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Research Progress on the Early Prevention and Control of Myopia in Children Using Mongolian Medical Moxibustion Therapy

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Abstract: Mongolian medicine posits that disruptions to the natural balance of the three roots and seven elements within the human body may lead to ocular disorders, vision impairment, and ultimately myopia. China's children and adolescents not only exhibit high myopia rates but also face increasingly prominent issues of younger onset and severe progression, which critically impact the nation's future and require urgent attention. Myopia prevention constitutes a systematic project. Traditional Mongolian moxibustion therapy works by applying heat stimulation to specific acupoints to warm meridians, harmonize Qi-blood circulation, regulate elemental balance, thereby enhancing immunity for disease prevention. This holistic approach features non-invasive application with minimal side effects. However, current interventions in myopia management through this method still face challenges including inconsistent operational protocols and insufficiently systematic collaborative research. This paper reviews recent advancements in early intervention using Mongolian moxibustion therapy for myopia, providing insights to optimize myopia prevention strategies.

Keywords: Mongolian medical moxibustion therapy; Childhood myopia; Collaborative application

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1. Introduction

Childhood myopia has become a global public health issue [1]. According to the latest data from the World Health Organization, the prevalence of myopia among adolescents in China ranks first worldwide, showing a trend of occurring at younger ages and becoming more severe [2]. The existing intervention methods primarily include optical correction, pharmacological control, and behavioral interventions. However, these methods have limitations such as poor compliance and unstable long-term effects, making them unsatisfactory for controlling

the progression of myopia [3]. Mongolian medical moxibustion therapy offers benefits such as regulating bodily constitution, strengthening the body, enhancing resistance, alleviating pain, reducing swelling, promoting gastric fire, and clarifying the mind. It also boasts advantages of safety, cost-effectiveness, proven efficacy, and the absence of side effects [4]. From the perspective of Mongolian medicine, myopia, characterized by blurred vision and decreased visual acuity, is classified as "Murun" (dim vision) and "Nengxiao syndrome." Its etiology is closely linked to the stagnation of "Heyi" (Qi), the excessive activity of "Xila" (fire), and the stagnation of "Badagan" (cold). The warm stimulation of moxibustion therapy on fixed parts or acupoints of the human body can adjust the balance of the three energies (Heyi, Xila, and Badagan), restore the regulatory function of the ocular muscles, and its mechanism of action involves improving microcirculation around the eyes, relieving spasms of the ciliary muscles, and enhancing optic nerve nutrition at several levels. Studies by Deng Haiping [5,6] and others have demonstrated that moxibustion has significant efficacy in slowing down the progression of myopia and enhancing accommodative sensitivity. The following discussion will focus on the prevention and control of myopia from the perspectives of Mongolian and Western medicine.

2. Mongolian medicine's understanding of myopia

2.1. Myopia and Mongolian medical theory

According to Mongolian medical theory, when the normal balance of the "three roots and seven elements" within the human body is disrupted for some reason, it may lead to ocular lesions and impaired vision, ultimately resulting in myopia [7]. As recorded in "Fundamentals of Mongolian Medicine," after conception and fetal formation, three fundamental channels branch out from the fetal umbilical cord. These include the positive channel associated with the fire element, which circulates blood; the negative channel associated with the water element; and the central channel, which combines both Yin and Yang and circulates the vital energy [8]. The positive channel ascends along the right side of the body's midline from the embryonic umbilical cord, generating the liver, transporting nutrient-rich channels, and the vital channel, extending to the top of the head and down to the fetal genital area. All embryonic blood channels originate and branch from the positive channel, which nourishes the "Hila" (a vital essence in Mongolian medicine). The hila rely on the positive channel for its sustenance and is located in the middle of the fetus, providing thermal energy and facilitating the biochemical processes of the seven elements. From the perspective of the Five Elements theory, the fire element generates the fetal body temperature, skin color, and eyes, thereby giving rise to vision [9]. The liver is considered the "exalted organ of body temperature dominated by the fire element's essence." It is located in the general area of the hila and serves as the pathway for pathological Hila to travel (affecting the gallbladder, eyes, blood, and sweat). The eyes are the "external orifices" of the liver, and the liver and eyes are physiologically interconnected. The essence substances of the liver can ascend to the eyes, thereby maintaining their visual function and other vital functions. The pathogenic factors of myopia can generally be categorized into internal conditions and external pathogenic factors. In the normal state of the human body, the "three humors and seven elements" are not isolated but closely connected, mutually dependent, promoting, influencing, and complementary to each other, jointly maintaining the normal physiological functions of the human body and keeping a relative balance of unity of opposites [10]. Exogenous pathogenic factors mainly involve the "four pathogenic factors," including dietary habits, daily behaviors, climate changes, and other factors (sudden factors) [11]. Myopia is closely related to diet. Dietary habits not only trigger myopia but may also accelerate its deterioration. For example, acidic foods such as rotten meat, onions, garlic, and alcohol

