

ORIGINAL ARTICLE

China's Other Medical Systems: Recognizing Uyghur, Tibetan, and Mongolian Traditional Medicines

中国的其他医疗系统：认识维吾尔族、藏族和蒙古族传统医药

Los otros sistemas médicos de China: reconocimiento de las medicinas tradicionales uygures, tibetanas y mongolas

Elaine Yu, MS, *United States*; Hakima Amri, PhD, *United States*

ABSTRACT

Background: Traditional Chinese medicine, as it is understood and adopted by those with a growing interest in complementary and alternative practices to biomedicine, is often used as an umbrella term for traditional medical practices from regions within and bordering the People's Republic of China. However, there are multiple distinct medical traditions in China, including that of the Uyghurs, Tibetans, and Mongolians.

Objective: It is important to recognize the commonalities and differences of these unique systems of medicine practiced by the 3 different cultures among China's borders.

Methods: Through an in-depth analysis of the individual beliefs and theories that form the foundation of each system, we trace the origins of the concepts that were synthesized into the Uyghur, Tibetan, and Mongolian medical systems. Furthermore, we compare diagnostic techniques and contrast treatment modalities among the 3 systems.

Discussion: We discuss humoral theory, constitution theory, elemental theory, organ theory, and yin and yang theory. We find that imbalance is the common cause of disease or illness, but the conditions and external factors that explain such imbalances differ among the Uyghur, Tibetan, and Mongolian systems. Through these comparisons, we seek to highlight the unique beliefs, practices, and treatments utilized by these cultures.

Conclusion: The features and attributes, while not exclusive to each population, are nonetheless uniquely synthesized by each system and

thus demonstrate the distinct nature of Uyghur, Tibetan, and Mongolian medical systems.

摘要

背景：传统中药为越来越多的人所理解，并将其作为生物医学的补充和替代医疗，它通常涵盖中华人民共和国境内各地区的传统医疗实践。然而，中国有许多独特的医学传统，其中包括维吾尔族、藏族和蒙古族。

目的：了解中国境内三种不同文化践行的独特医疗体系之共性与差异非常重要。

方法：我们通过深度分析形成各个体系之基础的各种信念与理论，追踪了融入维吾尔族、藏族和蒙古族医疗体系的概念之根源。此外，我们比较了这三种体系之间的诊断技术和对照治疗模式。

讨论：我们讨论了体液学说、体质学说、元素学说、器官学说和阴阳学说。我们发现，失衡是疾病的常见病因，但在维吾尔族、藏族和蒙古族体系中，解释此类失衡的条件和外部因素不尽相同。通过这些比较，我们力求突出这些文化使用的独特信念、实践和治疗。

结论：这些特点与属性尽管并非每个人群所专属，但却独特地融入到每一个体系，因此展现出维吾尔族、藏族和蒙古族医疗体系的独特性质。

SINOPSIS

Antecedentes: La medicina tradicional china, tal y como está entendida y adoptada por un interés creciente en prácticas complementarias y alternativas a la biomedicina, se usa a menu-

do como un término paraguas para las prácticas médicas tradicionales procedentes de las regiones internas y limítrofes a la República Popular China. Sin embargo, hay muchas tradiciones médicas distintas en China, incluidas las de los uygures, tibetanos y mongolos.

Objetivo: Es importante reconocer las semejanzas y diferencias de estos sistemas únicos de medicina que practican tres culturas diferentes entre las fronteras de China.

Métodos: Mediante un análisis en profundidad de las creencias y teorías de los individuos que forman la base de cada sistema, realizamos un seguimiento de los orígenes de los conceptos que se sintetizaron en los sistemas médicos uygures, tibetanos y mongolos. Además, comparamos técnicas diagnósticas y contrastamos modalidades de tratamiento entre los tres sistemas.

Debate: Estudiamos la teoría de los humores, la teoría de la constitución, la teoría elemental, la teoría de órganos y la teoría del yin y el yang. Averiguamos que el desequilibrio es la causa más común de enfermedad o trastorno, pero las condiciones y los factores externos que explican dichos desequilibrios difieren entre los sistemas uygur, tibetano y mongol. Mediante estas comparaciones, queremos destacar las creencias, prácticas y tratamiento únicos que utilizan estas culturas.

Conclusión: Los rasgos y atributos, aunque no son exclusivos de cada población, están, sin embargo, sintetizados en cada sistema y, por consiguiente, muestran la distinta naturaleza de los sistemas médicos uygur, tibetano y mongol.

Author Affiliations

Department of Biochemistry and Cellular and Molecular Biology, Georgetown University Medical Center Washington, DC.

Correspondence

Hakima Amri, PhD
amrih@georgetown.edu
Elaine Yu, MS
ey80@georgetown.edu

Citation

Global Adv Health Med. 2016;5(1):79-86. DOI: 10.7453/gahmj.2015.116

Key Words

Uyghur medicine, Tibetan medicine, Mongolian medicine, traditional Chinese medicine, humoral medicine.

Disclosures

The authors completed the ICMJE Form for Disclosure of Potential Conflicts of Interest and had no conflicts to disclose.

