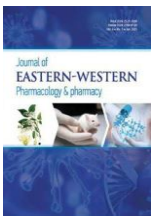

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Historical background and accumulated experiences of Mongolian medicine in bone-setting therapy

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KEYWORDS

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ABSTRACT: Based on traditional Mongolian medicine and modern scientific theory, Mongolian bone art or bone-setting therapy and massage therapy are clinical disciplines of traditional medicine that explain and study the methods, principles, and rules for preventing and treating diseases through the manual techniques of Mongolian bone-setting therapy and massage therapy, with the therapeutic means as their distinctive feature. Therefore, the topic has been selected to address the need to clarify the historical development of massage therapy, particularly bone-setting therapy, based on source literature and rare historical facts, and to further develop the history of traditional medicine. This study examines the historical facts and accumulated experiences of Mongolian medicine in bone-setting therapy from the 13th to the early 21st century. The following research methods were employed: source analysis, as well as analytical and synthetic approaches, along with the checklist method. The method of bone-setting therapy has been validated in practice over centuries through successive stages of social development. In the 13th century, it developed from a traditional bone-setter practice into a more sophisticated, evidence-based procedure during the Great Mongol Empire. From the 13th century to the 17th century, Mongolian bone-setting therapy was widely practiced among nomads, and from the 17th century onward, it became an independent branch under the name of coban within the state ministry of the Manchu Qing dynasty (1636–1912). Subsequently, since the early 20th century, successive generations of renowned bone-setting practitioners, particularly Professor BAO Jin Shan, have further advanced the understanding of bone-setting knowledge and practice, refining it in accordance with modern medical diagnostic methods.

INTRODUCTION

A large number of ethnicities have inhabited Mongolia since prehistoric times. Most of these people were nomads who, from time to time, formed confederations that rose to prominence. The first of these, the Hunnu, were brought together to form a confederation by Modun Shanyu in 209 BC. Starting from the Hunnu, Ukhuvan, Xiangbei, Nirun, Tureg, Uyghur, and Khitan, who resided in the Mongolian territory before the European system of chronology, and in the XII-XIII centuries of the European system of chronology, many of the tribes in the north were united and occupied the area.[1] Through integration into a comprehensive system, they have adapted and incorporated each of the advantages and characteristics of each tradition, thereby developing the national

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heritage. Within this cultural context, massage therapy, the pillar of their medical art, occupies a significant position.

Mongolian bone-setting therapy and massage therapy are two of the important branches of traditional Mongolian medicine and are classified as external therapeutic practices. Guided by the fundamental principles of traditional Mongolian medicine, standard manual techniques of Mongolian bone-setting therapy and massage therapy are applied to specific acupoints or regions of the human body to achieve the prevention and treatment of diseases.[2] Grounded in both traditional Mongolian medicine and modern scientific theory, these therapies are clinical subjects of traditional medicine for explaining and examining the methods, rules, and principles underlying disease prevention and treatment through using the manual therapeutic interventions of Mongolian bone-setting therapy and massage therapy, with such techniques serving as their distinctive feature.

Therefore, this topic has been selected in response to the need to examine the historical evolution of massage therapy, particularly bone-setting therapy, through source literature and rare historical evidence, and to contribute to the broader development of traditional medical history.

Objective

This study examines the historical facts and accumulated experiences of Mongolian medicine in bone-setting therapy from the 13th to the early 21st century.

MATERIALS AND METHODS

1/ Source study method.

The source-study method includes the examination of books, literary works, sources, and papers. A historical analysis was conducted from the 13th to the early 21st century, taking into account the periods in which the sources were written, beginning with the earliest materials. This approach enabled a comparative assessment of distinctive, innovative, and original ideas in terms of both content and conceptual perspective, in relation to other medical works, in line with the research objectives.

2/ Analysis and synthesis.

Analysis and synthesis are complementary scientific methods that function in close interrelation. Each synthesis is built upon the results of a prior analysis, and each analysis requires subsequent synthesis to verify and refine its findings. In this context, Mongolian medical bone-setting therapy is divided into three periods: from the 13th to the 17th century, from the 17th to the early 20th century, and from the early 20th century to the early 21st century. The method of analysis and synthesis was applied to examine the characteristics of bone-setting therapy within each of these periods.

