

Research Progress on Traditional Chinese Medicine Syndrome Characteristics and Syndrome Differentiation-Based Treatment of Tic Disorders in Children

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Abstract

Tic Disorders (TD) significantly affects the physical and mental health as well as the social adaptability of the affected children. In recent years, the effectiveness of Traditional Chinese Medicine(TCM) in treating tic disorder has been widely verified in clinical practice. However, the standardization and normalization of the syndrome classification remain key bottlenecks restricting the deepening of clinical research. This article systematically reviews the origin of TCM disease names for childhood TD, the understanding of its etiology and pathogenesis, and the existing syndrome classification system. It also sorts out the empirical research data on the distribution of syndromes based on cluster analysis, focuses on discussing the connotation characteristics and identification key points of the existing core syndromes, and outlines the practical strategies and research progress of syndrome-based treatment from the perspectives of harmonizing the yin and yang of the internal organs, clinical evidence-based research of formulas and prescriptions, and the application of acupuncture.

Keywords

Tic Disorders; Traditional Chinese Medicine Syndrome Characteristics; Syndrome Differentiation-Based Treatment.

1. INTRODUCTION

TD is characterized by rapid, repetitive, and uncoordinated motor tics and/or vocal tics. Epidemiological data show that the prevalence of TD among children and adolescents worldwide is approximately 3%. In China, the prevalence among children aged 6 to 16 is 2.5%. Some patients may have symptoms persisting into adulthood. This disorder not only causes involuntary movements and abnormal vocalizations but also often coexists with attention deficit, obsessive-compulsive behaviors, autism, sleep disorders, and mood disorders, further exacerbating the condition and even developing into refractory TD, severely affecting the daily life, learning ability, mental health, and social adaptation of the patients. Modern medicine believes that it is related to multiple factors such as genetics, immunity, neurotransmitter imbalance, and environment. The main treatment relies on antipsychotic drugs such as dopamine receptor blockers, but long-term use is prone to cause adverse reactions such as drowsiness, vertigo, metabolic disorders, and movement disorders, and is prone to recurrence after discontinuation. Parents and children of patients have many concerns about drug treatment [1-3].

In contrast, TCM has significant advantages and unique features. The Chinese medical therapy can be tailored to the individual differences of the patients through syndrome differentiation and treatment based on the specific conditions. It not only effectively improves

the symptoms and frequency of tics, reduces the recurrence rate, but also has fewer adverse reactions and has a high degree of clinical applicability.

However, the traditional Chinese syndrome differentiation system has long been in a situation where various schools of thought coexist in the field of TD. Different doctors have their own principles for classifying syndromes and conducting treatment, and the standardization and repeatability of syndrome classification remain weak points in clinical research.

This article aims to systematically review the characteristics of the Chinese syndrome of children with TD and the research progress of syndrome differentiation and treatment, in order to provide references for clinical practice and subsequent research in this field.

2. THE ORIGIN OF TRADITIONAL CHINESE MEDICAL DISEASE NAMES

In TCM classics, there is no disease name exactly corresponding to TD. Based on the onset characteristics and similar symptoms of TD, physicians throughout history have mostly classified it under categories such as “liver wind”, “slow frightening wind”, “convulsions”, “muscular twitching”, or “muscle and sinew throbbing”. Its pathogenesis is closely related to the five viscera, especially the liver, spleen, and heart. Ancient TCM practitioners believed that children’s viscera are delicate and agile—the liver is often in excess while the spleen is often deficient. Due to negative influences from the social environment and their own internal pressures, children are prone to irritability, leading to stagnation of liver qi and internally stirring liver wind. As the saying goes, “When wind predominates, there is movement.” Key to Diagnosis and Treatment of Pediatric Diseases (Xiao'er Yaozheng Zhijue) states: “In any disease, whether recent or chronic, it may trigger liver wind. When wind moves, it affects the head and eyes. The eyes are associated with the liver. Wind entering the eyes causes them to move up, down, left, and right, as if blown by a gentle yet unceasing breeze—unbearable for the child, hence the continuous blinking. Standards for the Diagnosis and Treatment of Pediatric Diseases (Youke Zhengzhi Zhunheng) says: “Water generates the liver-wood, and wood transforms into wind. Wood overacts on spleen-earth. The stomach is the fu-organ of the spleen, so when wind arises in the stomach, symptoms gradually appear: the shoulders slightly lift, the hands hang down, and there is constant, involuntary shaking—this is called slow frightening wind.” The spleen is the foundation of acquired constitution. Because children have weak spleen and stomach, insufficient qi and blood, and lack of nourishment for the four limbs and muscles, spleen-earth becomes deficient. Earth deficiency causes wood to shake; wood shaking gives rise to wind movement, leading to muscular spasms and contractures [4].

