

Research Progress of Traditional Chinese Medicine on Elderly Mild Cognitive Impairment

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Abstract: *Mild cognitive impairment (MCI) refers to the stage between the mild decline in memory and thinking abilities that occurs during normal aging and the more severe cognitive decline seen in dementia. The early diagnosis and treatment of MCI is its golden period for prevention and has significant clinical and practical significance. Due to the complexity of the pathogenesis of MCI, Western medicine can only improve the symptoms of patients to varying degrees or delay the progression of the disease in clinical practice. In recent years, with the development of research on the treatment of MCI with traditional Chinese medicine (TCM), the impact of TCM drugs and non-drug therapies on the cognitive function of the elderly has attracted widespread attention in the academic community and achieved certain progress. This article reviews the research progress of TCM drugs and non-drug therapies for MCI.*

Keywords: Mild cognitive impairment, Traditional Chinese medicine treatment, Non-pharmaceutical therapy of traditional Chinese medicine, Research progress.

1. Introduction

According to the data from the Seventh National Population Census, the proportion of the elderly population aged 65 and above in China's total population amounts to 13.5%; the number of elderly people aged ≥ 60 is nearly 250 million, and the elderly dependency ratio stands at 17.4%. It is projected that by 2035, the elderly dependency ratio will reach 28.4% [1]. The prevalence of mild cognitive impairment (MCI) among Chinese adults aged 60 and above is approximately 14.71% [2]. Mild cognitive impairment (MCI) refers to the transitional stage between mild declines in memory and cognitive function that occur during normal aging and the more severe cognitive decline associated with dementia; it is considered the preclinical phase of Alzheimer's disease (AD) and represents an "opportunity window" for the prevention and treatment of dementia [3]. Patients with MCI may experience symptoms such as memory impairment, difficulty concentrating, temporal or spatial disorientation, impaired executive function, and reduced social competence; these symptoms can cause inconvenience in the patient's daily life and affect their quality of life. Among the elderly population, the prevalence of MCI increases steadily with age, and the risk of progressing from MCI to AD is more than three times higher in individuals with MCI compared to non-MCI elderly individuals [4]. Additionally, MCI can pose a threat to the safety of affected individuals. For example, individuals with MCI may be more prone to falls due to memory decline and difficulty concentrating, or may respond insufficiently quickly to hazardous situations while driving, thereby increasing their risk of accidents [5].

To date, the etiology of mild cognitive impairment remains unclear. Although pharmacological agents such as cholinesterase inhibitors, calcium channel blockers, and neuroprotective agents used in clinical practice can exert a certain beneficial effect on alleviating the symptoms of mild cognitive impairment in patients, long-term use of these medications may lead to adverse effects—including dizziness, diarrhea, vomiting, insomnia, asthma, chronic bronchitis, frequent urination, and cardiac arrhythmias—that

compromise both physical health and quality of life. In recent years, the impact of traditional Chinese medicine and non-pharmacological therapies on cognitive function in older adults has garnered significant attention within the academic community and has yielded notable advancements.

2. Research Progress on the Use of Traditional Chinese Medicine in the Treatment of Mild Cognitive Impairment in Older Adults

In the development of traditional Chinese medicine (TCM), there has been no disease named "cognitive impairment". Literature review shows that it is closely associated with dementia, and falls under the categories of "dementia", "forgetfulness" and "dementia-like disorder" [6]. The term "dementia" first appeared in Secret Biographies of Hua Tuo, the Divine Physician. In Great Compendium of Acupuncture and Moxibustion, this disease was termed "dementia", with the record: "mental dementia with frequent weeping and sorrow". Supplement to the Invaluable Prescriptions · Geriatric Care states: "After the age of fifty, human yang-qi gradually declines day by day, impairments accumulate, mental strength fades, and one tends to forget what has just happened." The frequent TCM syndrome patterns of mild cognitive impairment involve phlegm-turbidity obstructing the orifices, kidney-essence deficiency and marrow-sea insufficiency.