INTRODUCTION

The Chinese are known to have one of the oldest and distinct medical systems in the world, spanning a written history of nearly 3000 years.¹ While the system as a whole is still practiced throughout China, traditional Chinese medicine (TCM) has been modified throughout history. Over the course of time, its theories, treatments, and medicines have spread worldwide. In the United States, the fields of complementary and alternative medicine (CAM) and integrative medicine (IM) promote TCM ideals such as holistic wellness and balance, noninvasive treatments such as acupuncture and massage therapy, and medicines such as herbal decoctions and medicinal foods. CAM and IM also recognize medical theories and practices originating from regions that are now part of the People's Republic of China. As a consequence, these are often attributed to the Chinese system of TCM. However, there are many medical traditions practiced by the diverse peoples of China that differ in theory and in practice from TCM.

This paper focuses on the 3 most prominent medical systems practiced by ethnic minorities in China living in autonomous regions—Uyghur, Tibetan, and Mongolian medicines. Autonomous regions are similar to provinces in China but hold greater legislative rights and are governed by local administrations. Xinjiang, Tibet, and Inner Mongolia are China's largest provincial-level regions and comprise most of their border between other countries (Figure 1).



Figure 1 Map of China's autonomous regions and Mongolia.

Due to its close proximity to Central Asia, Xinjiang and the early Uyghur medical tradition drew much from the Greco-Arabic practices coming out of the Eastern Mediterranean. Strong influences from the Indian Ayurvedic tradition made it to Xinjiang along the Silk Road, creating a mixture of theories and practices that are unique to Uyghur Medicine today. Central to Uyghur Medicine is humoral theory which originated from the teachings of the Greek physician Hippocrates and Roman physician Galen² and was subsequently modernized by Arab physicians

Avicenna and Razes.³ In Uyghur Medicine, the 4 humors (blood, phlegm, yellow bile, and black bile) are closely related to the 4 component elements (earth, water, air, and fire) that guide the traditional practitioner in determining the nature of disorder and prescribing the proper treatment.

South of Xinjiang lies Tibet, an isolated plateau whose people selectively drew medical knowledge from their neighbors to the north, south, and east. Greco-Arabic medicine was known as “upper Tibetan medicine” and Galeno, a follower of the teaching of Galen (129-199), served as the court physician under King Songtsan Gampo (617-650). King Gampo also had two queens, Brikuti Devi from Nepal and Wenchen Kongjo (628-680) from China.⁴ Through these relationships, Ayurveda and Chinese medical practices were brought to Tibet. The focus of Tibetan Medicine has always revolved around Buddhist theories and practices. Their ancient synthesized medical system, known as *Sowa Rigpa*, was thus intrinsically tied to Buddhism.

Inner Mongolia is found east of Xinjiang, forming most of China's northern border. For much of history, medicine in this region was not well established due to the nomadic lifestyle of most Mongolians. However, Tibetan medicine fit in well with historical shamanistic practices and later became standard practice under Manchu rule. Mongolians also adopted medical practices from the Chinese, most prominently implementing especially yin and yang theory into the heart of their diagnosis and treatment. They synthesized this and other Chinese theories with the teachings of Tibetan Buddhism to create a medical system unique to their culture.

The migration of peoples throughout China has allowed for the spread of medical knowledge and the varying influences in China's border regions have allowed them to develop unique medical traditions (Figure 2). Therefore, we argue that the medicines of these 3 regions are a cultural treasure of these minority populations and should be regarded as different from TCM. In this study, we aim to explain the commonalities and differences among of Uyghur, Tibetan, and Mongolian medical traditions and further describe their respective theories and practices. Comparisons between the 3 medical systems are drawn in order to illustrate the unique components that distinguish each tradition.

MEDICAL SYSTEMS

History has shown that medical systems constantly evolve in response to religious, political, and social forces.⁵ While many modern medical theories and practices can be traced back to ancient medical systems, the exchange of medical knowledge is difficult to trace. The medicines of today's Uyghurs, Tibetans, and Mongolians share common characteristics but are also distinct. Most importantly, they are different from TCM, which is commonly used as a general term for all medical practices throughout China.

Of the 35 ethnic medical traditions recognized by

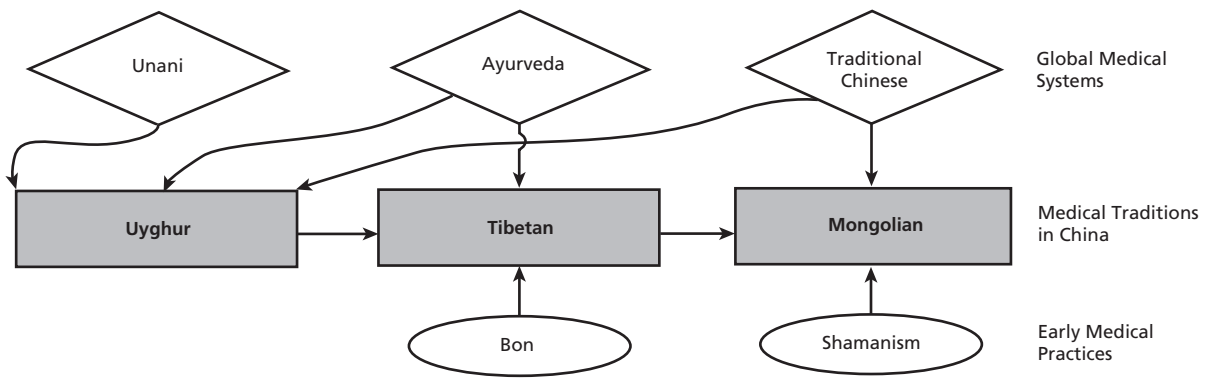


Figure 2 Transmission of medical knowledge from ancient and global medical systems to the 3 types of medicines described (arrows indicate influence).