3. ETIOLOGY, PATHOGENESIS AND LOCATION

TD is related to congenital deficiency of constitution, poor mental state, improper diet, disease influence, excessive study pressure, fatigue and exhaustion, prolonged watching of TV, and prolonged playing of electronic games. Wind phlegm coagulation, liver hyperactivity causing wind movement are the key pathological factors. The pathological factors mainly consist of “wind, fire, phlegm, and blood stasis” [5].

The influence of wind evil occupies a primary position. TD is mainly manifested by abnormal muscle twitching, which is highly consistent with the theory in traditional Chinese medicine that “wind prevails and then it moves”. The movement of the fascia is nourished and regulated by liver blood and regulated by liver qi. If liver qi fails to be released and regulated, or if liver blood is deficient and the tendons are not nourished, it is prone to cause internal wind movement. Clinically, there are internal wind and external wind distinctions: internal wind is mostly caused by liver and kidney yin deficiency, liver yang rising, or hyperactivity of yang transforming into wind; external wind often occurs due to external invasion of wind evil into the skin and meridians, triggering internal wind and causing the disease [5].

The internal accumulation of fire evil is an important pathological factor promoting the rapid onset of the disease. Poor mental state and liver depression leading to fire generation; food accumulation and retention, generating heat and fire. Liver fire ascending, triggering liver wind, and the interaction of wind and fire intensifies the twitching symptoms. What is more troublesome is that the fire evil is prone to transform body fluids into phlegm, causing phlegm-fire to coalesce, forming a vicious cycle, and making the condition increasingly complex and difficult to heal.

The obstruction of phlegm often determines the protracted and recurrent nature of the disease. Unhealthy diet damages the spleen and stomach, causing the spleen to lose its normal function of transportation and transformation, and leading to abnormal water and dampness metabolism, resulting in the accumulation of dampness and the generation of phlegm. The phlegm can not only obstruct the meridians and hinder the circulation of qi and blood, but also combine with liver wind, covering the clear orifices and spreading to the limbs, causing recurrent twitching symptoms. Some children present with sounds in the throat, "chattering" sounds, or abnormal speech, which is mostly related to the disturbance of phlegm and fire in the throat.

The obstruction of blood in the meridians is more common in cases of refractory diseases with prolonged and unhealed conditions. Long-term illness invades the meridians, causing poor circulation of qi and blood, and stagnant blood accumulates in the meridians. The blood is not only a pathological product but can further impede the circulation of qi and blood, leading to the lack of nourishment of the tendons and making the twitching symptoms stubborn and difficult to heal [6].

From the perspective of organ positioning, the location of the disease in TD mainly lies in the liver, but it is also closely related to the spleen, lung, heart, and kidney. The liver often has excess while the spleen is often deficient. The special physiological and pathological characteristics of children determine that "excess liver and deficiency spleen" (or "deficiency spleen excess liver") becomes one of the most common disease patterns of TD. As the disease progresses, with the gradual depletion of the body's vital energy, it can affect kidney yin and kidney essence, leading to kidney deficiency and liver hyperactivity, or yin deficiency and wind movement; it can also affect the lungs, forming a disease pattern of external wind invading the lungs and triggering internal wind, or poor function of the lung orifices. Therefore, the changes in clinical syndromes actually reflect the dynamic combination of wind, fire, phlegm, and blood in different children and different disease stages, as well as the differences in the involvement of organs [5, 7, 8].