2.1 Traditional Chinese Medicine Formulas

Traditional Chinese medicine (TCM) formulations for the treatment of mild cognitive impairment (MCI) are characterized by addressing underlying visceral deficiency and decline as the root cause, featuring diverse herbal compositions, emphasizing syndrome differentiation and tailored treatment approaches, integrating traditional therapeutic methods, and focusing on prevention and rehabilitation. Zhang Yuqi et al. conducted a study in which 41 MCI patients in each group were administered either the Western medication Enbipu Capsules or the TCM formula Buyang Huanwu Decoction alone for a continuous period of 3

months; therapeutic efficacy was then assessed using the MoCA and MMSE scales. The study demonstrated that Buyang Huanwu Decoction exhibits favorable efficacy in treating MCI with a qi deficiency and blood stasis pattern; furthermore, statistical analysis revealed that the overall effective rate of Buyang Huanwu Decoction was 12% higher than that of Enbipu Capsules, suggesting its potential role in slowing disease progression and improving patients' quality of life [7]. Qi Yingchun et al. conducted a comparative study on the efficacy of Modified Huanglian Wendan Decoction (composed of Zhuru, Fuling, Zhishi, Banxia, etc.) and Aniracetam Capsules in the treatment of mild cognitive impairment in the elderly. A total of 90 hospitalized patients were enrolled and randomly divided into two groups, with 45 patients in each group. The control group received oral Aniracetam Capsules, while the treatment group received the Modified Huanglian Wendan Decoction, both for a continuous period of 3 months. The improvement in actual cognitive function was used as the outcome measure. After statistical analysis, the results showed that the total effective rate in the treatment group was 9% higher than that in the control group. Moreover, not only was the traditional Chinese medicine treatment more effective than the Western medicine, but the number of patients with adverse reactions in the treatment group was 2 cases, which was significantly lower than the 10 cases in the control group [8]. Chen Jiedong et al. treated 30 patients with MCI using Jiannao Compound, while a control group of 30 patients received donepezil hydrochloride therapy for MCI; both groups received treatment for 12 consecutive weeks. The MoCA and MMSE scores were used as outcome measures. After statistical validation, the total effective rate in the treatment group was 83.33%, which was 20% higher than that in the control group. These results indicate that Jiannao Compound is effective in the treatment of MCI and demonstrates superior efficacy compared to the commonly used Western medication donepezil hydrochloride [9].

Zhang Long et al. compared two groups, each consisting of 31 elderly patients with MCI; the control group received piracetam tablets and zopiclone tablets, while the observation group received additional Yizhi Anmian Formula treatment on top of the aforementioned regimen for 10 consecutive weeks. The MoCA, MMSE, AIS scales, and the "Diagnostic Criteria for Common Syndromes in Traditional Chinese Medicine" were employed as evaluation criteria. Statistical analysis revealed that the total effective rate in the observation group was 93.55%, which was nearly 26% higher than that in the control group. This study suggests that Yizhi Anmian Formula can be used in the treatment of mild cognitive impairment (MCI) associated with yin deficiency with excessive heat pattern; furthermore, the combination of Yizhi Anmian Formula with piracetam tablets and zopiclone tablets demonstrated superior efficacy in treating MCI compared to the control group receiving either piracetam tablets or zopiclone tablets alone [10]. Yu Jinzhen et al. conducted experimental studies demonstrating that Chaidi Yizhi Decoction exhibits significant therapeutic efficacy in treating mild cognitive impairment (MCI) associated with qi stagnation and blood stasis syndrome. In this study, 64 MCI patients were enrolled and divided into two groups: the control group received edetilde tablets alone, while the observation group received Chaidi Yizhi Decoction in

