

Review

# Health benefits of traditional Chinese sports and physical activity for older adults: A systematic review of evidence

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## Abstract

**Background:** Traditional Chinese sports and physical activities (PAs) have a long history and are practiced by millions of Chinese. However, relatively few systematic reviews of the scientific evidence for their health benefits, especially for older Chinese adults, have been undertaken.

**Evidence acquisition:** Between January and March 2016, a systematic search was conducted using the CNKI and PubMed databases to identify studies published between 2000 and 2015. Studies were selected for review if they were designed specifically to evaluate the health benefits of traditional Chinese sports and PAs in adults aged 50 years and older in the Mainland of China. The studies included observational, uncontrolled, and randomized and controlled designs. Papers published without an English title or abstract were excluded.

**Evidence synthesis:** The initial search identified a total of 229 studies. After removing duplicates and studies that did not meet the inclusion/exclusion criteria, 95 studies were selected for review. Special attention was given to studies of the most commonly practiced activities: Tai Ji Quan, Qigong, and Yangko exercises. A positive association between these types of exercise and health benefits was noted for healthy older adults and those with chronic diseases. Evidence on other types of activities was less clear due to the limited number of studies conducted.

**Conclusion:** There is promising evidence that traditional Chinese sports and PAs provide many health benefits for older Chinese adults. While additional scientifically rigorous research is warranted, promoting these traditional and culturally-based sports and PAs as forms of behavioral medicine in primary and secondary prevention of diseases among the aging Chinese population will help fulfill an urgent public health need.

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**Keywords:** Chinese culture; Chinese martial arts; Elderly; Health; Physical activity; Sports

## 1. Introduction

For more than 5000 years, many forms of traditional sports and exercise activities have been widely practiced in China.<sup>1</sup> For centuries, older Chinese adults have used these activities to help enhance their fitness, promote their health, and prevent disease. Many of these activities are culturally rooted, with their social and spiritual health values being important among different ethnic populations. Despite this rich and varied history, a systematic review of the health benefits of many traditional sports and physical activities (PAs) for an older Chinese adult population has not been conducted.

Increased longevity and low fertility rates in China have led to the aging of the Chinese population,<sup>2</sup> which has increased the burden of disease and disability on the country's healthcare

system.<sup>3</sup> Therefore, from a health and disease prevention perspective, promoting lifestyle changes, including an increase in levels of PA, is urgently needed for older adults. Despite the fact that the Chinese have a long history of using traditional sports and fitness-oriented PAs to improve health, the benefits of these activities have been both under-documented and under-studied. This has created a significant knowledge gap in the area of health promotion for China's aging population. The purpose of this article is to narrow this gap by providing a systematic review of contemporary research on the health benefits of traditional forms of exercise and PA among older Chinese adults.

## 2. Traditional forms of exercise and PA

More than 900 forms of traditional Chinese sports and PAs (hereafter referred to as "traditional PAs") are practiced by China's 56 ethnic populations.<sup>1,4</sup> Many of these activities fall into the general category of Wushu,<sup>4</sup> also known as martial arts, which comprise more than 120 variations of self-defense techniques<sup>5</sup> developed under the influence of Chinese

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Confucianism, Buddhism, and Taoism. Historically, the practice of these martial arts has been credited with improving fitness, cultivating morality, and strengthening self-defense capabilities. In our contemporary era, these activities also function as forms of cultural exchange, entertainment, and commercialized sports performances.

During the past 3 decades, traditional Chinese PAs such as Tai Ji Quan and Qigong<sup>4,6</sup> have gained significant international recognition as a means of promoting cultural, educational, and health values.<sup>7</sup> There is growing research evidence that supports the claims for the health benefits of these 2 types of traditional Chinese activities.<sup>8–16</sup> However, the health benefits of other culturally-based traditional PAs being practiced in China, such as Yangko dance, diabolo, kicking shuttlecocks, Mulan Quan, dragon-boat racing, Tibetan Guozhuang dance, rope skipping, and drum beating,<sup>4</sup> have not been well documented. Of these activities, Yangko dance is the most popular one practiced by older adults in the northern part of China. In the following sections, we provide a general description of these 3 most common PAs (Tai Ji Quan, Qigong, Yangko dance) practiced by older Chinese adult populations.