4. CLASSIFICATION AND DISTRIBUTION CHARACTERISTICS OF TRADITIONAL CHINESE MEDICINE SYNDROMES

4.1. Overview of the Existing Syndrome Classification System

Due to the lack of a unified diagnostic standard, there are still some differences in the classification of TD's syndromes in pediatric traditional Chinese medicine clinical practice. By integrating relevant diagnostic and treatment guidelines, clinical studies, and the experience of renowned traditional Chinese medicine practitioners, the common syndromes of TD can be summarized into the following main categories. According to the recent published diagnostic guidelines, TD is classified into six basic syndromes, namely liver hyperactivity wind movement syndrome, external wind triggering syndrome, phlegm-fire disturbing the spirit syndrome, qi stagnation and fire generation syndrome, spleen deficiency phlegm accumulation syndrome, and yin deficiency wind movement syndrome [9].

Some other scholars focused on the clinical complex situation of attention deficit hyperactivity disorder coexisting with tics, and based on the "syndrome guiding disease"

thinking, systematically diagnosed and classified into five main syndromes: liver wind phlegm syndrome, kidney deficiency liver hyperactivity syndrome, external wind triggering syndrome, spleen and stomach latent fire syndrome, and heart-liver fire exuberance syndrome [10].

The above classification systems have their own focuses, but a consensus understanding is gradually taking shape: that the classification of TD should be based on the three core organs (liver, spleen and kidney) and the different combinations of wind, fire, phlegm, and deficiency should be used as the basis for judgment. When the liver is hyperactive and wind is agitated, it is mainly characterized by excessive heat; when the spleen is deficient and the liver is dominant, it is mainly characterized by a mixture of deficiency and excess; when phlegm and fire disturb the spirit, it is characterized by internal disturbance of phlegm heat; when yin deficiency causes wind, it belongs to a condition of deficiency with a mixture of excess - this syndrome spectrum basically covers the type distribution of most clinical cases.

4.2. Research on the Distribution of Syndrome Types Based on Cluster Analysis

In recent years, the introduction of data mining techniques such as cluster analysis has provided a more objective research tool for revealing the true distribution of syndrome types in TD.

A study based on cluster analysis exploring the distribution of traditional Chinese medicine syndrome types in children with refractory tic disorders holds significant reference value. This study included 183 children aged 3 to 18 years with refractory tic disorders. Through systematic cluster analysis and principal component analysis, the TCM symptoms were aggregated into 6 categories, and finally 5 types of syndromes were extracted. Among them, the category of spleen deficiency, liver excess, and dampness syndrome accounted for the largest proportion, reaching 27.32%; followed by the category of phlegm-fire disturbing the spirit (21.31%), the category of wind-heat invading the lung (18.03%), the category of phlegm-qi interconnection obstruction syndrome (17.49%), and the category of yin deficiency with dampness syndrome (15.85) [11].

This data clearly indicates that the two main pathological patterns are the mixed virtual and actual condition (spleen deficiency and liver exuberance type) and the phlegm-fire syndrome. Together, these two account for nearly half of the cases. It is worth noting that the wind-heat invading the lung syndrome appears as an independent category apart from the external wind-activated syndrome, suggesting that the role of lung-related factors in the onset and development of TD in children may have been underestimated by the traditional liver-centered diagnostic framework. Additionally, the frequent occurrence of phlegm-qi intermingling syndrome also reflects the profound influence of emotional factors (the "qi") in the onset and evolution of TD - this has important clinical implications in the current context of high academic pressure and widespread anxiety among children.

4.3. Clinical Characteristics and Identification Key Points of Each Core Syndrome

Liver hyperactivity and wind disturbance syndrome: frequent and forceful twitching, excessive restlessness, obvious facial twitching, head shaking, shrugging shoulders, shouting, willfulness, poor self-control, even self-harm and self-mutilation, accompanied by irritability, anger easily, dizziness, headache, or distension, red tongue, white or thin yellow coating, and forceful pulse. Representative formula: Tianma Gouteng Decoction modified, etc.