the Chinese government, the most prominent are Uyghur, Tibetan, and Mongolian medicines. Although other hospitals may provide traditional medical care, the government recognizes 39 Uyghur, 70 Tibetan, and 51 Mongolian medical hospitals. The National Qualification Examination for Doctors certifies physicians of Uyghur, Tibetan, and Mongolian medicines separately.⁶ Each practitioner of Uyghur, Tibetan, or Mongolian medicine must be thoroughly trained in the theories, treatments, and medications unique to each system. What follows is a description of each of these 3 systems of medicine as it is practiced today.

The Uyghur Medical Model

The central concept in Uyghur Medicine is that of *mizagyi* (derived from the Arabic and Urdu word *mizaj*) or temperament. An individual’s *mizagyi* is expressed in facial appearance, skin color, body shape, personality, habits, and mental state.⁷ Temperament is determined by a balance between the 4 properties of heat, moisture, coldness, and dryness that correspond to qualities of the *tot mizaj* (4 elements) of fire, air, water, and earth (or soil). *Mizagyi* follows the idea that these elements are in a constant struggle for dominance and are affected by climate, geographical location, heredity, seasons, food, herbs, fluids, and air.⁸ The 4 temperaments can be combined into a total of 8 conditions: heat, coldness, moisture, dryness, dry heat, moist heat, moist coldness, and dry coldness. When these properties are unbalanced with some in excess and others insufficient, people fall ill.⁷

Temperament can be used to characterize each organ as well as the whole individual. The Uyghurs subscribe to the notion that each organ has its particular temperament that is related to its function (Table 1). This is the foundation of *azha* (derived from the Arabic word *A’ada*) theory or organ theory. Organs are categorized as controlling, dominant, and controlled according to their function. They are organized in a hierarchical manner based on a system of control (Figure 3). The 3 controlling organs are the brain, heart, and liver, which correspond to an individual’s vitality, spirit, and natural force. Vitality manifests as survival and repro-

ductive ability, spirit refers to control over mental and physical activities, and natural force manifests as regulation, enrichment, and control of other organs. The controlling organs directly affect the 6 dominant organs. They in turn affect the remaining controlled organs. All other organs are considered controlled organs.^{7,8} It is important to note that Unani medicine, the origin of Uyghur medicine, was the first to report the brain as a major controlling organ.³

In the same way the 4 temperaments correspond to the 4 elements (fire, air, water, and earth), Uyghur medicine’s 4 bodily fluids correspond to the 4 elements (Table 2). This is described by *teliti* theory or body fluid theory. The 4 *hilits* (fluids)—bile (or yellow bile), blood, phlegm, and atriliary (or black bile)—are created by the liver and help the body maintain a balanced state of health. Each individual is born with an inherent balance of his or her *hilits*, and this balance can be affected by food, climate, season, and medication.⁸ Any change in quantity or quality of these *hilits* will contribute to a state of disease.

Similar to Unani medicine, there exist 6 principles in Uyghur medicine that can aid an individual in maintaining health. These *sayat* (conditions) are as follows⁸:

1. people struggle in order to live
2. foods that one eats should be taken in balance of quantity and quality

Table 1 Uyghur Medicine Organs and Temperaments

Element	Temperament	Organs
Fire	Dry heat	gallbladder
Air	Moist heat	liver, heart, muscle, lung, esophagus, duodenum, small intestine
Water	Moist coldness	minimum-unit (cell), body fat, stomach, brain, kidney, spinal marrow
Earth	Dry coldness	spleen, bone, hair, nail, cartilage, ligament, membrane, large intestine, bladder
	Moderate ^a	fingers, palm, back of hand, skin

Adapted from Yu and Ren⁷ with modifications.

^a No associated element.