### 2.1. Tai Ji Quan

Tai Ji Quan, as part of Wushu, consists of various techniques established on the basis of the rudimentary premise of yin-yang (as represented by Tai Ji) that gives rise to mind-driven interactive combative actions or exercise movements (as represented by the word “Quan”). Tai Ji Quan has different schools or styles, including classic Chen, Yang, Wǔ, Wú, and Sun styles, and are often practiced with variations in performance routines (e.g., solo or with weapons) and complexity of the forms.<sup>5</sup> Tai Ji Quan has traditionally been practiced for multiple purposes, including self-defense, mindful nurturing of well-being, and fitness enhancement.<sup>6</sup> As a traditional PA, it is one of the most popular activities practiced by older Chinese adults and people around the world.<sup>7</sup> Several Chinese scholars have provided comprehensive reviews on the health benefits of Tai Ji Quan in China.<sup>17–21</sup>

### 2.2. Qigong

Qigong involves either a static (stationary) or dynamic set of meditative exercises that are carried out, like Tai Ji Quan, with the intention of integrating one’s mental energy, coordinated breathing, and physical movements. In theory, Qigong shares many similarities with Tai Ji Quan in that it is deeply rooted in the ancient Chinese culture and traditional Chinese medicine. In practice, Qigong exercises have been viewed for centuries as a means of cultivating internal energy, invigorating internal organs, and aiding in the healing of the human body.<sup>22</sup> Various types of Qigong form or exercise exist, but some of the most common types are Wu Qin Xi (Wuqinxi, also known as “frolics of 5 animals”), Ba Duan Jin (Baduanjin, also known as “8 Strands of Silk Brocade”),<sup>23</sup> Yi Jin Jing, Liu Zi Jue, Ma Wang Dui Dao Yin Shu (Mawangdui Daoyin exercises). Most Qigong exercises are performed slowly and gently, making them particularly suitable and appealing to older adults.

### 2.3. Yangko dance

Having a much shorter history than Tai Ji Quan or Qigong, Yangko dance, a form of dance with variations in style, originated in rural areas of northern China. The word “Yangko” literally means “dance and chant in synchronization with folk music”. Movements in Yangko dance involve vigorous and quick aerobic dancing with many variations in styles and forms. It is one of the most popular community-based PAs and is performed in streets, open spaces, and at cultural festivals. Although there is limited formal documentation about Yangko, it is evident from anecdotal sources that it is intended as a PA that promotes health.

## 3. Evidence acquisition

### 3.1. Literature search

Between January and March 2016, a comprehensive search of the literature on traditional PAs in the Mainland of China was conducted by a panel consisting of the first 2 authors of this article and an international scholar who is an expert in PA and aging. To identify relevant studies, the Chinese National Knowledge Infrastructure (CNKI), a major, high-yielding Chinese literature database, was used to search for studies published in Chinese or English between 2000 and 2015. To ensure inclusion of papers published in international English-language journals, an additional search was conducted in PubMed (U.S. National Library of Medicine). Primary search terms included “traditional Chinese sports”, “traditional PAs”, “Wushu”, “Tai Chi”, “Tai Ji Quan”, and “Qigong”. These terms were coupled with “older adults”, “physical activity”, “exercise”, and “mass sports”. These phrases were used to search both the text and subject headings wherever possible.

### 3.2. Inclusion and exclusion criteria

The inclusion criteria for research studies reviewed in this article required that they focus on examining the health benefits derived from the practice of traditional PAs by older Chinese adults and that they have clearly described and operationalized target outcome measures. To better understand the scope of research conducted in China, both observational (i.e., observations made without any interventions (e.g., cohort studies, case-control studies, or cross-sectional studies)) and experimental (uncontrolled (e.g., single-group pre-post design studies) or controlled (non-randomized studies or randomized controlled trials; non-RCTs/RCTs)) studies were considered. Studies that involved individuals aged 50 years and older were included. This minimum age limit was established because a significant number of studies included this age cohort as part of the health outcome evaluations of traditional PAs for older adults.

Papers published without an English title or abstract were excluded. In addition, studies that did not have a specific focus on traditional PAs in China were excluded. Randomized studies in which there was not a minimal attention control condition were not included.

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