Table 1. Characteristics of included studies in this review.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **No** | **Title** | **language** | **Author** | **Country** | **Time** | **Patient** | **Intervention** | **Number** | **Course** | **Outcome** |
| 1 | Tai Ji Quan and global cognitive function in older adults with cognitive impairment: A pilot study | English | Fuzhong Li | USA and CHINA | 2014 | MCI | 14-week Yang style tai Ji: Moving for Better Balance (TJQMBB) program ; | Taiji group( n=20 ) Control group (n = 20) | 14w | MMSE |
| 2 | Tai Chi Versus Conventional Exercise to Improve Cognitive Performance in Older Adults With Mild Cognitive Impairment | English | [Angus P Yu](https://pubmed.ncbi.nlm.nih.gov/?term=Yu+AP&cauthor_id=35614144" \o "https://pubmed.ncbi.nlm.nih.gov/?term=Yu+AP&cauthor_id=35614144) | HONG KONG, CHINA | 2022 | MCI | Tai Chi group: 24 weeks of Yang-style Tai Chi training three times a week for 60 minutes each session; Conventional Exercise group: 24 weeks of fitness training three times a week for 60 minutes each session; Control group: no intervention. | Tai Chi group(n=10) ； Exercise group(n=12)； Control group(n=.12) | 24w | MOCA |
| 3 | Tai chi qigong as a means to improve night-time sleep quality among older adults with cognitive impairment: A pilot randomized controlled trial | English | Aileen WK Chan | HONG KONG, CHINA | 2016 | MCI | Yang and Wu style tai Ji and Baduanjin,Wuqinxi,Liuzijue qigong sessions twice a week for 2 months, 60 minutes each session | Taiji group (n = 27 ）  Control group (n = 25) | 8w | MMSE |
| 4 | Simplified Tai Chi 6-Form Apparatus for Balance in Elderly People with Alzheimer's Disease | English | Lin, Y. C. | TAI WAN, CHINA | 2020 | MCI | The Yang style tai Ji group (TCGr) completed an 8-week training course for the Simplified Yang style tai Ji 6-Form Apparatus | Taiji group (n = 11 ） Control group (n = 10) | 8w | MMSE |
| 5 | Mind-Body Exercise Modulates Locus Coeruleus and Ventral Tegmental Area Functional Connectivity in Individuals With Mild Cognitive Impairment | English | Liu Jiao | CHINA | 2021 | MCI | Participants were randomized into Qigong, brisk walking, or a healthy education control group for 6 months. The exercise groups participated in sessions 3 days/week, 60 min/day. | Qigong group (n = 20) Control group (n = 20) | 24w | MOCA |
| 6 | Mental and Physical Activities Delay  Cognitive Decline in Older Persons  with Dementi | English | Jing Tao ; | Hong Kong CHINA | 2014 | Early to early-middle stages of dementia | mahjong. Taiji group. Control group | mahjong（n=36） Taiji group (n = 39) Control group (n = 35) | 24w | MOCA |
| 7 | Effects of Tai Chi on cognition and instrumental activities of daily living in community dwelling older people with mild cognitive impairment | English | Siu, Mei Yi | Hong Kong CHINA | 2017 | MCI | The intervention group received 16 weeks of Yang-style Tai Chi training, two sessions per week, each lasting one hour | Taiji group (n = 80)  Control group (n= 80) | 16w | MMSE |
| 8 | Effects of Tai Chi combined with tDCS on cognitive function in patients with MCI: a randomized controlled trial | English | Ying Xu | USA and CHINA | 2023 | MCI | Taiji and tDCS.Tai Ji. ontrol | Taiji and tDCS(n=44 ) Tai Ji(n=49) ontrol group (n = 44) | 24w | MOCA |
| 9 | Effects of Tai Chi Chuan on Cognitive Function in Adults 60 Years or Older With Type 2 Diabetes and Mild Cognitive Impairment in China: A Randomized Clinical Trial | English | Yannan Chen | USA and CHINA | 2023 | MCI | Yang style tai Ji and walking training, both for 60 min/session, 3 times/wk for 24 weeks | Taiji group (n = 110) Control group (n = 110) | 36w | MOCA |
| 10 | Effects of mind-body exercise baduanjin on cognition in community-dwelling older people with mild cognitive impairment: a randomized controlled trial | English | Xia Rui | CHINA | 2022 | MCI | Baduanjin exercise group received 24 weeks of Baduanjin exercise training, 60 min sessions, 3 days per week; Brisk walking group received 24 weeks of brisk walking, 60 min per session, 3 sessions per week / | Qigong group (n = 70) Control group (n = 65) | 24w | MOCA |
| 11 | Effects of exergaming based Tai Chi on Cognition and dual task gait in older adults with mild cognitive Impairment a randomized control trial | English | Chen Liang Liu | CHINA | 2022 | MCI | EXER-TC and TC groups received 36 training sessions (three 50-min sessions per week) for 12 weeks | EXER-taiji(n=16Taiji group(n=17) Control group (n = 19) | 12W | MOCA |
| 12 | The effects of a multimodal intervention on outcomes of persons with early-stage dementia | English | Sandy C. Burgener | USA | 2008 | Early to early-middle stages of dementia | 40-week intervention, including Taiji exercises, and support group participation | Taiji group (n = 24)  Control group (n = 19) | 40w | MMSE |
| 13 | Clinical study of acupuncture combined with Tai Chi in the treatment of mild cognitive impairment caused by cerebral small vessel disease | Chinese | Ze Yu Shen | CHINA | 2021 | MCI | Acupuncture combined with Yang style tai Ji intervention; the control group used only Yang style tai Ji intervention. | A+Taiji(n = 31)；  Control group (n = 31) | 8w. | MOCA |
| 14 | A study on the evaluation of the clinical efficacy of Baduanjin in patients with mild cognitive dysfunction | Chinese | Qian Yang | CHINA | 2019 | MCI | Ba duan jin qigong 5 times a week, 40 minutes each session, for 24 weeks. The control group received no intervention | Qigong group (n = 32) Control group (n = 32) | 24w | MOCA |
| 15 | The effect of Naoling decoction combined with Tai Chi on the rehabilitation of patients with Alzheimer's disease | Chinese | Ri Zhen Li | CHINA | 2013 | Early-stage Alzheimer's disease | he treatment group received Naoling Decoction combined with Yang style tai Ji exercise, while the control group received conventional treatment | Naoling +Ytaiji(n = 32) Control group (n = 30) | 12w | MMSE |
| 16 | Study on the Rehabilitation Effects of Six-Character Formula of Health Qigong on Mild Cognitive Impairment in the Elderly | Chinese | Xin Tuan Zheng | CHINA | 2013 | MCI | "Six Healing Sounds" fitness Qigong exercise, practiced twice daily for 30 minutes each session, 5 days a week for 6 months | Qigong group (n = 45) Control group (n = 43) | 24w | MOCA |
| 17 | The Impact of Virtual Reality-Based Baduanjin Exercise on Mild Cognitive Impairment in Elderly Patients in Nursing Homes | Chinese | Sun Zhi Chen | CHINA | 2021 | MCI | VR-based qigong 50 minutes per session, three times a week for 24 weeks | VR qigong (n = 29) Control group (n = 28) | 24w | MOCA |
| 18 | Study on the Intervention Effect of Continuous Health Qigong Exercise on Mild Cognitive Impairment in the Elderly | Chinese | Jun Cai | CHINA | 2018 | MCI | 6 months of fitness Qigong exercises including Yi Jin Jing, Ba Duan Jin, Wu Qin Xi, Liu Zi Jue | Qigong group (n = 28), Control group (n = 30) | 24w | MOCA,MMSE |
| 19 | Clinical Observation of the Efficacy of Eight-Style Tai Chi on Mild Cognitive Impairment Caused by Lacunar Infarction | Chinese | Mei Ling Huang | CHINA | 2021 | MCI | Yang style tai Ji group practiced Eight Style Taijiquan for 30 minutes | Taiji group (n = 33) Control group (n = 33) | 24w | MOCA |
| 20 | Clinical Study of Baduanjin Combined with Transcranial Direct Current Stimulation in Treating Mild Cognitive Impairment After Stroke | Chinese | Jin Ping Feng | CHINA | 2022 | MCI | The control group received transcranial direct current stimulation, while the observation group Baduanjin exercise | T+qigong (n = 47) Control group (n = 47) | 8w | MOCA,MMSE |
| 21 | The Impact of Baduanjin on the Cognitive Levels of Patients with Mild Cognitive Impairment | Chinese | Tao Liu | CHINA | 2018 | MCI | Baduanjin exercise intervention for 6 months | Qigong group (n = 30） Control group (n = 30) | 24w | MOCA |
| 22 | Experimental Study on Tai ji Soft Ball Exercise in the Treatment of Senile Dementia | Chinese | Yong Zhou | CHINA | 2016 | Early to early-middle stages of dementia | Taijiball(softball) exercise under professional guidance, compared to jogging in the control group | Taijiball group (n =18) Control group (n = 18) | 32w | MMSE |
| 23 | Study on the Impact and Mechanism of Health Qigong Yangfei Prescription on Cognitive Function in Patients with Stable Chronic Obstructive Pulmonary Disease | Chinese | Min Zhuang | CHINA | 2023 | Severity levels GOLD 1-3 (FEV1≥30%) | Yangfeifang Qigong exercise, 5 days a week, 2 sessions per day, 35 minutes per session for 12 weeks | Qigong group (n = 18)  Control group (n = 18) | 12w | MOCA |
| 24 | 59.Study on the Impact of Health Qigong Twelve Duanjin on Patients with Mild Cognitive Impairment | Chinese | Heng Jia Liu | CHINA | 2020 | MCI | Twelve Dan Jin qigong Exercises performed 5 times per week, 40 minutes per session, over 24 weeks | Qigong group (n = 30) Control group (n = 30) | 24w | MOCA |