3/ Checklist method

The checklist method was used to compile and organize bone-setting therapies and other health-related treatment approaches. This method facilitates the classification and diversification of information, as well as systematic data collection. It is also suitable for the initial stage of evaluation. Furthermore, it supports the planning of activities and allows for convenient data entry into a database, thereby serving as a foundation for the development of a bone-setting therapy database.

RESULTS

1. From the 13th to the 17th century

From 1206 to 1577, bone setting, injury treatment, and wound care were common healing practices. Due to the necessity of treating injuries sustained in warfare as well as those arising from daily physical activities, such as horse catching, horse breaking, and wrestling, these healing methods gradually developed over time, incorporating new techniques and procedures. As a result, they possess a long and rich historical tradition. Medical practice during this period was significantly influenced by military events. Main historical sources relevant to traditional medicine or the 13th century include the Secret History of Mongolia, the Complete Collection of Histories, Altan Tobči, Erdeni-yin Tobči, Bolor Erikhe, History of Yuan Dynasty, as well as records left by foreign visitors and couriers of that time, such as Giovanni Del Plano Carpine[1], William de Rubric[2], and Marco Polo[3].

Based on these sources, it can be inferred that medical assistance in the 13th century initially emerged in the form of military medical assistance during the long-time conquests of Chinggis Khaan and his successors. In the 13th century, a wound caused by an arrowhead was treated by scorching the surface

[1] Giovanni da Pian del Carpine (1180-1252) was one of the first Europeans to enter the court of the Great Khan of the Mongolian Empire. He is the author of the earliest important Western account of northern and central Asia, Russia, and other regions of the Tatar dominion.

[2] Franciscan friar Guillaume de Roubrock arrives at Karakorum on a mission from France's Louis IX and finds a silver fountain built for the Munkhe Khaan.

[3] Marco Polo (1254–1324) was a Venetian trader and explorer who gained fame for his worldwide travels, recorded in the book Il Milione ("The Million" or The Travels of Marco Polo), also known as Oriente Poliano (the Orient of the Polos) and the Description of the World. Polo, together with his father Niccolò and his uncle Maffeo, was one of the first Westerners to travel the Silk Road to China and visit the Great Khan of the Mongol Empire, Khublai Khan (grandson of Chinggis Khan).

of the injury. For example, in the early 13th century, during a battle, Ugudei Khan was struck in the neck by an arrow. One of his knights, Borokhul, removed the blood clot from the wound by suction and carried him on horseback. Upon seeing them, Chinggis Khaan was deeply distressed, ordered a fire to be prepared, and had the wound cauterized. He then gave him something to drink and waited to fight their enemies.[3]

In the 13th century, an Italian tourist, Giovanni Del Plano Carpine, wrote that "when they were raided by the Tatars and struck by an arrow, they would ride away like the wind, applying certain herbs to their wounds." In this way, the Mongolians staunched bleeding and prevented infection through cauterization. They were also familiar with the healing properties of various herbs and used them to staunch bleeding.

Nowadays, the Mongolians use Euphorbia humifusa Willd (Malgain zalaa uvs in Mongolian) to staunch bleeding in remote areas with limited access to medical care. Juice extracted from Euphorbia humifusa Willd is applied to wounds, and its adhesive properties promote coagulation and help close minor injuries.[4] According to "Brief Practical Guide to Healthy Diet", an extract prepared from black cow's bone marrow is also effective in treating bone fractures. In addition, various medicinal substances have been used for injury treatment.[5]

Historical records describe several such practices. For instance, when Khubilai Khan fell from his horse and injured his elbow, he remained inactive for over 100 days.[6] In another case, a severely wounded Jan Shin, struck by 18 arrows, one penetrating his abdomen, Khubilai Khan ordered to give him crocodile's blood to drink. As a result, Jan Shin recovered. Furthermore, we came across instances of curing injuries with dairy products in the Secret History of Mongolia.

