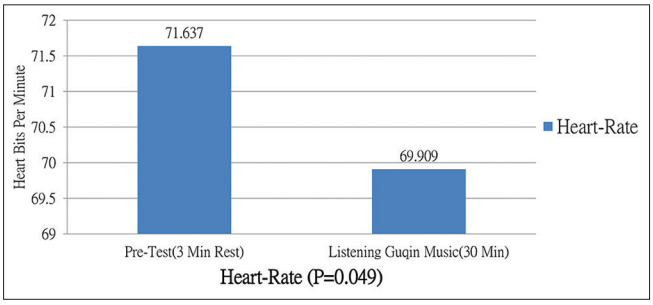

Figure 2: Heart rate decreased significantly (Guqin group)

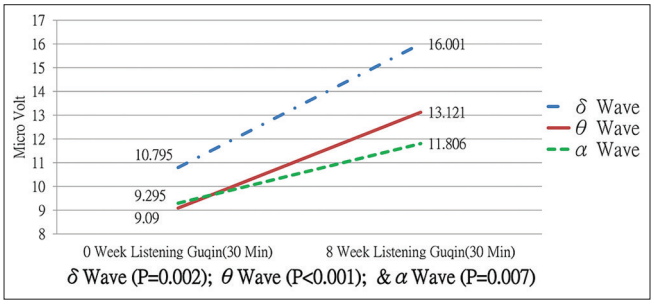

Figure 3: δ wave, θ wave, and α waves increased significantly (Guqin group)

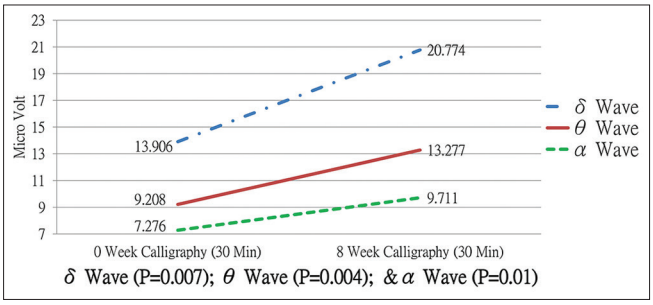

Figure 4: δ wave, θ wave, and α waves increased significantly (calligraphy group)

and also increased significantly higher than the control group F (1, 57) = 9.662, $P = 0.004$ [Figure 5]

- For groups comparison on FZ δ wave, there is a significant main effect between the calligraphy group, the Guqin group and the control group F (2, 86) = 28.948, $P < 0.001$; where the FZ δ wave of the calligraphy group increased significantly higher than the Guqin group F (1, 57) = 32.252, $P < 0.001$ and also increased significantly higher than the control group F (1, 57) = 45.262, $P < 0.001$ [Figure 6]
- For Groups comparison on FZ θ wave, there is a significant main effect between the calligraphy group, the Guqin group and the control group F (2, 86) = 4.285, $P = 0.017$; where the FZ θ wave of the calligraphy group increased significantly higher than the Guqin group F (1, 57) = 5.611, $P = 0.024$ and also increased significantly higher than the control group F (1, 57) = 7.049, $P = 0.008$ [Figure 7].

Discussion

From HRV measures for the Guqin group, we found that, during listening to Guqin music in the 4th week compared with preintervention, the LF HRV increased with marginal significance, showing a deeper heart rate coherence with positive emotion,[16] whereas the reduced heart rate demonstrated a state of relaxation.

Alpha waves occurred mostly when eyes were closed, indicating a quiet and relaxed state; thus, listening to Guqin music with increased alpha waves enhanced psychosomatic relaxation. Theta waves occurred mostly in deep relaxation, light sleep, or meditative state of consciousness; thus, listening to Guqin music results in enhanced theta waves, facilitating greater attention and cognitive processing and stimulating creativity. Delta waves mostly occurred in dreamless deep sleep and unconscious state; thus, listening to Guqin music with enhanced FZ δ wave shows a role in promoting physical and psychological recovery.[26,27]