addition to the standard treatment. The treatment was administered continuously for 8 weeks. The therapeutic efficacy was assessed using scores from the MMSE, MoCA, and HAMA scales. Statistical analysis revealed that, across all scales, the observation group's scores were closer to the healthy reference range compared to the control group, indicating that Chaidi Yizhi Decoction can effectively alleviate MCI-related symptoms in patients. Furthermore, the overall therapeutic efficacy of the observation group supplemented with Chaidi Yizhi Decoction was superior to that of the control group receiving edetilde tablets. Additionally, no adverse reactions were observed with the administration of Chaidi Yizhi Decoction [11]. Lin Anchao et al. found that the Zishen Huoxue Formula, when applied in the prevention and treatment of MCI, could effectively improve MCI-related clinical parameters, and its therapeutic efficacy was superior to that of donepezil hydrochloride tablets according to traditional Chinese medicine (TCM) evaluation criteria. In this study, 60 patients were enrolled and divided into an experimental group and a control group. The experimental group received the Zishen Huoxue Formula (with modifications) combined with baseline treatment, while the control group received donepezil hydrochloride tablets combined with baseline treatment. The treatment duration was 12 weeks. Statistical analysis of the MMSE, MoCA, and TCM syndrome score results before and after treatment showed no significant differences among the scales except for the TCM syndrome score, where the experimental group's score was significantly superior to that of the control group, indicating a clear advantage [12]. Li Quan et al. found that for type 2 diabetes mellitus complicated by mild cognitive dysfunction and kidney deficiency with marrow depletion syndrome, the combination of Dihuang Yinzi with Western medicine intervention could ameliorate cognitive impairment in patients while maintaining stable blood glucose levels, and this approach demonstrated favorable safety profiles [13].

2.2 Chinese Patent Medicine

In recent years, numerous experimental studies have demonstrated that certain traditional Chinese medicinal formulations exhibit significant therapeutic efficacy in the treatment of mild cognitive impairment (MCI). He Yingchun et al. found that Jianpi Tianjing Granules could enhance memory function in MCI patients by improving the metabolic regulation of serum β -amyloid protein and strengthening the body's antioxidant defense capacity. A total of 100 outpatients were enrolled and divided into two groups: the treatment group received Jianpi Tianjing Granules, while the control group was administered a placebo. After a 6-month treatment period, the outcomes were assessed using the Activities of Daily Living (ADL) scale, the Mini-Mental State Examination (MMSE), and the Montreal Cognitive Assessment (MoCA) scale. No statistically significant difference was observed between the two groups before treatment; however, a significant difference emerged after treatment, indicating that the Jianpi Tianjing formula is effective in improving MCI [14]. Liao Haosen et al. conducted a randomized controlled trial demonstrating that Tianma Xingnao Capsules exhibit significant efficacy in treating vascular MCI (VaMCI), with their improvement of cognitive and linguistic functions being non-inferior to that of donepezil hydrochloride. These capsules can ameliorate

symptoms associated with “brain marrow deficiency,” such as fatigue, lethargy, dizziness, tinnitus, pale and thin tongue, and deep, fine pulse. The study also confirmed that the therapeutic effect of a 6-month intervention period was significantly superior to that of a 3-month intervention period, suggesting that traditional Chinese medicine interventions for mild cognitive impairment in older adults require a sufficient treatment duration to achieve cumulative therapeutic benefits [15].

Han Qin et al. found through their research that multiple active components in Compound Congrong Yizhi Capsules can effectively target various pathological pathways involved in the development of MCI, thereby regulating the PI3K/AKT signaling pathway via a multi-pathway approach for the treatment of MCI [16]. Xie Shuai et al. treated 32 cases of mild cognitive impairment associated with leukoaraiosis (LAMCI) using Yangxue Qingnao Pill in combination with acetylcholine inhibitors; statistical analysis demonstrated that this combined treatment approach for LAMCI is clinically effective, capable of reducing oxidative stress-induced damage, improving cognitive function, and enhancing activities of daily living [17].