In one such account, after sustaining a neck wound, Chinggis Khaan traveled with difficulty and camped on a battlefield at sunset. One of Chinggis' knights, Zelme, tended to him by sucking blood from the wound until midnight. He cared for the unconscious Khaan by himself, not entrusting others. When midnight passed, Chinggis Khaan regained consciousness and said, "The blood has dried, and I am thirsty." In response, Zelme took off his hat, boots, and deel (dressing-gown), leaving only underclothing, and entered the enemy camp. He searched for eseg (mare's milk) on carriages of commoners who camped behind the military camp but was unable to find any eseg, as the refugees had not milked their mares. He therefore stole a leather sack of tarag (a drink made by fermenting the milk of sheep, goat, or cow) and returned to his camp unnoticed, as if blessed by God. He then mixed the tarag with water and gave it to Chinggis Khaan. After drinking, Chinggis Khaan reported feeling relief. By that time, dawn had broken.[7]

One of the notable achievements of Traditional Mongolian Medicine of that time was the treatment of wounds with the help of surgical means. Initially, the Mongolians gained much knowledge of animal anatomy by examining joints and internal organs during animal slaughter. Based on this understanding, they were able to set bones and treat injuries. Their knowledge was further expanded through the performance of autopsies on human bodies.

In 1263, during one of the battles between the Mongolians and the South Sun nation troops, which the Sun lost, Zuukhar was struck by 3 arrows, one of which became lodged in his left shoulder and could not be removed. Hyavtsag opened the wound with the assistance of two condemned individuals (these people were from the Sun nation) and examined if the arrow could possibly be removed. Eventually, the arrow was successfully removed.[8] This example suggests that Mongolians of that time employed both surgical intervention and anatomical knowledge, including autopsy, alongside other forms of medical treatment.

2. From the 17th to the early 20th century

From the 16th century onward, there was a notable increase in the number of scholars and monks of high rank writing and translating texts into Mongolian, Tibetan, Manchu, and other languages. At the same time, Mongolian doctors, especially bone-setters and bone-setting practitioners, grew in number, and their treatment methods gained widespread recognition. As a result, between the 17th and the early 20th century, bone-setting therapy, especially in the Khorchin region of Inner Mongolia, produced numerous skilled bone-setters and bone-setting practitioners. A prominent example of them is the ancestor of Professor BAO Jin Shan.

In the 17th century, a new role related to equine care emerged within the Ministry of Imperial Stables, Herds, and Carriages, known as Menggu yisheng (Mongolian doctor). The Manchu term for this position, coban, refers to a stick or rod used to pry things open, and is a term that has resonances to herding across a larger Asian context. The word coban embodies a range of meanings, including the act of lifting and prying something open, a long stick, a shepherd, a horse keeper, and a Mongolian doctor.[9] More specifically, the treatment methods of the coban involved manipulating bones by lifting and repositioning them to restore proper alignment.

The Mongolian art of bone setting, referred to as "bone-setting therapy" in Mongolia, is a significant

and intriguing field that developed primarily during the Manchu dynasty (1644–1911). Prominent practitioners were Tsorj-Mergen, Nara-Abai, and HeruIshinga, among others. Bone-setters (Bariachi) employed a variety of methods, such as the use of horn cupping devices (made of horn) for treating fractures, herbal compresses, and, when necessary, surgical interventions using ice as a form of local anesthesia. During this period, the Aduuchiin Minister convened 30 specialists in the field and established a dedicated bone-setting therapy hospital.

Bone-setting therapy constitutes an independent branch of Mongolian medicine. Bone-setters were typically local individuals who maintained traditional beliefs in Shamanism and were largely uninfluenced by Buddhism.[10] In cases of fractures or dislocations, the Mongols would seek treatment directly from these bone-setters, who generally did not use medicines or surgical instruments. Treatment was performed manually, with the practitioner manipulating the affected limb through massage and or giving it a twist or two. Patients typically experienced minimal pain and were advised to rest following the procedure. These practitioners were lay individuals without formal education and did not rely on charms or ritual practices. Instead, they treated bone injuries effectively through manual skill, with recovery often occurring relatively quickly, even in more serious cases. Their knowledge was passed down through generations, and their skills were often regarded as innate. Their hands served as the primary instruments of treatment, with bone-setting performed through highly sensitive manual techniques. Such practitioners commonly came from families of traditional bone-setters, where skills were transmitted from parents to children. In some cases, they also trained disciples, thereby contributing to the continued development and professionalization of the practice.

3. From the early 20th century to the early 21st century

The renowned bone-setter (Bariachi) BAO Jin Shan, professor, who has inherited and transmitted the treatment methods of bone injuries and fractures of this period, was included in the study as the main representative example. He is currently 87 years old and represents the fourth-generation bone-setter of his lineage (Figure 1).