can cause an excess of “Hi” (one of the humors in traditional Mongolian medicine) and affect the liver, leading to eye diseases. Smoke, exposure to wind and snow, and physical and mental fatigue can easily cause eye fatigue, potentially resulting in blurred vision or difficulty seeing clearly. Sudden changes in climate, causing the “three humors and seven elements” to lose their relative balance and enter a state of imbalance, can affect the liver and lead to eye diseases. Additionally, eye diseases can also be caused by trauma and systemic diseases.

2.2. Mongolian medicine moxibustion therapy

Mongolian medicine moxibustion therapy is based on the theoretical foundation of the “three humors and seven elements” theory. It holds that the human body’s physiological functions are primarily governed by the three humors of “Hüyin” (air), “Xila” (fire), and “Badagan” (cold), with the seven elements of “blood, flesh, fat, bone, marrow, essence, and red and white essential substances” forming the material basis. Moxibustion therapy applies warm stimulation to specific parts or acupoints on the human body, directly acting on the balance of the “three humors” (in Mongolian medicine, these are “Hiyi,” “Xila,” and “Badagan,” representing wind, bile, and phlegm, respectively). For individuals with excessive “Hiyi” (characterized by Qi stagnation and blood stasis), moxibustion warms and unblocks the meridians to promote the circulation of Qi and blood. For those with excessive “Xila” (marked by obvious heat symptoms), it harmonizes the fiery nature through moderate warmth. For individuals with the stagnant nature of “Badagan” (cold constitution), it disperses cold pathogens with heat, thereby restoring the dynamic balance of the three humors. Moxibustion therapy can be divided into two types: direct moxibustion and indirect moxibustion. Direct moxibustion is further categorized into scar-forming moxibustion and non-scar-forming moxibustion. Indirect moxibustion includes three types: ginger-partitioned moxibustion, garlic-partitioned moxibustion, and salt-partitioned moxibustion [10]. The theory of Qi and blood circulation further elucidates its mechanism, moxibustion therapy can stimulate meridian Qi activity, promoting the coordinated functioning of the “white channels” (neurovascular system) and “black channels” (circulatory system), thereby enhancing the nutritional supply to the tissues around the eyes. Studies have demonstrated that Mongolian moxibustion therapy possesses the effects of regulating functional disorders of Hiyi and Badagan, improving Qi and blood circulation, dispersing cold and relieving pain, as well as regulating the nervous, endocrine, and immune systems [11,12].

The warm stimulation of specific acupoints by Mongolian moxibustion therapy can adjust the balance of the three humors and restore the regulatory function of the ocular muscles. Its mechanism of action involves improving the microcirculation around the eyes, relieving ciliary muscle spasm, and enhancing neural nutrition at several levels. Thermal stimulation can significantly increase the skin temperature around the eyes, promote local blood flow, improve the nutritional supply to the ciliary muscle, and alleviate spasms caused by ischemia. Research indicates that medicinal moxibustion possesses various pharmacological activities, including anti-inflammatory, immunomodulatory, hormonal regulation, antioxidant, lipid-regulating, blood glucose-regulating, wound healing acceleration, and pain relief effects [13,14].