External wind stimulation syndrome: abnormal sounds in the throat or foul speech, frowning and blinking frequently, symptoms worsen after colds, often accompanied by nasal congestion and runny nose, red throat and sore throat, or fever, pale tongue, thin white coating, and floating rapid pulse. Representative formula: Yinqiao San modified, etc.

Turbid phlegm disturbing the spirit syndrome: forceful twitching, phlegm noise in the throat, abnormal sounds and foul speech, occasional dizziness, frequent dreams during sleep,

preference for greasy and sweet foods, irritability and anger easily, bitter mouth and dry throat, constipation, short and yellow urine, red tongue, thick yellow coating and slippery rapid pulse. Representative formula: Huanglian Wendan Decoction modified, etc.

Spleen deficiency and phlegm accumulation syndrome: long-term twitching, unpredictable attacks, weak twitching, twitching at the corners of the mouth, frowning and blinking, phlegm sound in the throat, emaciated body, poor appetite, drowsiness and frequent sleep, pale complexion, loose stools, pale red tongue, thick and greasy coating and sinking slippery pulse. Representative formula: Shiweli Wendan Decoction, etc.

Yin deficiency wind disturbance syndrome: limb tremors, tense tendons, head shaking and shrugging shoulders, rowning and blinking, foul speech from the mouth, dry throat and clearing the throat, emaciated body, dizziness and tinnitus, flushed cheeks, hot palms and soles, restlessness during sleep, constipation, short and yellow urine, red and dry tongue, little moisture, thin and smooth coating, and fine and rapid pulse. Representative formula: Daizhengfengzhu modified, etc. [9]

5. CLINICAL STRATEGIES AND RESEARCH PROGRESS OF SYNDROME-BASED TREATMENT

5.1. Syndrome-Based Thinking

The treatment based on zang-fu organs is currently one of the most systematic treatment frameworks. Treating from the liver focuses on calming the liver and suppressing the wind; treating from heart emphasizes clearing the heart, reducing fire, and calming the mind; treating from the spleen emphasizes strengthening the spleen and eliminating phlegm, and regulating the liver and spleen; treating from the lung advocates expelling phlegm and calming the liver and soothing the throat; treating from the kidney emphasizes nourishing the kidney and generating yin, and calming the yang and suppressing the wind. Although each zang organ is treated separately, clinically, multiple zang organs are often involved in the same disease, and it is necessary to grasp the priorities and reflect the advantages of the holistic concept and syndrome-based treatment in traditional Chinese medicine [12].

From the perspective of deficiency treatment, it provides another treatment idea for the syndromes formed due to insufficient constitution or prolonged illness. Children have the physiological characteristics of "youthful yin and yang", with delicate zang-fu organs and insufficient qi and form. They are prone to yin-blood and yang qi deficiency due to insufficient innate constitution, improper postnatal nourishment, or prolonged illness [13].

The treatment based on the theory of wind phlegm focuses on the most core pathogenic factors of tic disorders. The treatment should combine the elimination of wind and the dissipation of phlegm [14].

In addition, Professor Ma Rong's pioneering "three-differentiation" model (first differentiating the disease, then differentiating the syndrome, and finally differentiating the symptoms) has attracted much attention due to its clear diagnostic levels and strong operability. This model emphasizes that differentiating the disease focuses on clearly identifying the diagnosis of both traditional Chinese and Western medicine, and excluding other diseases that may cause tic-like movements such as allergic conjunctivitis; differentiating the syndrome involves choosing the corresponding treatment principles based on the specific syndrome characteristics of the child; and differentiating the symptoms involves selecting guiding drugs based on the specific symptoms of different parts of the tic and the different nature of the occurrence manifestations. This three-step progressive diagnostic paradigm attempts to bridge the tension between individualized differentiation of syndrome in traditional Chinese medicine

and the standardization of modern clinical practice, and has important clinical guiding value [15].