3. Research Progress on the Use of Non-Pharmacological Traditional Chinese Medicine Therapies in the Treatment of Mild Cognitive Impairment in Older Adults

3.1 Exercise Therapy

In the 1980s, exercise therapy had already attracted significant attention from numerous researchers. For instance, Dustman et al. conducted a study investigating the relationship between aerobic exercise and overall cognitive function in older adults; the findings demonstrated that aerobic exercise exerts a positive influence on the cognitive function of older adults, specifically manifested in improvements in memory capacity for language and auditory functions, inhibitory control, and visuospatial attention [18]. Following aerobic exercise, older adults with mild cognitive impairment (MCI) exhibit changes in brain structure and function, with increased volumes of both gray and white matter regions, thereby helping to prevent the reduction of hippocampal volume and delay the atrophy of the cerebral cortex. To determine whether aerobic exercise serves as a protective factor among Chinese MCI patients, Liu Dongqi et al. employed a meta-analysis to examine published literature on exercise interventions for MCI over a ten-year period (2008-2018), demonstrating that aerobic exercise can improve cognitive performance in MCI patients and thus constitutes a protective factor [19]. Meanwhile, traditional Chinese medicine-based exercise therapies—such as Baduanjin, Tai Chi, and Wuqinxi—also play an important role in regulating the mental state, enhancing physical fitness, and improving cognitive function in older adults. Baduanjin consists of eight distinct movements and is designed to promote qi circulation and blood flow, unblock the meridians, and harmonize the five zang and six fu organs; it can help strengthen the body, nourish the mind, and prevent or treat various ailments. The primary characteristic of Tai Chi lies in the close integration of “consciousness, breath regulation, and movement”;

through adjusting visceral functions, replenishing qi and blood, regulating qi movement, and unblocking the meridians, it exerts a preventive and therapeutic effect on various diseases.

Traditional Chinese health-preserving exercises, such as Tai Chi and Baduanjin, differ from conventional aerobic activities like brisk walking in terms of their more complex and varied movements; they require learners to repeatedly memorize the key points and sequence of each movement during the practice process, rather than merely repeating simple movements. Therefore, the process of learning and practicing traditional health-preserving exercises—such as Baduanjin or Tai Chi—constitutes a cognitive intervention approach for memory training. Wang Qianbei et al. employed a quasi-experimental research design and conveniently recruited 108 elderly individuals aged 65-85 years with mild cognitive impairment (MCI), randomly assigning them to either a control group ($n = 54$) or an intervention group ($n = 54$). Both groups received educational sessions on MCI prevention and were provided with health handbooks; however, the control group received only health education and maintained their routine physical activity, while the intervention group additionally participated in Tai Chi training at least four times per week for a minimum of 40 minutes per session over a period of three months. Changes in memory and executive function were assessed before and after the intervention using the Auditory Verbal Learning Test (AVLT) and the Trail-Making Test-A (TMT-A). After three months of intervention, the AVLT long-delay recall score in the intervention group of elderly MCI patients was significantly higher than that in the control group ($P < 0.01$) [20]. Li Shuzhen employed a randomized parallel-group study design, randomly assigning 87 eligible participants into three groups: the Baduanjin group, the brisk walking group, and a health education control group. The Baduanjin group and the brisk walking group received Baduanjin or brisk walking exercise interventions, respectively, in addition to standard health education; these interventions were conducted three times per week, for 60 minutes each session, over a period of 6 months. The intervention results indicated that 6 months of Baduanjin exercise may improve overall cognitive function and memory in elderly individuals with mild cognitive impairment (MCI), and the effect may be superior to that of brisk walking exercise [21]. ZHENG et al. randomly assigned elderly MCI patients to either a Baduanjin training group, a brisk walking training group, or a conventional physical activity control group. Using magnetic resonance imaging (MRI), the Montreal Cognitive Assessment (MoCA), and the Wechsler Memory Scale- Chinese Revised Edition (WMS-CR), they measured gray matter volume (GMV), overall cognitive ability, and memory at both baseline and post-intervention. This study found that practicing Baduanjin increased the gray matter volume in the temporal lobe, frontal lobe, occipital lobe, cingulate cortex, and parietal lobe, thereby improving spatial discrimination, abstract thinking, memory, executive function, selective attention, and processing speed in elderly MCI patients, as well as enhancing their overall cognitive function [22]. Liu et al. found that both Baduanjin and Tai Chi can ameliorate cognitive decline in older adults by modulating the default mode network; however, the underlying mechanisms differ: Baduanjin achieves this by reducing the resting-state