2.3. Synergistic effects of Mongolian moxibustion therapy with other treatments

The prevention and control of myopia through Mongolian moxibustion therapy emphasize overall regulation, balancing the three vital energies (Hii, Shira, and Badagan), warming and unblocking the meridians, harmonizing Qi and blood, and nourishing the liver and kidneys to improve vision.

The combination of the Mongolian medicinal decoction “Sanzitang” with external Mongolian moxibustion therapy for the prevention and control of myopia reflects the core principles of holistic concept and syndrome

differentiation and treatment in Mongolian medicine [15,16]. According to Mongolian medicine, myopia occurs when the balance of the three vital energies and seven elements within the body is disrupted, leading to ocular diseases. Since the eyes are considered the "external orifices" of the liver, the synergistic mechanism of nourishing liver and kidney pills combined with moxibustion is employed for liver-kidney deficiency type myopia (accompanied by developmental delays and frequent nocturnal urination). The "concurrent application of moxibustion and medication" method is used, with moxibustion applied to the Ganshu (BL18) and Shenshu (BL23) acupoints to warm and replenish kidney Yang, enhancing the regulatory capacity for axial length development [17].

The integration of Mongolian moxibustion therapy with modern optical approaches focuses on functional complementarity and safety synergy. The synergistic effect of moxibustion in relieving visual fatigue and orthokeratology lenses (OK lenses) is notable. OK lenses reshape the corneal morphology through nighttime wear, but they can easily cause accommodative spasms after lens removal during the day [18]. Moxibustion, applied to the Dinghui acupoint, regulates the Hii energy, balances the three vital energies, and has a calming and sedative effect.

Outdoor activities are significantly correlated with diopter and ocular axial length. Increasing the time spent on outdoor activities can effectively inhibit the onset and progression of myopia [19]. The "Ten Core Points of Knowledge on Preventing and Controlling Myopia among Children and Adolescents" issued by the National Health Commission emphasizes that daily outdoor activities during the daytime should last no less than 2 hours, or accumulate to 14 hours per week. However, there are variations in light intensity, duration, and spectrum across different seasons. Studies have demonstrated that outdoor activities and physical exercises (such as running, rope skipping, judo, etc.) can effectively delay the onset and progression of myopia [20]. Moxibustion therapy has the functions of regulating the dysfunction of Heyi and Badagan (in traditional Mongolian medicine theory), improving blood circulation, dispelling cold, and relieving pain, thus being more effective in preventing and controlling the development of myopia [21].

3. Western medicine's understanding of myopia

3.1. Overview of myopia

Myopia is a type of refractive error, which refers to the condition where, when the human eye is relaxed, parallel light rays, after passing through the refractive system of the eyeball, cannot focus on the retina but instead focus in front of it [22]. Based on refractive components, myopia is mainly classified into refractive myopia and axial myopia. Refractive myopia is further divided into three types: curvature myopia, refractive index myopia, and accommodative myopia [23]. Axial myopia is the most common type of myopia [24]. Children and adolescents are in a stage of growth and development, with their ocular physiological structures constantly changing. As the anterior-posterior axis of the eyeball gradually lengthens, the curvature of the cornea and lens tends to flatten, thereby weakening the refractive power of the eyeball [25]. The pattern of these changes is characterized by a reduction in hyperopia, with originally emmetropic eyes developing into myopia and already myopic eyes experiencing a further increase in their degree of myopia. In recent years, the incidence of myopia has continued to rise [26].

3.2. Prevention and treatment of myopia

Myopia is a significant public health issue affecting the physical and mental health of children, and its pathogenesis and prevention and control measures have been a research hotspot in the field of ophthalmology [27]. Studies have shown that the onset of myopia is the result of the combined effects of genetic and environmental factors [28].