Table 2. Ranking table of interventions

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| SUCRA | | | | | |
| **Group** | **Intervention** | **MOCA** | **NO** | **MMSE** | **NO** |
| MOCA.MMSE | Etaijigame | 0.541 | / | / | / |
| Qigong | 0.671 | 2 | 0.3139417 | / |
| QigongandT | 0.438 | / | 0.40127 | / |
| Taiji | 0.615 | **3** | 0.375725 | / |
| TaijitDCS | 0.197 | / | / | / |
| Naoandtaiji | / | / | 0.703 | 2 |
| Taijiandqigong | / | / | 0.670 | 3 |
| Taijiball | / | / | 0.992 | 1 |
| Aandtaiji | 0.927 | 1 | / | / |
| MOCA Subgroup  MMSE Subgroup | BDJqigong | 0.467 | / | / | / |
| BDJqigongandT | 0.375 | / | 0.428 | / |
| YWLBqigong | 0.449 | / | 0.324 | / |
| Eytaijigame | 0.582 | 3 | / | / |
| LZJqigong | 0.563 | / | 0.391 | / |
| SEDJqigong | 0.871 | 1 | / | / |
| YFFqigong | 0.494 | / | / | / |
| Ytaiji | 0.560 | / | 0.392 | / |
| YtaijitDs | 0.192 | / | / | / |
| Naoandytaiji | / | / | 0.708 | 2 |
| Taijiandqigong | / | / | 0.676 | 3 |
| Taijiball | / | / | 0.983 | 1 |
| Aandytaiji | 0.850 | 2 | / | / |

1.Qigong: Qi gong; 2. QigongandT: Qigong and Transcranial Direct Current Stimulation (tDCS) therapy; 3. Etaijigame: Exergaming-Based Tai Chi, a body movement-controlled computer Tai Chi game; 4. Taiji: Tai Chi or Tai ji; 5. Aandtaiji: Acupuncture and Tai ji; 6. TaijitDcs: Tai Chi combined with Transcranial Direct Current Stimulation (tDCS); 7. BDJqigong: Baduanjin Qigong; 8. BDJqigongandT: Baduanjin Qigong and Transcranial Direct Current Stimulation (tDCS) therapy; 9. LZJqigong: Liuzijue Qigong; 10. SEDJqigong: Twelve Duanjin Qigong; 11. YFFqigong: Yifei Fang Qigong; 12. YWLBqigong: Yijinjing Qigong, Wuqinxi Qigong, Liuzijue Qigong, and Baduanjin Qigong; 13. EYtaijigame: Body movement-controlled computer Yang style Tai ji game; 14. Ytaiji: Yang style of Tai ji; 15. AandYtaiji: Acupuncture combined with Yang style Tai ji; 16. YtaijitDcs: Yang style Tai ji combined with Transcranial Direct Current Stimulation (tDCS); 17. Naoandtaiji: Nao Ling Tang and Tai ji; 18. Taijiandqigong: Tai ji and Qigong, organized by combining Yang-style and Wu-style Tai ji with Ba Duan Jin Qigong, Wu Qin Xi Qigong, and Liu Zi Jue Qigong; 19. Taijiball: Tai ji soft ball exercise; 20. NaoandYtaiji: Nao Ling Tang and Yang style of Tai ji. 21.SUCRA:Surface Under the Cumulative Ranking Curve