Figure 1. *Professor BAO Jin Shan*

Professor BAO Jin Shan was born in 1939 in Khorchin, China. He is a medical doctor, professor, and master's supervisor at Inner Mongolia University for Nationalities. He is also a member of the Mongolian Academy of Medical Sciences and a recognized successor of intangible cultural heritage, as well as a renowned physician with more than 60 years of experience in the treatment of bone injuries and fractures. He has achieved great success in integrating the treatment methods for bone injuries into modern medical practice in accordance with Mongolian medical theories and approaches to repairing bone injuries and fractures. For example, he introduced the concepts of "Three Diagnosis", "Six Principles", and "Nine Connections". These include:

- The "Three Diagnoses":

1. Visual observation and mental reflection,
2. Hand-feeling for bone fractures,
3. Methods for diagnosing joint dislocations and muscle injuries.

- The "Six Principles":

1. Holding the fracture with the hand,
2. Stabilizing the fracture with a small wooden splint,
3. Massage with rubbing alcohol,
4. Herbal medicine and traditional accessory therapy,
5. Food and drink,
6. Restoration of functional recovery of the treated organ.

- The "Nine connections":

1. Connection between intelligence and form or image,
2. Connection between wind and internal force,
3. Connection between internal cause and external condition,
4. Connection between stabilization and function restoration,

5. Connection between doctor and patient,
6. Connection between treatment and nursing,
7. Connection between three diagnoses and physical examination,
8. Connection between part and whole,
9. Connection between alcohol spraying and manual therapy.

Professor BAO Jin Shan uses unique tools that have been passed down from ancient times in his treatment. These include sheepskin and cowhide splints, and deer bone splints (Figures 2,3).

Figure 2. *Splints made of sheepskin and cowhide*

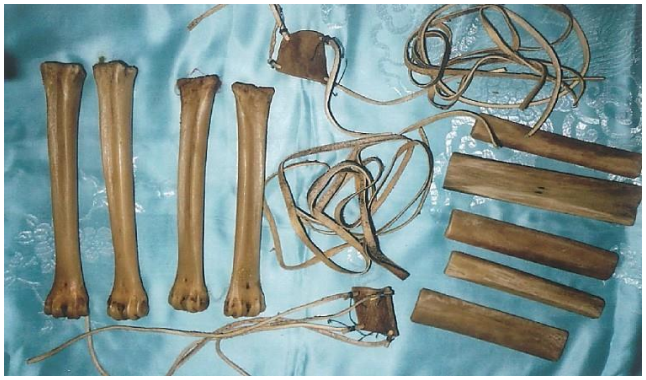

Figure 3. *Deer bone Splints*

He has successfully applied the concepts of “Three Diagnosis”, “Six Principles”, and “Nine Connections” that he developed in practice. This method has since gained widespread acceptance and is now used by many doctors (Figure 4).

Black alcohol is commonly used for alcohol spray therapy. After treatment, the body is massaged back to its normal condition and bandaged. This ancient method is successfully combined with modern medical diagnosis and treatment. Professor BAO Jin Shan summarized his experience in his book “Orthopedic Study of Mongolian Medicine”, contributing to the enrichment of knowledge of bone fracture and trauma treatment (Figures 5,6,7).

Figure 4. *Professor BAO Jin Shan performing alcohol spray treatment*

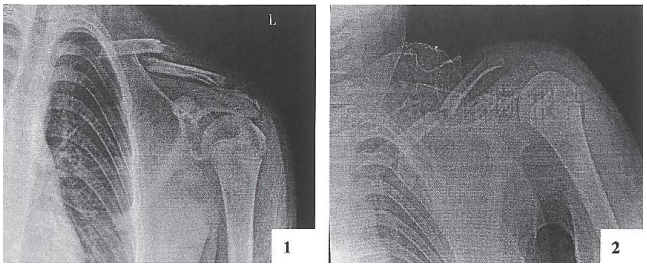

Figure 5. *1/ Position after fracture of the collarbone*
2/ Fracture repaired and normalized