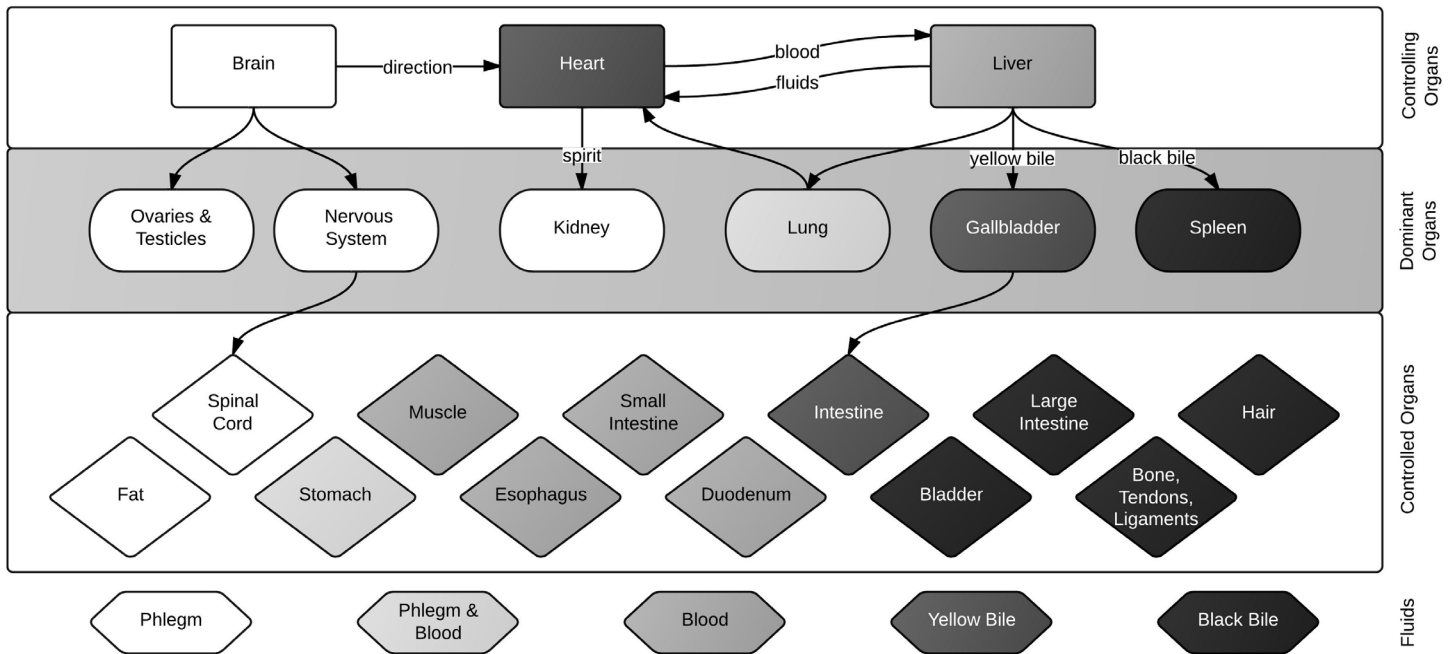


Figure 3 Uyghur medicine organ hierarchy as practiced today (arrows indicate control).

3. rest and activity must be kept in balance
4. a good mood is important to long life
5. the body must be kept clean
6. energetic characteristics of body fluid deserve special tracking after age 60

To diagnose illness, Uyghur physicians, called *beletibabets*, use their senses of smell, sound, sight, and touch to examine a patient.⁹ Once they determine the cause of illness, they will prescribe a combination of herbal medicines and treatments, such as massage, hydrotherapy, the external application of animal products, or smoking animal bones, hooves, and horns. In

some cases, the calendar is consulted to determine the best day to apply the treatment or perform a treatment ritual.¹⁰ Treatment rituals can involve prayers or readings from the Quran. While most Uyghur are Muslim and the Quran is used in many healing prayer rituals, it is important to note that Uyghur medicine is not based on Islam the way Tibetan medicine and Mongolian medicine were based on Buddhist teachings.

The Tibetan Medical Model

Balance is essential to Tibetan medicine, as a healthy individual is defined by a state of balance. Imbalances are a result of either the ignorance of the

Table 2 Uyghur Medicine Body Fluids and Functions

Element	Fluid	Temperament	Functions
Fire	Bile (yellow bile)	Dry heat	Helps peristalsis in large intestine and stomach Aids in the digestion of fat Causes growth and strength
Air	Blood	Moist heat	Stabilizes metabolism and fluid Balances kidney and lung Transfers the energy of fire Nourishes spaces Responsible for metabolism and growth
Water	Phlegm	Moist coldness	Controls bile Supplies fluid to blood Circulates products necessary for life Hampers fading and coming of death Slows down invading substances Prevents energy from being redundant and chaotic Excretes metabolites
Earth	Atrabiliary (black bile)	Dry coldness	Maintains organ form and quality Balances bile and blood Strengthens spleen, stomach, intestines, bone, muscles Regulates force and influence of phlegm Regulates the synthesis and decay of substances

Adapted from Lapham⁸ with modifications.

mind, mental afflictions, or direct influences. In order to determine the cause of disease, physicians diagnose through questioning, visual observations, and palpation. Once the disease state is known, the correct combination of diet therapy, herbal products, and external treatments can be applied to return the patient to the balanced state.