Supplement Table 1 literature search

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Query | Search Details | Results | Time |
| 4 | (((((((((((((Tai Ji[MeSH Terms]) OR (Tai Chi[Title/Abstract])） OR (Tai Chi soft ball exercise[Title/Abstract])) OR (Chen style Tai Chi [Title/Abstract])) OR (Yang style Tai Chi [Title/Abstract])) OR (Sun style Tai Chi [Title/Abstract])) OR (Wu style Tai Chi [Title/Abstract])) OR (Tai-ji[Title/Abstract])) OR (Chi, Tai[Title/Abstract])) OR (Tai Ji Quan[Title/Abstract])) OR (Ji Quan, Tai[Title/Abstract])) OR (Quan, Tai Ji[Title/Abstract])) OR (Taiji[Title/Abstract])) OR (T'ai Chi[Title/Abstract])) OR (Tai Chi Chuan[Title/Abstract])) OR (Taiji quan[Title/Abstract])) OR (Taijiquan[Title/Abstract])) OR ((((((((((((((((((((Qigong[MeSH Terms]) OR (Qi Gong[Title/Abstract])) OR(Yangfeifangqigong[Title/Abstract])) OR (Twelve Dan Jin qigong[Title/Abstract])) OR (Ch'i Kung[Title/Abstract])) OR (chi kung[Title/Abstract])) OR (chigung[Title/Abstract])) OR (qi gong[Title/Abstract])) OR (qigong exercise[Title/Abstract])) OR (Eight Pieces of Brocade[Title/Abstract])) OR (Baduanjin[Title/Abstract])) OR (Muscle Changing Classic[Title/Abstract])) OR (Yijinjing[Title/Abstract])) OR (Five Animal Frolics[Title/Abstract])) OR (Wuqinxi[Title/Abstract])) OR (Six-Character Formula[Title/Abstract])) OR (Liuzijue[Title/Abstract])) OR (Guiding[Title/Abstract] AND Pulling Techniques[Title/Abstract])) OR (Daoyinshu[Title/Abstract])) OR (Chinese Kung Fu[Title/Abstract]))) AND ((((((((((((((((((((((((((((((((((((Cognitive Dysfunction[MeSH Terms]) OR (cognitive defect[Title/Abstract])) OR (Cognitive Dysfunctions[Title/Abstract])) OR (Dysfunction, Cognitive[Title/Abstract])) OR (Dysfunctions, Cognitive[Title/Abstract])) OR (Cognitive Impairments[Title/Abstract])) OR (Impairment, Cognitive[Title/Abstract])) OR (Impairments, Cognitive[Title/Abstract])) OR (Disorder, Cognitive[Title/Abstract])) OR (Disorders, Cognitive[Title/Abstract])) OR (Mild Cognitive Impairment[Title/Abstract])) OR (Cognitive Impairment, Mild[Title/Abstract])) OR (Cognitive Impairments, Mild[Title/Abstract])) OR (?Impairment, Mild Cognitive[Title/Abstract])) OR (Impairments, Mild Cognitive[Title/Abstract])) OR (Mild Cognitive Impairments[Title/Abstract])) OR (Cognitive Decline[Title/Abstract])) OR (Cognitive Declines[Title/Abstract])) OR (Decline, Cognitive[Title/Abstract])) OR (Declines, Cognitive[Title/Abstract])) OR (Mental Deterioration[Title/Abstract])) OR (Deterioration, Mental[Title/Abstract])) OR (Deteriorations, Mental[Title/Abstract])) OR (Mental Deteriorations[Title/Abstract])) OR (cognition disorder[Title/Abstract])) OR (cognition disorders[Title/Abstract])) OR (cognitive defects[Title/Abstract])) OR (cognitive deficit[Title/Abstract])) OR (cognitive disability[Title/Abstract])) OR (cognitive disorder[Title/Abstract])) OR (cognitive disorders[Title/Abstract])) OR (cognitive impairment[Title/Abstract])) OR (delirium, dementia, amnestic, cognitive[Title/Abstract])) OR (disorders[Title/Abstract])) OR (overinclusion[Title/Abstract])) OR (response interference[Title/Abstract])) | ("Tai-ji"[MeSH Terms] OR "tai chi"[Title/Abstract] OR ((("Tai-ji"[MeSH Terms] OR ("Tai"[All Fields] AND "Ji"[All Fields]) OR "Tai-ji"[All Fields] OR ("Tai"[All Fields] AND "Chi"[All Fields]) OR "tai chi"[All Fields]) AND "soft"[All Fields]) AND "ball exercise"[Title/Abstract]) OR "chen style tai chi"[Title/Abstract] OR "yang style tai chi"[Title/Abstract] OR "sun style tai chi"[Title/Abstract] OR "wu style tai chi"[Title/Abstract] OR "Tai-ji"[Title/Abstract] OR "chi tai"[Title/Abstract] OR "tai ji quan"[Title/Abstract] OR "ji quan tai"[Title/Abstract] OR "quan tai ji"[Title/Abstract] OR "Taiji"[Title/Abstract] OR "t ai chi"[Title/Abstract] OR "tai chi chuan"[Title/Abstract] OR "taiji quan"[Title/Abstract] OR "Taijiquan"[Title/Abstract] OR ("qigong"[MeSH Terms] OR "qi gong"[Title/Abstract] OR (("Twelve"[All Fields] AND ((jin, dan[Author] OR dan, jin[Author]) OR dan jin[Author])) AND "qigong"[Title/Abstract]) OR "ch i kung"[Title/Abstract] OR "chi kung"[Title/Abstract] OR "chigung"[Title/Abstract] OR "qi gong"[Title/Abstract] OR "qigong exercise"[Title/Abstract] OR ((("eight"[All Fields] OR "eights"[All Fields]) AND ("piece"[All Fields] OR "pieced"[All Fields] OR "pieces"[All Fields] OR "piecing"[All Fields])) AND "Brocade"[Title/Abstract]) OR "Baduanjin"[Title/Abstract] OR ((("muscle s"[All Fields] OR "muscles"[MeSH Terms] OR "muscles"[All Fields] OR "muscle"[All Fields]) AND ("change"[All Fields] OR "changed"[All Fields] OR "changes"[All Fields] OR "changing"[All Fields] OR "changings"[All Fields])) AND "Classic"[Title/Abstract]) OR "Yijinjing"[Title/Abstract] OR "five animal frolics"[Title/Abstract] OR "Wuqinxi"[Title/Abstract] OR "six character formula"[Title/Abstract] OR "Liuzijue"[Title/Abstract] OR ("Guiding"[Title/Abstract] AND "pulling techniques"[Title/Abstract]) OR "Daoyinshu"[Title/Abstract] OR "chinese kung fu"[Title/Abstract])) AND ("cognitive dysfunction"[MeSH Terms] OR "cognitive defect"[Title/Abstract] OR "cognitive dysfunctions"[Title/Abstract] OR "dysfunction cognitive"[Title/Abstract] OR "dysfunctions cognitive"[Title/Abstract] OR "cognitive impairments"[Title/Abstract] OR "impairment cognitive"[Title/Abstract] OR "impairments cognitive"[Title/Abstract] OR "disorder cognitive"[Title/Abstract] OR "disorders cognitive"[Title/Abstract] OR "mild cognitive impairment"[Title/Abstract] OR "cognitive impairment mild"[Title/Abstract] OR "cognitive impairments mild"[Title/Abstract] OR "impairment mild cognitive"[Title/Abstract] OR "impairments mild cognitive"[Title/Abstract] OR "mild cognitive impairments"[Title/Abstract] OR "cognitive decline"[Title/Abstract] OR "cognitive declines"[Title/Abstract] OR "decline cognitive"[Title/Abstract] OR "declines cognitive"[Title/Abstract] OR "mental deterioration"[Title/Abstract] OR "deterioration mental"[Title/Abstract] OR (("deteriorate"[All Fields] OR "deteriorated"[All Fields] OR "deteriorates"[All Fields] OR "deteriorating"[All Fields] OR "Deterioration"[All Fields] OR "Deteriorations"[All Fields] OR "deteriorative"[All Fields]) AND "Mental"[Title/Abstract]) OR "mental deteriorations"[Title/Abstract] OR "cognition disorder"[Title/Abstract] OR "cognition disorders"[Title/Abstract] OR "cognitive defects"[Title/Abstract] OR "cognitive deficit"[Title/Abstract] OR "cognitive disability"[Title/Abstract] OR "cognitive disorder"[Title/Abstract] OR "cognitive disorders"[Title/Abstract] OR "cognitive impairment"[Title/Abstract] OR "delirium dementia amnestic cognitive"[Title/Abstract] OR "Disorders"[Title/Abstract] OR "overinclusion"[Title/Abstract] OR "response interference"[Title/Abstract]) | 388 | 8:09:11 |