Although the exact pathogenesis of myopia is not yet fully understood, the academic community generally believes that it is closely related to various mechanisms, including scleral remodeling, choroidal blood flow abnormalities, synthesis and metabolism of dopamine (DA), inflammatory responses, accommodation lag, and peripheral retinal defocus [29]. The core of myopia prevention and control is to delay abnormal growth of the ocular axis in children. Basic preventive measures for myopia include increasing outdoor activities, ensuring at least 2 hours of outdoor natural light exposure per day; adopting scientific eye-use habits, maintaining the "one-fist, one-foot, one-inch" reading and writing posture (a fist's distance from the chest, a foot's distance from the book, and an inch's distance from the fingertip to the pen tip); improving the eye-use environment, and undergoing regular vision checks [30]. Medical interventions mainly include pharmacological and optical interventions. Pharmacological intervention primarily involves the use of low-concentration atropine eye drops, which can effectively slow down the progression of myopia. Optical interventions include orthokeratology lenses and defocus-frame glasses, among others. The treatment of myopia mainly focuses on correcting vision and controlling its progression. Vision correction is achieved through frame glasses or contact lenses. Currently, the primary surgical methods for vision correction in clinical practice are laser corneal refractive surgery and phakic intraocular lens implantation, which are suitable for individuals aged 18 and above with stable refractive errors [31]. In recent years, the use of low-intensity single-wavelength red light therapy in the prevention and control of myopia in children has become a research focus.

4. Conclusion

Currently, myopia is one of the leading causes of visual impairment worldwide. To effectively prevent and control myopia, it is crucial to analyze and intervene in various risk factors during the pre-myopia stage, thereby preventing the onset of myopia and slowing down its progression. Mongolian medical moxibustion therapy offers unique advantages in the early prevention of myopia in children, providing multi-target regulation centered on acupoint around the eyes. It can regulate the functional disorders of Heyi and Badagan (two vital substances in Mongolian medicine), improve blood circulation, dispel cold and relieve pain, enhance ciliary muscle function, and alleviate visual fatigue. Studies have demonstrated that combining this therapy with Western medicine provides a safer and more effective prevention and control plan for early-stage myopia in children.

Disclosure statement

The authors declare no conflict of interest.

References

[1] Yan X, Kang Z, Sun H, et al., 2024, Discussion on Myopia Prevention and Control Based on the Theory of "Jingjin Imbalance". China Journal of Traditional Chinese Medicine and Pharmacy, 39(04): 1773–1776.

[2] Weng Y, Luo D, Chen F, 2023, Chen Feng's Experience in Treating Myopia by Regulating the Pivot and Unblocking the Collaterals with Acupuncture. Journal of Chinese Ophthalmology, 33(12): 1134–1137.

[3] Zhao Y, Liu Z, Zhang S, et al., 2025, Discussion on the Relationship Between Circadian Rhythm and Myopia Prevention and Control in Children and Adolescents Based on the Theory of "Yang Deficiency and Yin Excess". Journal of Chinese Ophthalmology, 1–5.

[4] Qiboer, 2024, Clinical Observation on the Therapeutic Effect of Mongolian Medicine Moxibustion Combined with Wuliji-18 Flavored Pill in the Treatment of Mammary Gland Hyperplasia, thesis, Inner Mongolia Medical University.

[5] Deng H, Xue Y, Ding G, 2004, Infrared Radiation Characteristics of Moxibustion and Meridian Acupoint. Chinese Acupuncture & Moxibustion, 24(02): 105–107.

[6] Tang Y, 2021, Short-Term Clinical Standardized Trial of Walnut Moxibustion for the Prevention and Control of Myopia in Adolescents, thesis, Beijing University of Chinese Medicine.

[7] Liu Y, Barigeqi, 2016, Mongolian Medicine's Understanding of the Etiology of Myopia. Asia-Pacific Traditional Medicine, 12(02): 15–16.

[8] Baoyintu, Tuya, 2016, Basic Theory of Traditional Mongolian Medicine. Hohhot: Inner Mongolia People's Publishing House, 44–45.

[9] Baderfu, Li J, 2012, Encyclopedia of Mongolian Studies – Volume on Medicine. Hohhot: Inner Mongolia People's Publishing House, 80–198.

[10] Wang Y, 2024, Clinical Study on the Treatment of Chronic Fatigue Syndrome with Traditional Mongolian Medicine Moxibustion Therapy, thesis, Inner Mongolia University for Nationalities.

[11] Sorsby A, Leary G, Richards M, 1962, Correlation Ametropia and Component Ametropia. Vision Research, 2: 309.

