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Original article

Implementing an evidence-based Tai Ji Quan program in a multicultural setting: A pilot dissemination project

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Abstract

Falls in older adults are a significant public health issue and a particularly significant health risk in Minnesota. With accumulating research evidence suggesting that falls can be prevented through exercise, there is an increased public health effort among organizations serving older adults to translate and disseminate evidence-based programs into the community. Such efforts, however, face additional challenges if they are implemented in communities with older adults from different cultural backgrounds and languages. This paper briefly describes a pilot community-based dissemination project, including the initiation, implementation, process, and outcomes, of an evidence-based fall prevention (*Tai Ji Quan: Moving for Better Balance* formerly known as *Tai Chi: Moving for Better Balance*) through a local Area Agency on Aging in the Minneapolis/St. Paul metropolitan area in Minnesota (USA). Overall, the program was successfully implemented resulting in adoption by local community organizations serving Asian and, to a lesser degree, East African non-English speaking older adults. Bilingual community instructors were trained to lead the classes resulting in broad participation and improved physical performance by the older adults targeted for the intervention. The results from this pilot study indicate that *Tai Ji Quan: Moving for Better Balance* can be implemented with positive results in non-English speaking community settings using bilingual leaders.

Keywords: Balance; Dissemination; Falls; Older adults; Tai Ji Quan

1. Introduction

Falls are a major public health problem worldwide and pose a threat to the health and independence of older adults.[1] In the United States, each year, one out of three Americans aged 65 years and older fall. Many of these falls result in injuries including bruises, hip fractures, or head trauma, leading to mortality and morbidity, and increased social and economic burdens on the health care system.[1] Falls are a particularly significant health risk for older adults in Minnesota which has the 5th highest fall death rate in the United States, with nearly two times the national rate.[2]

Falls in older adults can be prevented through exercise interventions.[3,4] In 2008, the Centers for Disease Control and Prevention (CDC) complied an inventory that contains evidence-based fall prevention interventions[5] that can be adopted for use in community settings (community senior centers, residential facilities, faith based organizations, *etc*.). Although there is an increasing effort to diffuse evidence-based fall prevention programs into community practice,[6] there remains a significant gap in translating and disseminating these programs in diverse community settings that involve underserved older adult populations from multiple language and cultural backgrounds. The pilot project reported in this paper addresses this gap.

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This study reports a dissemination project designed to pilot test whether *Tai Ji Quan: Moving for Better Balance* (TJQMBB)[7,8] (formerly known as *Tai Chi: Moving for Better Balance*), an evidence-based fall prevention program, could be implemented by minority service providers working with diverse and growing non-English speaking older adult populations in their communities within the Minneapolis/St. Paul metropolitan area in Minnesota, USA. Specifically, the project set out to address three questions: (1) Could this evidence-based program be adopted by organizations that provide services in their communities? (2) Could bilingual leaders in these organizations who had little or no previous experience in Tai Ji Quan learn and then effectively deliver the program to older adults from their communities in their native language? and (3) Would the older adults participate and benefit from participating the program?

2. Methods

2.1. Target communities

The study geographic area was within the Minneapolis/St. Paul seven-county metropolitan area served by Metropolitan Area Agency on Aging (MAAA). In 2010, over 450,000 adults aged 60+ resided in the seven counties (an increase of 33% from 2000), representing 46% of the state's older adult population.[9] The rapidly growing minority elder population was approximately 9% of the 60+ metro population, up 2% from 2000. Within this demographic, 37% were African Americans (including East African), 34% Asian Americans, 17% Hispanic Americans, and 5.5% Native Americans.[9]

As the designated area agency on aging for the Twin Cities metro area, the MAAA administers grants and contracts for community services that support older adults in their homes and assists providers to develop new services and deliver evidence-based health promotion programs to communities of diverse backgrounds. As part of the MAAA's effort to promote evidence-based health programs, this pilot project was primarily targeted at local community organizations in the urban centers of Minneapolis and St. Paul that support non-English speaking older adults from two cultural backgrounds: Asian and East African. Bilingual leaders who were either staff or community members from these organizations were recruited for training and implementing the program. The pilot project was conducted in 2012.

2.2. Leader training

Eight local community organizations were approached by MAAA staff to solicit interest in implementing the program. Each interested organization signed a memorandum of understanding with MAAA outlining the roles of each in the project. Upon recommendation by their organizations, leaders were contacted by MAAA staff to attend a training workshop in which they learned how to implement the program—TJQMBB. At the 2-day training workshop, conducted by the program developer, leaders learned the program background and implementation protocol for program delivery and practiced the forms and movements. The training was further reinforced by offering leaders six 1.5-h follow-up support sessions organized by a trained local instructor over a period of 8 months.

2.3. Program delivery

The trained leaders delivered the program in their own language to the older adults in their communities in two 12-week sessions with classes twice a week for an hour (a total of 48 classes). MAAA paid organizations US$30 per class session offered. Because this effort was considered a community-based pilot dissemination project, no Institutional Review Board approval was sought. However, verbal consent was obtained from all participants for surveys and physical performance (Timed Up and Go, TUG) evaluations.

2.4. Program

The TJQMBB program is derived from the simplified 24-form of Tai Ji Quan and consists of an eight-form core routine with a variety of built-in practice variations and mini-therapeutic movements. Basic Tai Ji Quan movements have been transformed into therapeutic training for balance and integrated into the daily functioning and clinical rehabilitation of participants. The protocol involves seated, seated-to-standing and standing movements. Specifically, the program involves a set of tailored Tai Ji Quan-based activities that focused on stimulating and integrating musculoskeletal and sensory systems through movements such as ankle sways with feet planted; weight-shifting; trunk rotation, flexion, and extension; and coordinated eyes—head—hand movements. The goals of the program are to improve postural stability and orientation, pelvic mobility and stability, control of body positioning, gait initiation and locomotion, gaze stability, and movement symmetry and coordination; to increase range of motion around the ankle joints; to build lower-extremity strength; and to reduce the risk of falling.[8]

2.5. Measures

Class attendance information was logged by the leaders and collected, upon program completion, by the MAAA staff. In addition, participant mobility was assessed using TUG,[10] a commonly used measure in fall intervention research, at the beginning of the classes and again at the 24-week program termination (i.e., the end of the second 12-week session). The test was administrated by MAAA program staff as time and schedule allowed. Participation was voluntary. Finally, an exit survey/debrief was conducted at the program termination to seek program feedback from participants and leaders.

2.6. Statistical analysis

Paired *t* tests were conducted on data from the participants who were available for the test at the beginning (baseline) and