| 3 | (((((((((((((((((((Qigong[MeSH Terms]) OR (Qi Gong[Title/Abstract])) OR(Yangfeifangqigong[Title/Abstract])) OR (Twelve Dan Jin qigong[Title/Abstract])) OR (Ch'i Kung[Title/Abstract])) OR (chi kung[Title/Abstract])) OR (chigung[Title/Abstract])) OR (qi gong[Title/Abstract])) OR (qigong exercise[Title/Abstract])) OR (Eight Pieces of Brocade[Title/Abstract])) OR (Baduanjin[Title/Abstract])) OR (Muscle Changing Classic[Title/Abstract])) OR (Yijinjing[Title/Abstract])) OR (Five Animal Frolics[Title/Abstract])) OR (Wuqinxi[Title/Abstract])) OR (Six-Character Formula[Title/Abstract])) OR (Liuzijue[Title/Abstract])) OR (Guiding[Title/Abstract] AND Pulling Techniques[Title/Abstract])) OR (Daoyinshu[Title/Abstract])) OR (Chinese Kung Fu[Title/Abstract]) | "qigong"[MeSH Terms] OR "qi gong"[Title/Abstract] OR (("Twelve"[All Fields] AND ((jin, dan[Author] OR dan, jin[Author]) OR dan jin[Author])) AND "qigong"[Title/Abstract]) OR "ch i kung"[Title/Abstract] OR "chi kung"[Title/Abstract] OR "chigung"[Title/Abstract] OR "qi gong"[Title/Abstract] OR "qigong exercise"[Title/Abstract] OR ((("eight"[All Fields] OR "eights"[All Fields]) AND ("piece"[All Fields] OR "pieced"[All Fields] OR "pieces"[All Fields] OR "piecing"[All Fields])) AND "Brocade"[Title/Abstract]) OR "Baduanjin"[Title/Abstract] OR ((("muscle s"[All Fields] OR "muscles"[MeSH Terms] OR "muscles"[All Fields] OR "muscle"[All Fields]) AND ("change"[All Fields] OR "changed"[All Fields] OR "changes"[All Fields] OR "changing"[All Fields] OR "changings"[All Fields])) AND "Classic"[Title/Abstract]) OR "Yijinjing"[Title/Abstract] OR "five animal frolics"[Title/Abstract] OR "Wuqinxi"[Title/Abstract] OR "six character formula"[Title/Abstract] OR "Liuzijue"[Title/Abstract] OR ("Guiding"[Title/Abstract] AND "pulling techniques"[Title/Abstract]) OR "Daoyinshu"[Title/Abstract] OR "chinese kung fu"[Title/Abstract] | 1,553 | 8:06:49 |
| 2 | (((((((((((Tai Ji[MeSH Terms]) OR (Tai Chi[Title/Abstract])） OR (Tai Chi soft ball exercise[Title/Abstract])) OR (Chen style Tai Chi [Title/Abstract])) OR (Yang style Tai Chi [Title/Abstract])) OR (Sun style Tai Chi [Title/Abstract])) OR (Wu style Tai Chi [Title/Abstract])) OR (Tai-ji[Title/Abstract])) OR (Chi, Tai[Title/Abstract])) OR (Tai Ji Quan[Title/Abstract])) OR (Ji Quan, Tai[Title/Abstract])) OR (Quan, Tai Ji[Title/Abstract])) OR (Taiji[Title/Abstract])) OR (T'ai Chi[Title/Abstract])) OR (Tai Chi Chuan[Title/Abstract])) OR (Taiji quan[Title/Abstract])) OR (Taijiquan[Title/Abstract]) | "Tai-ji"[MeSH Terms] OR "tai chi"[Title/Abstract] OR ((("Tai-ji"[MeSH Terms] OR ("Tai"[All Fields] AND "Ji"[All Fields]) OR "Tai-ji"[All Fields] OR ("Tai"[All Fields] AND "Chi"[All Fields]) OR "tai chi"[All Fields]) AND "soft"[All Fields]) AND "ball exercise"[Title/Abstract]) OR "chen style tai chi"[Title/Abstract] OR "yang style tai chi"[Title/Abstract] OR "sun style tai chi"[Title/Abstract] OR "wu style tai chi"[Title/Abstract] OR "Tai-ji"[Title/Abstract] OR "chi tai"[Title/Abstract] OR "tai ji quan"[Title/Abstract] OR "ji quan tai"[Title/Abstract] OR "quan tai ji"[Title/Abstract] OR "Taiji"[Title/Abstract] OR "t ai chi"[Title/Abstract] OR "tai chi chuan"[Title/Abstract] OR "taiji quan"[Title/Abstract] OR "Taijiquan"[Title/Abstract] | 2,878 | 8:04:46 |
| 1 | (((((((((((((((((((((((((((((((((((Cognitive Dysfunction[MeSH Terms]) OR (cognitive defect[Title/Abstract])) OR (Cognitive Dysfunctions[Title/Abstract])) OR (Dysfunction, Cognitive[Title/Abstract])) OR (Dysfunctions, Cognitive[Title/Abstract])) OR (Cognitive Impairments[Title/Abstract])) OR (Impairment, Cognitive[Title/Abstract])) OR (Impairments, Cognitive[Title/Abstract])) OR (Disorder, Cognitive[Title/Abstract])) OR (Disorders, Cognitive[Title/Abstract])) OR (Mild Cognitive Impairment[Title/Abstract])) OR (Cognitive Impairment, Mild[Title/Abstract])) OR (Cognitive Impairments, Mild[Title/Abstract])) OR (?Impairment, Mild Cognitive[Title/Abstract])) OR (Impairments, Mild Cognitive[Title/Abstract])) OR (Mild Cognitive Impairments[Title/Abstract])) OR (Cognitive Decline[Title/Abstract])) OR (Cognitive Declines[Title/Abstract])) OR (Decline, Cognitive[Title/Abstract])) OR (Declines, Cognitive[Title/Abstract])) OR (Mental Deterioration[Title/Abstract])) OR (Deterioration, Mental[Title/Abstract])) OR (Deteriorations, Mental[Title/Abstract])) OR (Mental Deteriorations[Title/Abstract])) OR (cognition disorder[Title/Abstract])) OR (cognition disorders[Title/Abstract])) OR (cognitive defects[Title/Abstract])) OR (cognitive deficit[Title/Abstract])) OR (cognitive disability[Title/Abstract])) OR (cognitive disorder[Title/Abstract])) OR (cognitive disorders[Title/Abstract])) OR (cognitive impairment[Title/Abstract])) OR (delirium, dementia, amnestic, cognitive[Title/Abstract])) OR (disorders[Title/Abstract])) OR (overinclusion[Title/Abstract])) OR (response interference[Title/Abstract]) | "cognitive dysfunction"[MeSH Terms] OR "cognitive defect"[Title/Abstract] OR "cognitive dysfunctions"[Title/Abstract] OR "dysfunction cognitive"[Title/Abstract] OR "dysfunctions cognitive"[Title/Abstract] OR "cognitive impairments"[Title/Abstract] OR "impairment cognitive"[Title/Abstract] OR "impairments cognitive"[Title/Abstract] OR "disorder cognitive"[Title/Abstract] OR "disorders cognitive"[Title/Abstract] OR "mild cognitive impairment"[Title/Abstract] OR "cognitive impairment mild"[Title/Abstract] OR "cognitive impairments mild"[Title/Abstract] OR "impairment mild cognitive"[Title/Abstract] OR "impairments mild cognitive"[Title/Abstract] OR "mild cognitive impairments"[Title/Abstract] OR "cognitive decline"[Title/Abstract] OR "cognitive declines"[Title/Abstract] OR "decline cognitive"[Title/Abstract] OR "declines cognitive"[Title/Abstract] OR "mental deterioration"[Title/Abstract] OR "deterioration mental"[Title/Abstract] OR (("deteriorate"[All Fields] OR "deteriorated"[All Fields] OR "deteriorates"[All Fields] OR "deteriorating"[All Fields] OR "Deterioration"[All Fields] OR "Deteriorations"[All Fields] OR "deteriorative"[All Fields]) AND "Mental"[Title/Abstract]) OR "mental deteriorations"[Title/Abstract] OR "cognition disorder"[Title/Abstract] OR "cognition disorders"[Title/Abstract] OR "cognitive defects"[Title/Abstract] OR "cognitive deficit"[Title/Abstract] OR "cognitive disability"[Title/Abstract] OR "cognitive disorder"[Title/Abstract] OR "cognitive disorders"[Title/Abstract] OR "cognitive impairment"[Title/Abstract] OR "delirium dementia amnestic cognitive"[Title/Abstract] OR "Disorders"[Title/Abstract] OR "overinclusion"[Title/Abstract] OR "response interference"[Title/Abstract] | 1,075,570 | 7:59:29 |