[12] Liu W, 2023, Clinical Observation on the Therapeutic Effect of Traditional Mongolian Medicine Acupuncture Combined with Moxibustion Therapy on Insomnia with Excessive Heyi, thesis, Inner Mongolia Medical University.

[13] Wang Y, Ma T, Liu Q, et al., 2025, Research Progress on the Pharmacological Effects and Clinical Applications of Medicinal Moxibustion. Asia-Pacific Traditional Medicine, 21(07): 205–211.

[14] Terigunbayar, Nasmenghe, Wuren, et al., 2022, Therapeutic Effect of Traditional Mongolian Medicine Moxibustion Therapy on Gastrointestinal Reactions Caused by Chemotherapy. Journal of Chinese Ethnic Medicine, 28(08): 54–56.

[15] Zhai J, Guo X, 2023, Exploration on the Application of Chinese and Mongolian Medicine Vision-Adjusting Ointment for External Application on Acupoint Around the Eyes in Preventing and Treating Myopia in Adolescents. Journal of Chinese Ethnic Medicine, 29(04): 56–57.

[16] Yang C, 2016, Understanding of the Causes of Myopia in Mongolian Medicine. Health Preservation Guide, 2016(26): 203.

[17] Dong M, 2012, A Brief Discussion on the Relationship Between Eye Diseases and Liver Diseases in Mongolian Medicine. Medical Frontiers, 2012(31): 45.

[18] Xiong Y, Liao J, He G, 2024, Comparison of the Control Effects of Orthokeratology Lenses and Specially Designed Frame Glasses on Axial Length in Young Children with Myopia. Chinese Journal of Ocular Trauma and Occupational Eye Disease, 46(11): 836–842.

[19] Sun H, Cao K, Yan X, et al., 2025, Exploration of Prevention and Control Strategies for Myopia in Children and Adolescents Based on Traditional Chinese Medicine Chronomedicine. Liaoning Journal of Traditional Chinese Medicine, 1–8.

[20] National Health Commission, 2024, Notice of the General Office of the National Health Commission on the Issuance of the Myopia Prevention and Treatment Guide (2024 Edition).

[21] Wang T, Lu Z, Dong Y, 2025, A Systematic Review Study on the Relationship Between Physical Activity and Myopia Prevalence. Journal of Lingnan Normal University, 46(03): 80–88.

[22] Ren H, Ju Y, 2022, Exploration of the Etiology and Pathogenesis of Myopia in Traditional Chinese Medicine Ophthalmology Classics. Chinese Science and Technology Journal Database (Medicine and Hygiene), 2022(07): 3.

[23] Li T, 2019, A Brief Discussion on the Application of Biometric Instruments in People with Refractive Errors.

Engineering Technology, 10: 274–275.

[24] Li N, Chen Z, 2014, New Advances in the Clinical Significance and Measurement Methods of the Ocular Axis. Medical Recapitulate, 20(10): 1812–1814.

[25] Zhang X, Wang J, He X, et al., 2023, Report from the International Myopia Institute on Non-Pathological Ocular Tissue Changes in Axial Myopia Patients. Chinese Journal of Experimental Ophthalmology, 41(11): 1115–1122.

[26] Li S, 2016, Construction of an Optical Model of the Eye Based on Emmetropia in Children. Chinese Journal of Optometry Ophthalmology and Visual Science, 2016(18): 32.

[27] Cui F, 2025, Quercetin Drug Delivery Systems Can Delay the Progression of Myopia. Health News, 2025-08-18(001).

[28] Baird P, Saw S, Lanca C, et al., 2020, Myopia. Nature Reviews Disease Primers, 6(01): 99.

[29] Diao Q, Wang L, Wang J, et al., 2025, Research Advances in the Pathogenesis of Myopia. International Journal of Ophthalmology, 25(08): 1302–1307.

[30] Hao W, Shen J, 2025, "Myopia Cannot Be Cured, but It Can Be Prevented and Controlled". Shanxi Economic Daily, 2025-08-31(002).

[31] General Office of the National Health Commission, 2024, Guidelines for the Prevention and Treatment of Myopia (2024 Edition).