5.2. Clinical Evidence-based Research on Traditional Formulas and Contemporary Formulas

A randomized controlled study included 60 children with tic disorders (Liver Excess and Wind Movement Syndrome). They were randomly divided into a control group and a combined group, with 30 cases in each group. Both groups received conventional Western medicine treatment and auricular acupoint application. The combined group was additionally treated with modified Tianma Gouteng Decoction. The treatment lasted for 8 weeks. The results showed that the total effective rate of the combined group (96.67%) was significantly higher than that of the control group (73.33%) ($P < 0.05$). After treatment, the scores of motor tics (8.66 vs. 13.48), vocal tics (16.11 vs. 18.03), and the total score of the main syndrome in traditional Chinese medicine in the combined group were lower than those in the control group (9.16). The serum 5-HT level in the combined group (70.30 ng/mL) was lower than that in the control group (76.39), and the GABA level (2.90 $\mu\text{g/mL}$) was higher than that in the control group (2.61), all $P < 0.05$. It was suggested that modified Tianma Gouteng Decoction as an adjunct treatment could improve efficacy, alleviate symptoms, and improve neurotransmitter levels, with good safety [16]. Another study also found that Tianma Gouteng Decoction combined with fluphenazine could effectively improve the neurotransmitter levels in children with tic disorders, enhance efficacy, and promote intellectual and self-awareness development [17].

Huanglian Wenchan Decoction evolved from Wenchan Decoction by adding Huanglian and adjusting the dosage of each medicinal ingredient. It was first recorded in "Six Yin Treatise - Volume 1 - Syndrome of Heat in Summer". A randomized controlled study included 112 children with multiple tics due to heat and wind movement syndrome. They were randomly divided into an observation group (modified Huanglian Wenchan Decoction) and a control group (sulfate biperiden), and both groups were combined with auricular acupoint application. The treatment lasted for 8 weeks. The results showed that the total effective rate of the observation group was 92.86% (52/56), significantly higher than that of the control group (73.21% (41/56)) ($P < 0.05$). After 2 weeks and 8 weeks of treatment, the YGTSS scores and the total score of traditional Chinese medicine syndrome in the observation group were better than those in the control group (all $P < 0.05$). At the same time, the serum dopamine (DA) level in the observation group decreased to 10.23 ± 1.64 ng/mL, γ -aminobutyric acid (GABA) increased to 2.42 ± 0.61 ng/mL and norepinephrine (NE) increased to 34.76 ± 4.28 ng/mL. The improvement of all indicators was significantly better than that of the control group [18].

5.3. Acupuncture, Massage therapy and Other TCM Therapy

Acupuncture and massage therapy, as an important component of the TCM system, has also received extensive attention in the treatment of childhood TD. Acupuncture has also received extensive attention in the treatment of childhood TD. A study systematically evaluated 12 systematic reviews/Meta-analyses on acupuncture for treating tic disorders (including a total of 106 randomized controlled trials, $n = 7973$). In terms of efficacy, the acupuncture group showed a significantly higher overall response rate (OR = 2.49, 95% CI: 1.89 - 3.27; RR = 1.14 - 1.29), and the improvement in the YGTSS total score was significant (MD = -4.55, 95% CI: -6.74 to -2.39; SMD = -0.71 to -1.63). The incidence of adverse reactions was lower (RR = 0.26, 95% CI: 0.17 - 0.41). The conclusion is that acupuncture is effective in treating TD, but due to the low methodological quality of the existing evidence, more high-quality studies are needed [19]. A systematic review and network Meta-analysis on pediatric massage therapy combined with other traditional Chinese medical treatments for childhood tic disorders included 24

randomized controlled trials (n = 1657), involving 9 intervention measures. The results showed that pediatric massage therapy combined with TCM had the best effects in improving the overall effectiveness rate (ranked first in SUCRA), reducing the YGTSS motor tic score (MD = 3.80, 95% CI: 0.74 - 6.85) and vocal tic score (MD = 2.01, 95% CI: 1.00 - 3.02); pediatric massage therapy combined with hand acupuncture performed the best in reducing the YGTSS total score (MD = 3.57, 95% CI: -6.88 - 14.02); and simple pediatric massage therapy ranked first in reducing the adverse reaction rate (RR = 0.19, 95% CI: 0.04 - 0.92) [20].