Similarly, during writing calligraphy, FZ δ wave, FZ θ wave, and FZ α wave were also elicited with enhanced effect on brain functions. For comparing the three group effects, heart rate reduced significantly for the Guqin group than that of the calligraphy group which showed that listening to Guqin music is more effective than writing calligraphy in inducing a deeper state of relaxation and coherence.[7] It was also found that calligraphy group experienced significantly enhanced FZ θ and FZ δ waves, which shows that, compared to the Guqin music, calligraphy enhanced FZ θ waves more efficiently in promoting comprehension and stimulating creativity, whereas enhanced FZ δ waves promote better physical and psychological recovery.[15,26,27]

In a study on EEG and HRV of insomnia, results revealed that HRV were significantly higher in NREM compared with those in REM for normal participants. In EEG, the normal participants had stronger delta wave power at NREM stage, but both HRV and delta wave power showed no significant differences in insomnia cases.[23]

Another study found that, even in the absence of modifications in HRV, the link between changes in cardiac autonomic activity and delta power is altered among patients suffering from chronic primary insomnia.[24,25] The above research studies support the current study that Guqin music and calligraphy both have high efficacy on the heart and brain functions, demonstrating positive effects on primary insomnia intervention.

Conclusion

Comprehensive experiments on Guqin music and calligraphy

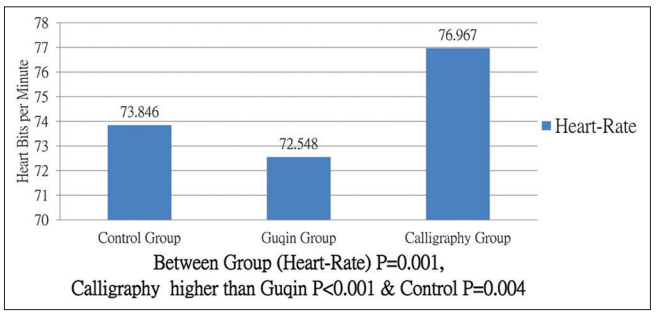

Figure 5: Heart rate increased significantly (calligraphy group to Guqin group and control group)

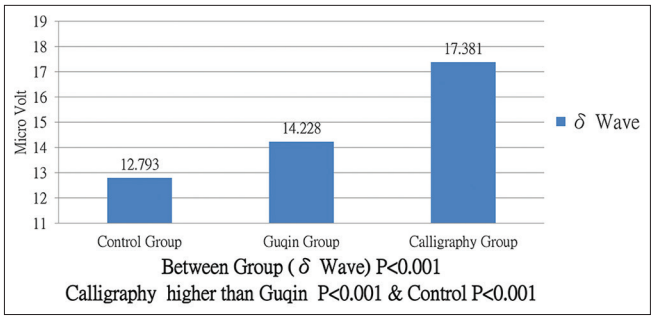

Figure 6: δ wave increased significantly (calligraphy group compared with Guqin group and control group)

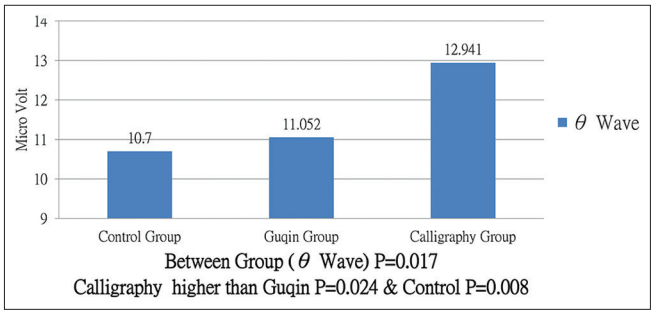

Figure 7: θ wave increased significantly (calligraphy group compared with Guqin group and control group)

have shown that Guqin music is not only a musical instrument, but also a health-enhancing training system. More importantly, while listening to the Guqin music, the HRV shows a balancing effect of the ANS. Therefore, Guqin music is effective in inducing heart rhythm coherence in the cultivation of positive psychological well-being.

Calligraphy can bring mind–body harmony and optimize brain functions, which mean that Guqin music together with calligraphy training can help promote physical and mental health in patients with insomnia. This study has shown that Guqin music and calligraphy therapy positively contribute to the clinical applications of the TCM psychology.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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