Supplement Table 2. MOCA index intervention and league table of control group

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **RR(95%CI)** | | | | | | | |
|  | Aandtaiji | Control | Etaijigame | Qigong | QigongandT | Taiji | TaijitDCS |
| Aandtaiji | Aandtaiji | -4.11 (-7.46, -1.02) | -2.25 (-6.37, 1.8) | -1.77 (-5.34, 1.47) | -2.73 (-7.2, 1.51) | -1.98 (-4.85, 0.92) | -3.88 (-7.87, -0.01) |
| Control | 4.11 (1.02, 7.46)\* | Control | 1.87 (-0.92, 4.82) | 2.35 (1.26, 3.36) | 1.39 (-1.54, 4.33) | 2.14 (0.79, 3.72) | 0.24 (-2.36, 2.99) |
| Etaijigame | 2.25 (-1.8, 6.37) | -1.87 (-4.82, 0.92) | Etaijigame | 0.47 (-2.7, 3.42) | -0.48 (-4.64, 3.52) | 0.27 (-2.59, 3.21) | -1.62 (-5.45, 2.14) |
| Qigong | 1.77 (-1.47, 5.34) | -2.35 (-3.36, -1.26) | -0.47 (-3.42, 2.7) | Qigong | -0.96 (-4.02, 2.21) | -0.2 (-1.87, 1.77) | -2.11 (-4.88, 0.88) |
| QigongandT | 2.73 (-1.51, 7.2) | -1.39 (-4.33, 1.54) | 0.48 (-3.52, 4.64) | 0.96 (-2.21, 4.02) | QigongandT | 0.75 (-2.4, 4.13) | -1.14 (-5.07, 2.87) |
| Taiji | 1.98 (-0.92, 4.85) | -2.14 (-3.72, -0.79) | -0.27 (-3.21, 2.59) | 0.2 (-1.77, 1.87) | -0.75 (-4.13, 2.4) | Taiji | -1.9 (-4.63, 0.72) |
| TaijitDCS | 3.88 (0.01, 7.87)\* | -0.24 (-2.99, 2.36) | 1.62 (-2.14, 5.45) | 2.11 (-0.88, 4.88) | 1.14 (-2.87, 5.07) | 1.9 (-0.72, 4.63) | TaijitDCS |

1: Qigong:Qi gong ; 2: QigongandT: Qigong and Transcranial direct current stimulation therapy ; 3: Etaijigame: Exergaming-Based Tai Chi is body movement-controlled computer Tai Chi game; 4: Taiji: Tai Chi or Tai ji; 5: Aandtaiji: Acupuncture and Tai ji; 6: TaijitDcs: Tai Chi combined with tDCS (transcranial Direct Current Stimulation); 7: RR: Risk Ratio; 8: CI: Confidence Interval.

\*: The data is statistically significant

Supplement Table 3. MOCA subgroups index intervention and league table of control group