functional connectivity between the medial prefrontal cortex and the orbitofrontal cortex, whereas Tai Chi exerts its effect by increasing the resting-state functional connectivity between the medial prefrontal cortex and the right caudate nucleus, as well as between the posterior cingulate cortex and the right caudate nucleus [23].

3.2 Acupuncture-Moxibustion Therapy

Ancient Chinese medical classics have recorded abundant experience of acupuncture-moxibustion in treating cognitive dysfunctions such as forgetfulness and dementia. Acupoints including Baihui (GV20), Shenmen (HT7) and Gao Huang (BL43) are frequently adopted for ailments similar to mild cognitive impairment and dementia. As stated in Great Compendium of Acupuncture and Moxibustion: “For loss of will and dementia: Shenmen (HT7), Guiyan (Extra), Baihui (GV20), Jiuwei (CV15)” [24].

In a clinical comparative study investigating the efficacy of acupuncture combined with transcranial direct current stimulation (tDCS) in the rehabilitation of post-stroke cognitive impairment [25], by Zhang Shasha et al., 92 patients with mild to moderate post-stroke cognitive dysfunction admitted to the hospital were randomly assigned to either an observation group or a control group ($n = 46$ in each group). The control group received conventional rehabilitation therapy, while the treatment group received additional acupuncture combined with tDCS therapy on top of the conventional treatment—five sessions per week over a period of 4 weeks. Using scores from the MMSE and MoCA as assessment criteria, statistical analysis revealed that both groups showed improvement in their cognitive function scores before and after treatment; moreover, the treatment group demonstrated greater improvement than the control group. This study suggests that the combined use of acupuncture and tDCS can effectively enhance learning, memory, and cognitive function. In another study examining the clinical efficacy of acupuncture combined with auricular pressure therapy in patients with post-stroke cognitive dysfunction, Yu Hongmei selected 62 elderly patients who had previously received stroke treatment in a hospital and divided them into a control group and a combined treatment group. The control group received conventional baseline treatment, while the combined treatment group received additional acupuncture and auricular pressure therapy on top of the conventional treatment for a duration of two months. The MoCA, MMSE, and ADL scales were used as assessment tools. Statistical analysis revealed that there were no significant differences in cognitive function or activities of daily living (ADL) scores between the control group and the combined treatment group before treatment; however, after treatment, the combined treatment group exhibited superior outcomes in both cognitive function and ADL compared to the control group, with a significant improvement in cognitive function levels. This trial demonstrates that the combined therapy of acupuncture and auricular pressure therapy can enhance the cognitive function and activities of daily living in elderly patients [26]. Yuan Hongwei et al. investigated the efficacy of combining acupuncture with cognitive training in patients with post-stroke cognitive impairment. They enrolled 84 such patients from both the inpatient and outpatient departments of a hospital and randomly assigned them to an