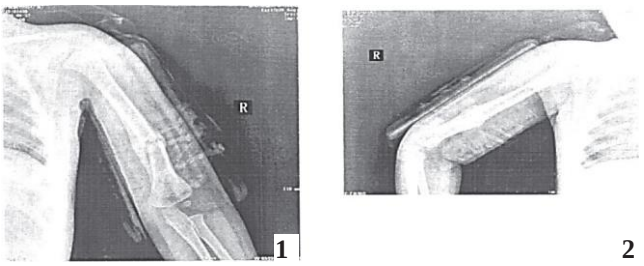

Figure 6. *1/ Fracture position of the humerus*
2/ After bone-setting therapy for the fractured humerus

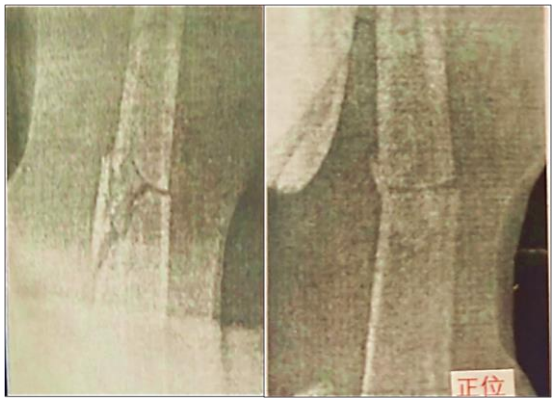

Figure 7. *1/ Fracture position of the femoral shaft*
2/ After bone-setting therapy for the femoral shaft fracture

Professor BAO Jin Shan learned the art of bone-setting therapy from his senior practitioners and has accumulated extensive experience from them. He has also passed on this knowledge to future generations of traditional bone-setting therapy practitioners.

DISCUSSION

As one of the birthplaces of ancient civilization, Mongolia represents one of the earliest regions where medical knowledge was systematically developed. Early societies were able to identify treatments for illnesses arising from their specific lifestyles and transmit this knowledge across generations and to other regions. Among these were moxibustion, cupping (using horn), venesection, and bone-setting practices.[11] Historical records from the 14th century also note the use of silver-cup massage for therapeutic purposes. Over time, massage therapy evolved into a traditional method involving ointments and manual manipulation for treating muscular and soft-tissue conditions. Although some of the treatments mentioned above are not included in these written sources, they remain as public knowledge. In some books, it is briefly noted, but otherwise, the treatment is mentioned infrequently.

The Mongolian art of bone setting, called 'bone-setting therapy ' in Mongolia, is a particularly notable field that developed significantly during the Manchu Qing dynasty. The eminent practitioners were Tsorj-Mergen, Nara-Abai, HeruIshinga, and others who contributed to its refinement.[12] Bone-setters used many interesting methods, such as applying cupping glasses (made of horn) to treat broken bones or an herbal compress, or, if necessary, using surgery with the aid of ice as a local anesthetic.

Bone-setting therapy is a completely independent branch of Mongolian medicine. For an accidental bone fracture or dislocation, the Mongols typically sought assistance from the bone-setter, who generally did not use medicines or surgical instruments. Treatment was carried out through manual manipulation, including holding the affected limb, massage, and controlled adjustment to restore alignment. Patients were usually advised to rest following treatment.

These practitioners were predominantly lay individuals without formal medical education. Their knowledge was primarily transmitted through family lineages or apprenticeship systems, although some also trained disciples contributing to the continuity and gradual professionalization of the practice. Treatment relied on refined tactile sensitivity and manual skill rather than written medical doctrine or ritual practice. The most prominent representative of this tradition of bone-setting therapy is Professor BAO Jin Shan.

CONCLUSION

Bone-setting therapy has been validated in practice over centuries through successive stages of social development. In the 13th century, it evolved from a traditional bone-setter method to a sophisticated, evidence-based procedure during the Great Mongol Empire. From the 13th century to the 17th century, Mongolian bone-setting therapy was widely practiced among nomads. By the 17th century, it developed into an independent branch under the name of coban in the state ministry of the Manchu Qing dynasty (1636–1912). Since the early 20th century, successive generations of renowned bone-setting therapy practitioners, especially Professor BAO Jin Shan, have further strengthened their knowledge of bone-setters and bone-setting therapy, refining it in line with modern medical diagnostic methods. As a result, bone-setting therapy has been progressively systematized and aligned with contemporary clinical standards, while maintaining its traditional foundations.

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