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **RR(95%CI)** | | | | | | | | | | | |
|  | Aandytaiji | BDJqigong | BDJqigongT | Control | Eytaijigame | LZJqigong | SEDJqigong | YFFqigong | Ytaiji | YtaijitDs | YWLBqigong |
| Aandytaiji | Aandytaiji | -2.38 (-6.78, 1.62) | -2.88 (-8.19, 1.92) | -4.28 (-8.26, -0.75) | -1.79 (-6.57, 2.82) | -1.86 (-7.4, 3.26) | 0.01 (-4.72, 4.19) | -2.24 (-7.74, 2.81) | -1.98 (-5.34, 1.41) | -3.94 (-8.61, 0.49) | -2.48 (-7.77, 2.32) |
| BDJqigong | 2.38 (-1.62, 6.78) | BDJqigong | -0.5 (-4.4, 3.34) | -1.9 (-3.8, -0.04) | 0.59 (-3.08, 4.45) | 0.53 (-3.69, 4.74) | 2.39 (-0.7, 5.34) | 0.14 (-4.05, 4.24) | 0.4 (-1.9, 3.11) | -1.57 (-5.09, 2.16) | -0.11 (-4.03, 3.77) |
| BDJqigongT | 2.88 (-1.92, 8.19) | 0.5 (-3.34, 4.4) | BDJqigongT | -1.4 (-4.77, 2.03) | 1.1 (-3.49, 5.91) | 1.05 (-4.02, 6.14) | 2.89 (-1.3, 6.99) | 0.65 (-4.38, 5.66) | 0.9 (-2.62, 4.95) | -1.07 (-5.54, 3.67) | 0.4 (-4.45, 5.22) |
| Control | 4.28 (0.75, 8.26)\* | 1.9 (0.04, 3.8)\* | 1.4 (-2.03, 4.77) | Control | 2.49 (-0.64, 5.86) | 2.43 (-1.32, 6.23) | 4.29 (1.87, 6.6)\* | 2.04 (-1.67, 5.72) | 2.31 (0.87, 4.18)\* | 0.33 (-2.63, 3.55) | 1.79 (-1.64, 5.22) |
| Eytaijigame | 1.79 (-2.82, 6.57) | -0.59 (-4.45, 3.08) | -1.1 (-5.91, 3.49) | -2.49 (-5.86, 0.64) | Eytaijigame | -0.07 (-5.16, 4.83) | 1.79 (-2.38, 5.64) | -0.46 (-5.54, 4.37) | -0.18 (-3.36, 3.2) | -2.17 (-6.48, 2.16) | -0.7 (-5.55, 3.9) |
| LZJqigong | 1.86 (-3.26, 7.4) | -0.53 (-4.74, 3.69) | -1.05 (-6.14, 4.02) | -2.43 (-6.23, 1.32) | 0.07 (-4.83, 5.16) | LZJqigong | 1.85 (-2.69, 6.26) | -0.4 (-5.68, 4.85) | -0.11 (-4.06, 4.21) | -2.1 (-6.87, 2.89) | -0.64 (-5.71, 4.45) |
| SEDJqigong | -0.01 (-4.19, 4.72) | -2.39 (-5.34, 0.7) | -2.89 (-6.99, 1.3) | -4.29 (-6.6, -1.87) | -1.79 (-5.64, 2.38) | -1.85 (-6.26, 2.69) | SEDJqigong | -2.24 (-6.58, 2.18) | -1.98 (-4.59, 1.19) | -3.96 (-7.68, 0.11) | -2.5 (-6.6, 1.73) |
| YFFqigong | 2.24 (-2.81, 7.74) | -0.14 (-4.24, 4.05) | -0.65 (-5.66, 4.38) | -2.04 (-5.72, 1.67) | 0.46 (-4.37, 5.54) | 0.4 (-4.85, 5.68) | 2.24 (-2.18, 6.58) | YFFqigong | 0.28 (-3.58, 4.56) | -1.7 (-6.4, 3.24) | -0.24 (-5.26, 4.81) |
| Ytaiji | 1.98 (-1.41, 5.34) | -0.4 (-3.11, 1.9) | -0.9 (-4.95, 2.62) | -2.31 (-4.18, -0.87) | 0.18 (-3.2, 3.36) | 0.11 (-4.21, 4.06) | 1.98 (-1.19, 4.59) | -0.28 (-4.56, 3.58) | Ytaiji | -1.97 (-5.17, 0.98) | -0.5 (-4.57, 3.04) |
| YtaijitDs | 3.94 (-0.49, 8.61) | 1.57 (-2.16, 5.09) | 1.07 (-3.67, 5.54) | -0.33 (-3.55, 2.63) | 2.17 (-2.16, 6.48) | 2.1 (-2.89, 6.87) | 3.96 (-0.11, 7.68) | 1.7 (-3.24, 6.4) | 1.97 (-0.98, 5.17) | YtaijitDs | 1.46 (-3.26, 5.96) |
| YWLBqigong | 2.48 (-2.32, 7.77) | 0.11 (-3.77, 4.03) | -0.4 (-5.22, 4.45) | -1.79 (-5.22, 1.64) | 0.7 (-3.9, 5.55) | 0.64 (-4.45, 5.71) | 2.5 (-1.73, 6.6) | 0.24 (-4.81, 5.26) | 0.5 (-3.04, 4.57) | -1.46 (-5.96, 3.26) | YWLBqigong |

1: BDJqigongandT: Baduanjin Qigong and Transcranial direct current stimulation therapy; 2 : BDJqigong:Baduanjin Qigong; 3:LZJqigong:Liuzijue Qigong;4:SEDJqigong: Twelve Duanjin Qigong; 5:YFFqigong: Yifei Fang Qigong; 6: YWLBqigong:Yijinjing Qigong, Wuqinxi Qigong, Liuzijue Qigong, Baduanjin Qigong; 7: EYtaijigame:It is body movement-controlled computer Yang stye Tai ji game; 8:Ytaiji:Yang stye of Tai ji; 9:AandYtaiji:Acupuncture combined with Yang stye of Tai ji; 10:YtaijitDcs:Yang stye of Tai ji combined with tDCS (transcranial Direct Current Stimulation); 11: RR: Risk Ratio; 12: CI: Confidence Interval.

Supplement Table 4. MMSE index intervention and league table of control group

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **RR(95%CI)** | | | | | | | |
|  | Control | Naoandtaiji | Qigong | QigongandT | Taiji | Taijiandqigong | Taijiball |
| Control | Control | 3.90 (-0.2, 8.07) | 1.15 (-0.81, 3.13) | 1.54 (-1.24, 4.32) | 1.42 (-0.32, 2.62) | 3.35 (-0.01, 6.72) | 8.74 (5.94, 11.53)\* |
| Naoandtaiji | -3.90 (-8.07, 0.2) | Naoandtaiji | -2.75 (-7.31, 1.77) | -2.35 (-7.3, 2.55) | -2.53 (-7.08, 1.68) | -0.54 (-5.9, 4.77) | 4.84 (-0.1, 9.75) |
| Qigong | -1.15 (-3.13, 0.81) | 2.75 (-1.77, 7.31) | Qigong | 0.39 (-3.03, 3.8) | 0.26 (-2.47, 2.47) | 2.19 (-1.71, 6.1) | 7.58 (4.17, 11.01)\* |
| QigongandT | -1.54 (-4.32, 1.24) | 2.35 (-2.55, 7.3) | -0.39 (-3.8, 3.03) | QigongandT | -0.12 (-3.55, 2.73) | 1.81 (-2.49, 6.13) | 7.2 (3.26, 11.11)\* |
| Taiji | -1.42 (-2.62, 0.32) | 2.53 (-1.68, 7.08) | -0.26 (-2.47, 2.47) | 0.12 (-2.73, 3.55) | Taiji | 1.96 (-1.5, 5.83) | 7.32 (4.46, 10.76)\* |
| Taijiandqigong | -3.35 (-6.72, 0.01) | 0.54 (-4.77, 5.9) | -2.19 (-6.1, 1.71) | -1.81 (-6.13, 2.49) | -1.96 (-5.83, 1.5) | Taijiandqigong | 5.39 (1.01, 9.74)\* |
| Taijiball | -8.74 (-11.53, -5.94) | -4.84 (-9.75, 0.1) | -7.58 (-11.01, -4.17) | -7.20 (-11.11, -3.26) | -7.32 (-10.76, -4.46) | -5.39 (-9.74, -1.01) | Taijiball |

1: Naoandtaiji:Nao Ling Tang and Tai ji; 2:QigongandT:Qigong and Transcranial direct current stimulation therapy; 3: Etaijigame:Exergaming is body movement-controlled computer Tai ji game; 4:Taijiandqigong:Taiji combined qigong; 5: Taijiball:Tai ji soft ball exercise; 6: RR: Risk Ratio; 7: CI: Confidence Interval.