observation group ($n = 42$) and a control group ($n = 42$). The control group received standard cognitive training, while the observation group received additional acupuncture at acupoints such as Baihui and Sishengcong, as well as moxibustion at acupoints such as Shendao and Fengfu, administered five times per week over four consecutive weeks. The MMSE and MoCA scores were used as outcome measures. Statistical analysis revealed that both groups showed improvement following treatment, with the observation group demonstrating greater improvement than the control group. This study suggests that the combination of acupuncture and cognitive training can enhance cognitive and daily living abilities in patients with post-stroke cognitive impairment [27]. Zhang Han et al. conducted a trial examining the use of head acupoint therapy for treating cognitive impairment, enrolling 50 patients with post-stroke cognitive impairment and dividing them into a control group ($n = 25$) and an observation group ($n = 25$). The control group received targeted rehabilitation training, whereas the observation group received additional acupuncture at four acupoints—Baihui, Sishengcong, Benshen, and Shenting—in addition to the standard treatment. The intervention was administered five times per week for four consecutive weeks. At 4 weeks and 12 weeks post-treatment, the MMSE and MoCA scores were used as outcome measures to assess treatment efficacy. Statistical analysis showed that both groups exhibited improvement in cognitive function and daily living abilities; moreover, all parameters in the observation group were higher than those in the control group. The scores at 4 weeks post-treatment were consistently higher than those at 12 weeks post-treatment [28]. This experimental evidence demonstrates that acupuncture therapy can be effective in treating cognitive dysfunction, and that the improvement of cognitive function is a process requiring long-term adherence.

3.3 Massage Therapy

In clinical practice, acupoint massage is often combined with acupuncture therapy. With the continuous advancement of medical technology and research, massage therapy has further evolved, and its efficacy in the treatment of mild cognitive impairment has become increasingly evident. As a result, researchers have begun investigating the optimal therapeutic approach for employing massage therapy in the management of mild cognitive impairment.

Feng Xiaomin et al. [29] divided the study subjects into a massage group and a control group; the massage group received guided and trained acupoint massage therapy for patients with MCI, while the control group received only general health education; cognitive function was assessed in both groups before and after the intervention using the Mini-Mental State Examination (MMSE) and the four dimensions of the Wechsler Memory Scale-Revised (WMS-RC). The study found a significant difference in scores between the two groups before and after the intervention, with both the MMSE and WMS-RC scores showing a clear upward trend, indicating an improvement in cognitive status. The intervention primarily targeted acupoints on the head and the cerebral reflex zones on the sole of the foot; these techniques stimulate multiple acupoints on the head, improve cerebral blood circulation, promote the metabolism of brain cells, activate cerebral nerve cells,

release neurotransmitters, and engage target organs, thereby achieving the effects of brain health maintenance and cognitive enhancement, which in turn helps delay cerebral aging and atrophy as well as prevent the onset of dementia. Wan Chengxian [30] et al. employed a controlled trial design, dividing the study subjects into a control group and an experimental group; the control group received conventional nursing care, while the experimental group received additional acupoint massage therapy. The scores on the Hasegawa Dementia Scale (HDS), Mini-Mental State Examination (MMSE), Activities of Daily Living Scale (ADL), and Quality of Life Scale (QOL-AD) were recorded for both groups before intervention, at the end of the 3-month intervention period, and at the end of the 6-month intervention period. The study found that there were statistically significant differences in AD scale scores between the two patient groups before and after intervention; long-term acupoint massage can promote metabolic activity in patients with cognitive impairment, improve blood supply to the central nervous system, and alleviate cerebral atrophy, thereby optimizing cerebral function, reducing the severity of cognitive impairment, and enhancing patients' self-care ability and quality of life. Xu Guangzhen [31] conducted a randomized controlled trial involving 60 patients with mild cognitive impairment (MCI). The treatment group received auricular acupressure pellet therapy combined with auricular massage, while the control group received health education. The Activities of Daily Living (ADL) scale scores and Mini-Mental State Examination (MMSE) scores of the two groups were recorded and compared at baseline, 1 month, and 3 months after treatment. The results showed that the combination of auricular acupressure pellet therapy and auricular massage produced statistically significant improvements in both daily living ability and cognitive function in patients with MCI, demonstrating the superior efficacy of this method. The findings indicate that this combined auricular therapy is a cost-effective external treatment for improving the daily living ability and cognitive function of patients with mild cognitive impairment.