Tibetan medicine considers a psychosomatic link in the body that regulates an individual's processes, functions, and structures. According to theory, the individual is divided into the 3 *nays* (humors) of *rLung* (activity, wind), *mKhrispa* (vitality, bile), and *Badken* (stability, phlegm). Activity is regulated by the nervous system and divided into vital-conscious, respiratory-expressive, digestive-metabolic, excretory-reproductive, and motor-proprioceptive sub-activities. All of these comprise *rLung*. Vitality is a result of the functions of the digestive system and metabolism; stability results from the structure of connective tissues and the musculoskeletal system.¹¹ These 3 humors make up the 3 of the 7 total constitutions (Table 3), which determines an individual's body type and personality. Tibetans believe that the constitution is developed from the parents' constitutions as well as a past karmic blueprint.

The 3 humors that comprise the body constitutions are connected to 5 main organs that correspond with the 5 elements of earth, water, fire, air, and space (similar to 5 Ayurvedic elements). They and other organs are described in a 3-part structure with a root, fruit, and flower that work together to transport and distribute the 3 humors throughout the body (Figure

4). Root organs are responsible for absorbing nutrients and transforming them into the essential humor. Fruit organs use the humor to govern major bodily functions and flower organs are facial components that reflect the state of the other organs. This is important for diagnosis, where the face is often examined to determine the cause of disease. These are observations that are extrapolated directly from nature and the surrounding environment.¹²

Another way of thinking about the humors is in terms of 3 channels on the body. Tibetan medical theory divides the body into 3 channels—*u-ma* (middle, black), *ro-ma* (right, red), and *rkyang-ma* (left, white). These tantric channels are thought to determine the natural quality and quantity of the body's 3 humors. The father contributes the white channel, which corresponds to the lymphatic and endocrine systems that regulate *Badken* (stability). The mother contributes to the red channel, which corresponds to the blood circulation that distributes *mKrispa* (bile). Lastly, the black channel is thought to originate from past lives and karma; this channel controls the nervous system and consciousness that distributes *rLung* (wind).^{12,13}

Diseases are broken down into 3 main causes. The first, *Ringu* (distant cause), refers to the ignorance of the mind, which manifests as an ego. It is this ego that gives rise to the second cause, *nye-gyu* (near cause), or mental poisons of attachment, hatred, and close-mindedness. Attachment is the cause of wind disorders, hatred the root of fire disorders, and close-mindedness prevents the action of phlegm and leads to negative karma, which leads to suffering. These mental poisons are stimulated by unwholesome diet, behavior, and psychology to disturb the humors and produce disease. Lastly, imbalances are attributed to the third cause, *kyenl* (immediate cause), or direct threats such as climate change, strong negative emotions, unwholesome diet, and negative behavior. Imbalances can manifest in one or a combination of organs, thus affecting the humoral balance that is maintained by the flow of *rLung*, *mKrispa*, and *Badken* energies among them. In order to regain balance, the origin of the disorder must be determined.¹²

Diagnosis is accomplished in a series of 3 steps. The first step is *driwa* (questioning), which is used to determine which humor is responsible for the disorder. Next, physicians conduct *mig-gi-tawa* (visual diagnosis) by examining the tongue, ear veins, eye veins, urine, and constitution or complexion. The tongue shows what specific part of the body is afflicted by a humoral imbalance. By looking at the ear veins, a physician can determine which organ is afflicted. Through the eyes, an individual's flow of psychic energy can be isolated. Urine analysis is important to distinguish superficial from hidden diseases. The constitution is considered since people of specific constitutions are prone to certain humoral disorders. Finally, physicians use *tsa-lata-kpa* (pulse diagnosis) to find information about the state of the organs and energies.¹²

Table 3 Tibetan Medicine Body Constitutions

<i>rLung</i> (Wind)	Thin Dark, rough, dry skin Dark, small, sharp eyes Big joints Dry hair Fragile nails	Talkative Doesn't sleep much Emotional Short lifespan
<i>mKhrispa</i> (Bile)	Medium size Yellow, red skin Red, yellow, brown eyes Thin, oily hair Fast digestion Sweaty, smelly	Sharp memory Strong ego Formal, diplomatic Medium lifespan
<i>Badken</i> (Phlegm)	Large, tall Smooth, white, moist skin Green, gray, blue, large eyes Black, straight, strong hair Slow digestion	Thinker Heavy sleeper
<i>rLung-mKrispa</i> (Wind and Bile)	Cold extremities	Fearful, anxious
<i>rLung-Badken</i> (Wind and Phlegm)	Cold sweats Obesity	Confused mind
<i>mKrispa-Badken</i> (Bile and Phlegm)	Hot upper body Cold lower body	Conflicted mind
<i>rLung-mKrispa-Badken</i> (Wind, Bile and Phlegm)	Well-balanced body	Well-balanced state of mind

Adapted from Arya¹² with modifications.