\*: The data is statistically significant

Supplement Table 5 MMSEsubgroup index intervention and league table of control group

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **RR(95%CI)** | | | | | | | | |
|  | BDJqigongT | Control | LZJqigong | Naoandytaiji | Taijiandqigong | Taijiball | Ytaiji | YWLBqigong |
| BDJqigongT | BDJqigongT | -1.54 (-5.46, 2.37) | -0.2 (-5.75, 5.38) | 2.37 (-3.91, 8.51) | 1.83 (-4.05, 7.67) | 7.21 (1.67, 12.74)\* | -0.18 (-4.9, 3.87) | -0.55 (-6.11, 5.01) |
| Control | 1.54 (-2.37, 5.46) | Control | 1.34 (-2.61, 5.31) | 3.91 (-1.05, 8.77) | 3.36 (-1, 7.71) | 8.75 (4.81, 12.68)\* | 1.35 (-0.91, 3) | 1 (-2.92, 4.93) |
| LZJqigong | 0.2 (-5.38, 5.75) | -1.34 (-5.31, 2.61) | LZJqigong | 2.57 (-3.72, 8.78) | 2.02 (-3.86, 7.86) | 7.41 (1.79, 12.97) | 0.01 (-4.71, 4.12) | -0.35 (-5.92, 5.21) |
| Naoandytaiji | -2.37 (-8.51, 3.91) | -3.91 (-8.77, 1.05) | -2.57 (-8.78, 3.72) | Naoandytaiji | -0.54 (-7.03, 6.02) | 4.84 (-1.34, 11.09) | -2.61 (-8.04, 2.51) | -2.91 (-9.06, 3.38) |
| Taijiandqigong | -1.83 (-7.67, 4.05) | -3.36 (-7.71, 1) | -2.02 (-7.86, 3.86) | 0.54 (-6.02, 7.03) | Taijiandqigong | 5.38 (-0.45, 11.25) | -2.05 (-7.06, 2.47) | -2.36 (-8.2, 3.51) |
| Taijiball | -7.21 (-12.74, -1.67) | -8.75 (-12.68, -4.81) | -7.41 (-12.97, -1.79) | -4.84 (-11.09, 1.34) | -5.38 (-11.25, 0.45) | Taijiball | -7.39 (-12.11, -3.31) | -7.74 (-13.28, -2.17) |
| Ytaiji | 0.18 (-3.87, 4.9) | -1.35 (-3, 0.91) | -0.01 (-4.12, 4.71) | 2.61 (-2.51, 8.04) | 2.05 (-2.47, 7.06) | 7.39 (3.31, 12.11)\* | Ytaiji | -0.35 (-4.4, 4.35) |
| YWLBqigong | 0.55 (-5.01, 6.11) | -1 (-4.93, 2.92) | 0.35 (-5.21, 5.92) | 2.91 (-3.38, 9.06) | 2.36 (-3.51, 8.2) | 7.74 (2.17, 13.28)\* | 0.35 (-4.35, 4.4) | YWLBqigong |

1: LZJqigong:Liuzijue Qigong; 2: NaoandYtaiji:Nao Ling Tang and Yang style of Tai ji; 3: Taijiandqigong:Taiji and Qigong is organized by combining Yang-style and Wu-style Tai ji withBa Duan Jin Qigong, Wu Qin Xi Qigong, and Liu Zi Jue Qigong; 4: Taijiball:Tai ji soft ball exercise; 5: YWLBqigong:Yijinjing Qigong, Wuqinxi Qigong, Liuzijue Qigong, Baduanjin Qigong; 6: Ytaiji:Yang stye of Tai ji; 7.BDJQigongandT:Baduanjin Qigong and Transcranial direct current stimulation therapy; 8: RR: Risk Ratio; 9: CI: Confidence Interval.

\*:The data is statistically significant

Supplement Table 6 Meta-regression results of each intervention at different intervention times in the main outcome measures

|  |  |  |
| --- | --- | --- |
| Outcome | Intervention | Course (RR(95%CI)) |
| MOCA | Etaijigame | 1.86 (-0.92, 4.81) |
| Qigong | 2.35 (1.26, 3.36)\* |
| QigongandT | 1.39 (-1.54, 4.33) |
| Taiji | 2.14 (0.79, 3.73)\* |
| TaijitDCS | 0.24 (-2.36, 2.99) |
| Taiji.Aandtaiji | 1.98 (-0.92,4.85) |
| MOCA Subgroup | BDJqigong | 1.83 (-7.31, 8.73) |
| BDJqigongT | 2.11 (-16.60, 38.46) |
| Eytaijigame | 2.48 (-15.02, 29.26) |
| LZJqigong | 2.41 (-15.99, 17.45) |
| SEDJqigong | 3.97 (-26.56, 10.63) |
| YFFqigong | 2.31 (-25.69, 44.67) |
| Ytaiji | 2.38 (0.68, 4.48)\* |
| YtaijitDs | 0.46 (-26.65, 59.72) |
| YWLBqigong | 1.70 (-7.10, 9.40) |
| Ytaiji.Aandytaiji | 3.05 (-18.80, 81.41) |
| MMSE | Naoandtaiji | 1.18 (-14.48, 48.56) |
| Qigong | 0.50 (-2.30, 5.40) |
| QigongandT | -5.42 (-35.27, 40.64) |
| Taiji | 0.66 (-0.87, 3.10) |
| Taijiandqigong | -0.81 (-95.15, 24.10) |
| Taijiball | 7.04 (-4.07, 29.94) |
| MMSE Subgroup | BDJqigongT | -25.89 (-94.75, 27.48) |
| LZJqigong | 0.24 (-4.11, 9.95) |
| Naoandytaiji | 0.55 (-15.59, 24.02) |
| Taijiandqigong | 0.15 (-22.10, 62.333) |
| Taijiball | 6.77(-3.11, 17.23) |
| Ytaiji | 0.52 (-1.51, 3.65) |
| EWLBqigong | -0.09 (-4.53, 6.33) |

1: RR: Risk Ratio; 2: CI: Confidence Interval.