As an important part of TCM external therapy, auricular acupuncture and auricular point therapy have gained increasing attention in the treatment of TD in children. The Expert consensus on external treatment for tic disorder in children with traditional Chinese medicine(2024) formally recommends auricular point therapy as a recognized therapy, clarifying its clinical application and operational standards. The main points include Shenmen, Cortex Subcorticalis, and Sympathetic; the auxiliary points are Brain and Endocrine; region-specific points include chest and abdomen for trunk tics, forehead for eyebrow raising/furrowing, eye, Mu1, and Mu2 for eye tics/rolling/blinking, internal and external nose for nose tics, cheek for facial tics, mouth and ear back for lip/grinning tics, throat and lung for vocal tics, elbow and shoulder for upper limb tics, and knee and hip for lower limb tics. Each compression lasts 1–2 minutes, 2–3 times daily, with each application retained for 3–5 days. Treatment frequency is 1–3 times per week, with three months as one course of treatment [21].

6. CONCLUSION

Childhood TD is a neurological and psychiatric disorder with complex clinical manifestations, multiple causes, and a long treatment period. From the perspective of pathogenesis of "wind, fire, phlegm, and stasis", traditional Chinese medicine adopts a syndrome differentiation approach centered on the liver and considering the five zang-organs. In clinical treatment, it has accumulated rich practical experience and solid evidence-based research. The changes in different syndromes essentially represent the polymorphic expression of the same pathological process in different children and at different stages. Multiple studies have also confirmed the efficacy and safety of TCM. However, there are still bottlenecks such as insufficient standardization of syndrome classification, uneven quality of clinical research design, and the early stage of research on the mechanism of action. In the future, multi-center large-sample surveys on the distribution of syndromes should be conducted to establish unified syndrome differentiation standards. Rigorous randomized double-blind placebo-controlled trials with rigorous design should be carried out and a long-term follow-up mechanism established. At the same time, technologies such as neuroimaging, metabolomics, and gut microbiota can be utilized to explain the multi-target effects of traditional Chinese medicine formulas.

REFERENCES

- [1] Xiaoxia L, Jilong J, Xianrui C, Yanhui C. Vitamin D status and tic disorder: a systematic review and meta-analysis of observational studies. *Front Pediatr*. 2023 May 30;11:1173741.
- [2] Fu S, Song Q, He XJ, Tian XY. Advances in the application of comprehensive behavioral intervention in tic disorder. *Zhongguo Dang Dai Er Ke Za Zhi*. 2024 Dec 15;26(12):1367-1372.
- [3] Li Chunyu, Guo Yinan. Treating Childhood Tic Disorders Based on the "Strengthen Brain and Fill Meridians - State Target" Theory [J]. *Journal of Changchun University of Traditional Chinese Medicine*, 2026, 42(3): 272-276.
- [4] Guo Ying, Guo Yinan. Research Progress of Traditional Chinese Medicine in Treating Childhood Tic Disorders [J]. *Journal of Traditional Chinese Medicine Clinical Research*, 2024, 16(18): 143-148.