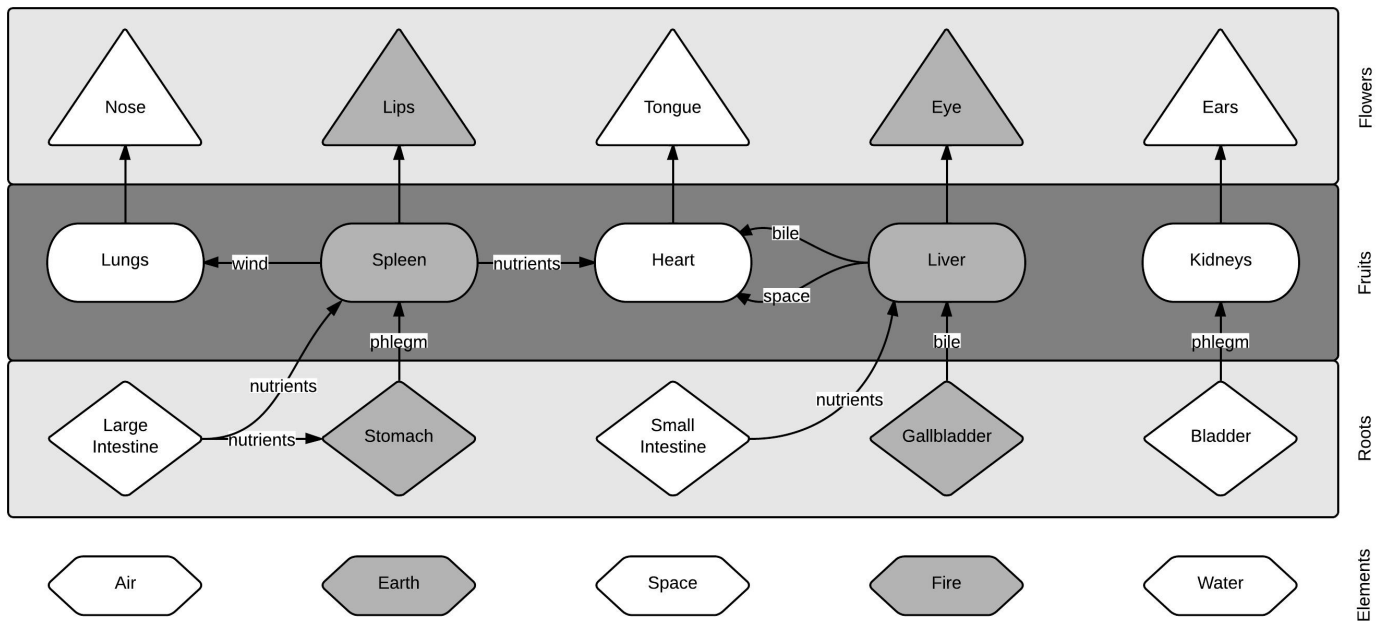


Figure 4 Tibetan medicine 3-part organ structure as practiced today (arrows indicate movement).

According to Tibetan medical theory, there is a cure for each type of disorder. Treatment usually involves a combination of diet, herbs, and external therapies. Diets restricting and recommending certain foods are prescribed according to which humor(s) are imbalanced. Foods are linked to the 5 elements which give rise to the 3 humors. Therefore, avoiding or eating certain foods is believed to help bring the humors back into balance through control of the elements. Herbal remedies are divided into 2 types—pacifying and purifying—and are categorized by taste. Formulas of multiple herbs are used to simultaneously treat disorders, restore balance, and control side effects. Pacifying therapies target specific disorders while purifying therapies generally cleanse the body and organs. Physicians will also apply external therapies such as moxibustion, massage, and medicinal baths. In some disorders, behavioral treatment is also required in the form of yoga and meditative techniques. It is the responsibility of the physician to educate the patient about adopting the proper lifestyle and mindset in order to prevent disease, especially if an individual’s constitution predisposes one to a certain type of disorder.^{11,12}

The Mongolian Medical Model

Many of the basic theories in Mongolian medicine are taken directly from Tibetan medicine. Health is defined as a balance between the 3 life-sustaining principles of *hii* (wind), *sar* (bile), and *badgan* (phlegm). In addition to their relationship to the 5 elements, these 3 principles are also given hot and cold attributes in accordance with *arga* and *bilig* (yang/hot and yin/cold) theory as practiced in TCM (Table 4). *Arga* and *bilig* play an important role in diagnosis and are often used interchangeably with hot and cold. Since most diseases are described by excessive heat or coldness, Mongolian

medicine holds that *arga* and *bilig* imbalances are the cause of illness.^{14,15}

Mongolian medicine practitioners diagnose imbalances through observation, palpation, and questioning. Observation is the first step of a diagnosis, and includes examination of the tongue, complexion, sclera, demeanor, posture, skin tone, vocal strength, and emotional state. Often, urine is collected for analysis over time in a separate laboratory, where its color, vapor, odor, and sediments are recorded at the hot, cooling, and cold time periods following collection. While such analysis can determine the hot or cold nature of disease, this is most easily found through pulse-taking.