3.4 Music Therapy

The notes "Gong, Shang, Jue, Zhi, and Yu" represent the ancient pentatonic scale. The Five Elements theory in Traditional Chinese Medicine (TCM) correlates these five notes with the Five Elements and employs Five Elements music therapy for the early prevention and treatment of emotional disorders; in modern TCM practice, this Five Notes Therapy is increasingly being applied in the treatment of cognitive dysfunction.

Miao Xiaohong randomly assigned 60 patients with mild cognitive impairment (MCI) into a control group and a treatment group, with 30 patients in each group. The control group received conventional treatment, while the treatment group received Ziwu Liuzhu Time-Adjusted Five Elements Music Therapy in addition to conventional treatment. Clinical studies revealed that administering music during the time periods corresponding to the qi and blood circulation patterns of the five zang organs can enhance the resonance intensity between music and the respective meridians, provide moderate stimulation to the brain and the body, activate their latent memory compensatory regions, and improve memory

function. The study results showed that the MMSE and MoCA scores in the treatment group increased significantly, while the HAMA score decreased markedly—this effect was particularly pronounced at day 30 of treatment. These findings indicate that Ziwu Liuzhu Time-Adjusted Five Elements Music Therapy can, to some extent, improve cognitive function in elderly patients with mild cognitive impairment and alleviate their anxiety symptoms, thereby demonstrating the efficacy of music therapy in the treatment of mild cognitive dysfunction [32]. Ruan Chunrui and colleagues conducted a controlled trial involving 80 patients with post-stroke mild cognitive impairment who were randomly assigned to either a control group receiving conventional cognitive intervention and rehabilitation guidance or a treatment group receiving music therapy intervention. The study found that all outcome measures in the treatment group were higher than those in the control group, suggesting that music therapy intervention can promote the recovery of cognitive function in patients with post-stroke mild cognitive impairment, holds significant value in improving memory function, and can enhance the patients' quality of life [33]. Cai Yunjiang et al. randomly assigned study participants to an intervention group and a control group according to randomized allocation principles; the control group received no treatment, whereas the intervention group received neuro-music therapy. Analysis of the efficacy of neuro-music therapy in treating amnesic mild cognitive impairment (aMIC) revealed that, following the intervention, the MMSE and DSR scores in the intervention group were both higher than those before the intervention. This indicates that neuro-music therapy can enhance memory function in young elderly individuals with aMIC. The central nervous system exhibits strong functional and structural plasticity; after exposure to repetitive, auditory stimulation and targeted training of a certain intensity, the function of a damaged brain region can be compensated for by adjacent, intact brain areas, thereby facilitating the recovery of neural function and improving the cognitive performance of young elderly individuals with aMIC. Additionally, this approach stimulates their imagination, enhances their language comprehension and expressive abilities, and promotes the restoration of neural function, ultimately improving their overall cognitive capacity [34].

4. Conclusion

Based on the research progress summarized in this paper, it can be seen that both Chinese herbal medicine and non-pharmacological therapies have demonstrated significant efficacy and potential in the treatment of mild cognitive impairment (MCI) in the elderly. Chinese herbal formulas and patent medicines, through multi-pathway and multi-target mechanisms of action, can effectively improve patients' cognitive function, delay disease progression, and offer advantages in terms of safety and tolerability. Non-pharmacological interventions such as exercise, acupuncture, massage, and music therapy provide a comprehensive and integrated treatment approach for MCI patients by regulating the body and mind, improving cerebral blood circulation, and enhancing neurological function.

These studies not only provide a solid theoretical foundation and empirical support for further research on traditional

Chinese medicine (TCM) in the treatment of MCI, but also offer scientific guidance for clinical practice, effectively promoting and disseminating the remarkable therapeutic effects of TCM in the management of MCI, and advancing the further development and application of TCM in the field of cognitive disorders. In the future, more in-depth studies are required to explore the mechanisms underlying TCM treatment for MCI. The potential of characteristic TCM therapies in encouraging self-health care, active prevention and delaying MCI onset in the elderly should be exploited to improve their quality of life and advance healthy aging.

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