- [5] Zhang Fuxiong, Luo Junjie, Lian Yongkang, et al. Research Progress of Traditional Chinese Medicine in Treating Childhood Tic Disorders [J]. Chinese Modern Doctor, 2025, 63(18): 136-138.
- [6] Wang Tongtong, Chen Zijia. A Preliminary Analysis of the Application of Blood Vessel-Correcting Drugs in the Treatment of Tic Disorders Based on the Blood Vessel Disease Theory [J]. Beijing Journal of Traditional Chinese Medicine, 2023, 42(02): 192-195.
- [7] Zhang Wen, Zhao Aijing, Yu Siya, et al. Discussing the Differential Diagnosis and Treatment Ideas of Tic Disorders and Their Comorbidities Based on "Unified Treatment by Syndrome" [J]. Modern Traditional Chinese Medicine Clinical Practice, 2024, 31(05): 1-4+26.
- [8] Yu X, Zhu M, Tang Q, An S, Tan H, Wang X, Zhang J, Tian J, Li J. Traditional Chinese Medicine in the Comprehensive Management of Tourette Syndrome: Insights from Genetics and Pathophysiology: A Review. Drug Des Devel Ther. 2025 Sep 11;19:8181-8194.
- [9] Rong Ping, Ma Rong, Han Xinmin, et al. Clinical Diagnosis and Treatment Guidelines for Pediatric Disorders in Traditional Chinese Medicine - Touman Disorder (Revised) [J]. Journal of Traditional Chinese Pediatrics, 2019, 15(06): 1-6.
- [10] Ni Deqing, Sun Jichao. Theoretical Exploration and Application of Touman Disorder Comorbid with Attention Deficit Hyperactivity Disorder in Traditional Chinese Medicine [J]. Chinese Journal of Integrated Traditional and Western Pediatrics, 2025, 17(06): 512-516.
- [11] Xu Jiabao, Zhang Zhenhua, Fu Ganfang, et al. Research on the Distribution of Traditional Chinese Medicine Syndromes of Children with Refractory Touman Disorder Based on Cluster Analysis. International Journal of Traditional Chinese Medicine, 2023, 45(03): 272-277.
- [12] Zhong Shengbing, Chen Kunzhi, Tian Hongxing. Research Progress in Treating Children's Touman Disorders from the Perspective of Five Zang Organs [J]. Chinese Ethnic and Folk Medicine, 2023, 32(19): 47-50.
- [13] Zhao Ting, Zhang Xilian. Clinical Treatment Overview of Treating Childhood Tic Disorders from the Perspective of Qi Deficiency [J]. Journal of Tianjin University of Traditional Chinese Medicine, 2023, 42(06): 796-801.
- [14] Li Jingxuan, Li Wenxiu, Zhang Xilian. Research Progress on Treating Childhood Tic Disorders from the Perspective of Wind and Phlegm [J]. Tianjin Traditional Chinese Medicine, 2024, 41(11): 1491-1496.
- [15] Nie Lianghui, Ma Rong, Rong Ping, et al. Experience of Ma Rong's "Three Differentiation" Model in Treating Childhood Tic Disorders [J]. Chinese Journal of Integrated Traditional and Western Pediatrics, 2023, 15(05): 369-373.
- [16] Su Xiaoming. Clinical Observation on the Modified Tianma Gouteng Decoction as an Adjuvant Treatment for Children with Tic Disorders of Liver Hyperactivity and Wind Movement Syndrome [J]. Practical Journal of Traditional Chinese Medicine, 2025, 41(8): 1626-1628.
- [17] Liu L, Cheng S, Yang Y, Chen Y. Clinical study on Tianma Gouteng decoction combined with haloperidol in the treatment of tic disorder in children. Minerva Pediatr (Torino). 2024 Apr;76(2):295-298.
- [18] Zhang Guoying, Wei Yan, Li Yanlin, et al. Clinical Study on the Modified Huanglian Wencai Decoction for Treating Pediatric Multiple Tics Syndrome (Phlegm-Heat Moving Wind Syndrome) [J]. Journal of Traditional Chinese Medicine, 2026, 54(04): 84-88.
- [19] Li X, Xu L, Liang H, Peng J, Qin G, Wan L. Application of acupuncture and moxibustion for tic disorders: An overview of systematic reviews and meta-analysis. Medicine (Baltimore). 2025 Dec 12;104(50):e46506.

- [20]23. Liu J, Zhang H, Yu T, Chen J, Zhang Y, Sun J, Xu Y, Na R, Yan J, Zhang H, Lu M. Pediatric massage in conjunction with other traditional Chinese medicine therapies for tic disorder in children: systematic review and network meta-analysis. *Front Pediatr.* 2025 Aug 26;13:1609934
- [21]Expert consensus on external treatment for tic disorder in children with traditional Chinese medicine(2024) [J]. *Chinese Journal of Integrated Traditional and Western Pediatrics*, 2024, 16(01): 1-7.