According to Mongolian medicine, pulse-taking is considered the most sophisticated diagnostic tool and also the primary method of determining a state of disorder. Therefore, there is a very specific methodology that must be applied. Male patients should have the pulse of their left hand taken with the physician’s right hand, and female patients will have their right hand pulse taken by the practitioner’s left hand. Pulses are taken on 3 levels—skin, meat (muscle), and bone—and the quality of the pulse at each location is indicative of a different heat or cold disorder.¹⁵

When it comes to treatment, emphasis is placed on changing the patient’s diet and behavior. To supplement the changes, a physician may also prescribe medications or external therapies. Medications come in the form of decoctions, powders, pills, and ointments made from natural plant, animal, and mineral products. The taste of each ingredient serves important functions to cure the disease, support the main ingredient in its efficacy, or manage side effects of other ingredients. Usually, medicines are placed in 1 of 2 categories: relieving or evacuating. Relieving medicines such as decoctions, pills, herbal extracts, precious elements, powders,

pastes, ash, alcohol, and herbs are more common. Less commonly found oils, emetics, oral or anal purgatives, nasal inhalants, and suppositories are considered evacuating medicines. It is important that certain medicines are blessed according to the ritual of reciting mantras of the medicine Buddha.¹⁴⁻¹⁶

There are a variety of external treatments employed in Mongolian medicine. They are divided into 2 categories: mild and rough. Mild therapies that are noninvasive consist of mineral mud, herbal infusion, or medicinal baths made from animal products. Included is also the Mongolian style of moxibustion, which differs from TCM moxibustion in its use of bundled herbs heated in butter. The Mongolian practitioners apply the bundle by pressing on a different system of moxibustion points that do not correspond to TCM acupuncture points. Rough therapies in contrast are more invasive. Needle therapy in Mongolian medicine uses large, thick, heated gold or silver needles in a therapy called *khatgah emchinlee* (golden needle therapy). Lastly, *khanuur* (blood-letting) is popular in relieving excess heat disorders. Blood is drained in large quantities until colors change from dark to bright red at 19 commonly used incision points.¹⁵

In some cases, it is appropriate for medical practitioners to provide religious services such as healing rituals and astrology readings.¹⁵ However, such services are only offered at institutions that identify as both religious and medical. This is more common in Mongolia than in China. It is important to note that many practitioners of Mongolian medicine are also trained in biomedicine and do not strictly adhere to the rules of traditional practice. Often, the diagnosis and prescription follows the patient's request for either a traditional or biomedical approach to curing disease.

DISCUSSION

It is evident that the theories and practices of medicine differ between the Uyghurs, Tibetans, and Mongolians of China. While each system is distinct on its own, there is much that is shared among these and other known traditional medical systems. The transmission of medical knowledge between cultures over past millennia has greatly influenced the modern practice of medicine. This section aims to highlight the similarities and differences between the ethnic medicines of China's border minorities (Table 5).

Balance is a key principle across the 3 systems of Uyghur, Tibetan, and Mongolian medicine. In all 3, illness or disease is caused by imbalance. The 4 humors of Uyghur medicine correspond with the 4 elements and therefore the 4 fluids of yellow bile, blood, phlegm, and black bile. Both in Tibetan and Mongolian medical theory, imbalance affects the 3 humors of wind, bile, and phlegm that correspond to 5 elements. For Mongolian medicine in particular, imbalances are further divided into hot and cold (TCM yin and yang) causes that warrant different treatments. In each case, a combination of visual, verbal, and physical diagnosis is conducted in

Table 4 Three Principles in Mongolian Medicine

Principle	Elements	Attribute	Description
<i>Hii</i> (Wind)	Wind		Body movement, speech, breathing
<i>Sar</i> (Bile)	Fire	<i>Arga</i> (Yang)	Heat generation, blood production, digestion
<i>Badgan</i> (Phlegm)	Earth Water	<i>Bilig</i> (Yin)	Body fluid production, keep skin/joints supple (soft), taste, smell

Adapted from Donegan¹⁵ with modifications.
^a Wind has no Yin/Yang attribute.

order to determine the nature of the imbalance. Observation, questioning, pulse-taking, and urine analysis are common across the 3 systems.

In all 3 systems, herbal treatments based on a specific formula are prescribed to address the particular imbalances that are causing disease. Most herbs are recognized for qualities of taste that determine the healing or supporting effect. However, the plants, animals, and minerals used in each system vary according to the flora and fauna of each region. Herbal medications, while a commonly prescribed form of treatment, are used in conjunction with other modalities and therapies across Uyghur, Tibetan, and Mongolian medicine.

Dietary and lifestyle changes are common prescriptions in all 3 medical systems. However, the historical influences are most prevalent in the variety of external treatments offered in each region. Uyghur medicine relies more heavily on animal parts for their use in cupping and smoking as treatment, while Tibetan medicine focuses on behavioral treatments that affect the mind-body connection. Mongolian medicine employs the widest range of physical therapies from Mongolian mud baths to Tibetan golden needle therapy to Chinese massage.

While Mongolian medicine practitioners are the only ones allowed to administer religious healing practices, both traditional Uyghur and Tibetan physicians are arguably more religious than the biomedically-trained Mongolian medicine physicians. Most Uyghur doctors are Muslim and serve the primarily Muslim Uyghur population. Tibetan Medicine practitioners are encouraged to seek a career in medicine, as it is favored for its intrinsic practice of Buddhist dharmas. However, both Uyghur medicine and Tibetan medicine are careful to identify as scientific medical systems that are separate from religion in accordance with current government policies, while Mongolian medicine is subject to no such restriction, as it is still strongly rooted in shamanistic traditions and Tibetan Buddhist teachings.