\*:The data is statistically significant

Supplement Table 6 Cochrane Collaboration's Specific Risk of Bias Evaluation Criteria

|  |  |  |
| --- | --- | --- |
| Evaluation Criteria | Evaluation Result | Description of Evaluation Content |
| 1. Random Allocation Method | Correct | - Random number table, computerized random number generation, drawing lots, or minimization method. |
| Incorrect | - Allocation based on date of birth, hospital or clinic number, etc., or any predictable method.  - Alternating allocation.  - Allocation based on doctor's judgment, patient choice, or experiment results. |
| Unclear | - The information provided is insufficient to judge whether the method is correct. |
| 2. Allocation Concealment | Adequate | - Centralized allocation, including telephone, internet, or pharmacy-controlled randomization.  - Sealed opaque envelopes.  - Coded allocations, not exposed to participants. |
| Inadequate | - Open random number tables or lists of allocation sequences.  - Non-sealed or non-opaque envelopes.  - Alternating allocation. |
| Unclear | - The information provided is insufficient to judge whether the allocation concealment is correct. |
| 3. Blinding | Correct | - Blinding was not necessary, but outcome assessments and measurements were unlikely to be affected (e.g., objective outcomes like death).  - Blinding was applied for both participants and key researchers, and the blinding was not compromised. |
| Incorrect | - Blinding was not applied or was inadequate, and the outcome assessment was likely affected. |
| Unclear | - The information provided is insufficient to judge whether the blinding was adequate. |
| 4. Completeness of Outcome Data | Complete | - All patients accounted for, including dropouts and missing data, reported with reasons provided.  - Intention-to-treat (ITT) analysis performed, if applicable.  - All outcome measures reported as planned, and data imputation methods were appropriate. |
| Incomplete | - Patient data missing or dropped out without reasons given.  - Data were selectively reported or not in line with initial study objectives. |
| Unclear | - The information provided is insufficient to judge whether the data was fully accounted for. |
| 5. Selective Reporting of Study Results | No Selective Reporting | - All outcomes specified in the protocol were reported.  - Data were presented for all main outcome indicators. |
| Selective Reporting | - One or more main outcomes were missing, and details were unclear in the reporting. |
| Unclear | -The information is incomplete and difficult to judge. |
| 6. Other Bias Sources | None | - No other sources of bias present. |
| Yes | -At least one major bias risk exists:  - Bias related to the study design used.  - Study terminated early (due to data reasons or legitimate termination reasons).  - Conflict of interest.  - Small sample size.  - Significant baseline imbalance.  - Claims of fraudulent behavior.  - Other issues. |
| Unclear | - Information is incomplete, difficult to judge whether major bias exists.  - Unclear whether the identified issue causes bias, and the reason or evidence is insufficient. |

Supplement Table 7. Detailed Explanation and Definition of Traditional Chinese Exercises and Their Combination with Medical Interventions

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Category | Intervention Method | Abbreviation | Description | Definition |
| MOCA and MMEE group | Traditional Chinese Exercise | Qigong | Qi Gong | A traditional exercise that regulates energy ('Qi') through breathing, posture, and meditation (Yang et al., 2024). |
| Etaijigame | Exergaming-Based Tai Chi | A computer-based Tai Chi game controlled by body movements, integrating virtual reality technology (Yu et al., 2022). |
| Taiji | Tai Chi or Tai Ji | A traditional Chinese martial art combining body posture, breathing control, and meditation (Chen et al., 2023). |
| Taijiandqigong | Tai Chi and Qigong | A combination of Tai Chi and Qigong, achieving physical and mental balance through coordinated movements and breathing (Park et al., 2023). |
| Taijiball | Tai Ji soft ball exercise | Tai Ji soft ball is a Tai Ji equipment exercise using a racket similar to a badminton racket with a cloth surface and a leather ball filled with sand. It can be practiced solo or with a partner, incorporating the essence of Tai Ji (Wang et al., 2021). |
| Traditional Chinese Exercise Combined with Medical Techniques | QigongandT | Qigong and Transcranial Direct Current Stimulation | A practice combining Qigong with transcranial direct current stimulation (tDCS) to regulate brain functions through electrical stimulation (Jinping, 2022). |
| Aandtaiji | Acupuncture and Tai Chi | A therapy combining traditional acupuncture techniques with Tai Chi movements (Yu, 2021). |
| TaijitDcs | Tai Chi combined with Transcranial Direct Current Stimulation | A combination of Tai Chi with tDCS, using electrical currents to enhance brain and body coordination (Xu et al., 2023). |
| Naoandtaiji | Nao Ling Tang and Tai Ji | A therapy combining Nao Ling Tang herbal medicine with Tai Chi movements (Rizhen et al., 2013). |
| MOCA and MMSE subgroup | Traditional Chinese Exercise | BDJqigong | Baduanjin Qigong | A traditional Chinese exercise focusing on stretching and gentle movements to improve health and well-being (Xia et al., 2023). |
| LZJqigong | Liuzijue Qigong | A traditional Chinese breathing exercise, involving specific sounds and movements to enhance lung and organ function (Tuan and Juan, 2013). |
| SEDJqigong | Twelve Duanjin Qigong | A set of twelve traditional Chinese exercises aimed at improving physical flexibility, balance, and health (Hengjia et al., 2020). |
| YFFqigong | Yifei Fang Qigong | A traditional Chinese Qigong form that focuses on improving respiratory health and lung function (Min and Xiaodan, 2023). |
| YWLBqigong | Yijinjing Qigong, Wuqinxi Qigong, Liuzijue Qigong, Baduanjin Qigong | A combination of different traditional Chinese exercises aimed at improving overall health and balance (Jun and Zhongxing, 2018). |
| EYtaijigame | Body movement-controlled computer Yang style Tai Ji game | A computer-based game that uses body movements to control Yang-style Tai Ji practice through virtual reality (Yu et al., 2022). |
| Ytaiji | Yang style of Tai Ji | A traditional Chinese martial art focusing on slow, graceful movements to enhance physical and mental health (Li et al., 2014). |
| Taijiandqigong | Yang-style and Wu-style Tai Ji combined with Ba Duan Jin Qigong, Wu Qin Xi Qigong, and Liu Zi Jue Qigong | A practice combining multiple Tai Ji styles and Qigong exercises to promote physical and mental well-being (Park et al., 2023). |
| Taijiball | Tai Ji soft ball exercise | Tai Ji soft ball is a Tai Ji equipment exercise using a racket similar to a badminton racket with a cloth surface and a leather ball filled with sand. It can be practiced solo or with a partner, incorporating the essence of Tai Ji (Wang et al., 2021). |
| Traditional Chinese Exercise Combined with Medical Techniques | BDJqigongandT | Baduanjin Qigong and Transcranial direct current stimulation therapy | A combination of Baduanjin Qigong and transcranial direct current stimulation to enhance cognitive function and physical well-being (Jinping, 2022). |
| AandYtaiji | Acupuncture combined with Yang style of Tai Ji | A therapy combining acupuncture techniques with the Yang style of Tai Ji movements for improved health and balance (Yu, 2021). |
| YtaijitDcs | Yang style of Tai Ji combined with tDCS | A combination of the Yang style of Tai Ji and transcranial direct current stimulation to improve brain function and body coordination (Xu et al., 2023). |
| NaoandYtaiji | Nao Ling Tang and Yang style of Tai Ji | A therapy combining Nao Ling Tang herbal medicine with Yang style Tai Ji movements for enhanced physical and mental well-being (Rizhen et al., 2013). |

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