CONCLUSION

In analyzing the individual beliefs and practices of the Uyghurs, Tibetans, and Mongolians, it is clear that these systems are uniquely different. While all emphasize the importance of balance in health maintenance and utilize natural resources from the surrounding envi-

Table 5 Direct Comparison of Uyghur, Tibetan, and Mongolian Medicine (Empty boxes have no attributes)

	Uyghur Medicine	Tibetan Medicine	Mongolian Medicine
Health	Balance 4 properties (humors)	Balance 3 humors	Balance 3 humors and hot/cold
Elements	Fire, air, water, earth	Earth, water, fire, air, space	
Humors	Heat, moisture, dryness, coldness	Wind, bile, phlegm	
Constitutions	Heat, coldness, moisture, dryness, dry heat, moist heat, moist coldness, and dry coldness	Wind, bile, phlegm, wind-bile, wind-phlegm, bile-phlegm, wind-bile-phlegm	
Causes of disease	Food, climate, season, medication, condition	Constitution, ignorance/ego, attachment, hatred, close-mindedness, climate, emotions, diet, behavior	Diet, behavior, climate, external factors
Diagnosis	Smell Sound Sight Touch	Questioning Observation Pulse-taking	Observation Palpation Questioning
Main organs	Brain, heart, liver	Heart, liver, kidney, spleen lungs	
Secondary organs	Kidney, lung, gallbladder, spleen, nervous system, ovaries, and testicles	Bladder, gallbladder, stomach, small intestine, large intestine	
Tertiary organs	Fat, spinal cord, stomach, muscle, esophagus, small intestine, duodenum, intestine, bladder, large intestine, bone, tendons, ligaments, hair	Tongue, lips, eyes, nose, ears	
Herbal medicine		Pacifying and purifying	Leading and supporting ingredients
Behavioral therapy	Prayer	Yoga, meditation, diet, lifestyle	Diet, lifestyle
Unique external treatments	Animal excrement, smoking animal bones	Moxibustion, massage, medicinal baths, diet therapy, herbal products	Mud baths, moxibustion, blood-letting, bone-setting
Center of learning		<i>Mentsikhang</i>	<i>Manba Datsan</i>
Important figure(s)		Yuthok Yonten Gonpo	Hu Sihui
Religious connection	Islam	Buddhism	Buddhism and shamanism

ronment in treating disease, they each employ theories and modalities exclusive to their own medical traditions. Similar diagnostic and therapeutic techniques affirm the transmission of medical knowledge among these and likely other cultures. Trademark beliefs and practices mark the separation of each into its own medical system. Therefore, it is valuable for scholars of Asian cultures and patrons of traditional medical therapies to acknowledge the distinction between these 3 medical systems and that of traditional Chinese medicine.

REFERENCES

- Sivin N. Huang ti nei ching 黄帝内经. In: Loewe M, editor. Early Chinese texts: a bibliographical guide. Berkeley and Los Angeles: University of California Press; 1993:196-215.
- Subbarayappa BV. The roots of ancient medicine: an historical outline. J Biosci. 2001 June;26(2):135-44.
- Abu-Asab M, Amri H, Micozzi MS. Avicenna's medicine: a new translation of the 11th-century canon with practical applications for integrative health care. 1st ed. Rochester, VT: Healing Arts Press; 2013.
- Aria PY. Short history of Tibetan medicine. 2009 July:1-12.
- Alter JS. Asian medicine and globalization. Philadelphia: Pennsylvania University Press; 2005.
- China's ethnic policy and common prosperity and development of all ethnic groups. 2012; http://english.gov.cn/official/2009-09/27/content_1427989.htm. Accessed December 18, 2013.
- Yu Y, Ren K. Medicine and health care among Chinese ethnic minorities. Beijing: China Intercontinental; 2006.
- Lapham JWC. Tot Mizaj: four characters in Uyghur traditions of health, medicine, and longevity. Interviewing Hotan county elders in Xinjiang, P.R.C. with Beijing educated Uyghurs. 2005 June:1-70.
- Fujiyama S. Pluralistic medical system in Xinjiang and the Uyghur ethnic

identity:1-19.

- Karoly L. A seventeenth-century Chaghatay treatise on medicine. *Comm de Hist Artis Med* 2006:194-5.
- Loizzo JJ, Blackhall LJ. Traditional alternatives as complementary sciences: the case of Indo-Tibetan medicine. *J Altern Complement Med*. 1998;4(3):311-9.
- Aria PY. Tibetan medicine. 2012 March:1-52.
- Adams V. The Sacred in the scientific: ambiguous practices of science in Tibetan medicine. *Cultu Anthropol*. 2001 Nov;16(4):542-75.
- Kletter C, Glasl S, Thalhammer T, Narantuya S. Traditional Mongolian medicine—a potential for drug discovery. *Sci Pharm*. 2008;76:49-63.
- Donegan J. An observational study of patients, practitioners and practice in clinical settings offering traditional Mongolian medicine in Mongolia. Northern College of Acupuncture. 1-78.
- Arura Tibetan medicine. 2014; <http://www.aruratibetanmedicine.com/Help.asp>. Accessed December 24, 2015.