BEYOND BALANCE & FALLS PREVENTION:
The Role of Tai Chi in Optimal Aging and Well-Being

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Background

Prevention of falls among older adults is a pressing public health challenge in America. Every year, one in four older adults falls leading to significant mortality and morbidity. The cost of injurious falls is staggering both from a personal (mobility challenges, loss of functional independence and social isolation) and financial ($31 billion Medicare costs in 2015) perspective.[1]

Beyond balance, healthy aging and well-being is a goal of older adults. Having seniors safe in their homes and communities means a more vital society. Mobility and functional skills are key components of maintaining independence, community engagement and quality of life. Tai Chi (TC) is a tool that may advance many aspects of wellness (physical, mental, social) through both individual and group practice.

Research Methods

In collaboration with WI Aging and Disability Resource Centers, this study offered Tai Chi Fundamentals™ (TCF)[2] classes to adults 65 and older in three WI communities – La Crosse, Milwaukee and Madison. Each intervention session included 6 weeks of TCF delivered 2 times per week for 90 minutes (12 classes). Stakeholder engagement (community sponsors, tai chi instructors and participants) was used for the material development, recruitment, and delivery of TCF classes.

TC POSTURE

Physical Measures	Cognitive Measures	Self-efficacy
▪ Timed Up and Go (TUG) ▪ 30-Second Chair Test ▪ 4-Stage Balance Test	Trail Making Test A & B (Executive Function)	Activities-Specific Balance Confidence (ABC) Scale
Follow-up telephone interviews were used to assess participants' home practice patterns and perceptions of the DVD and book aids[3] used to support practice.		

REFERENCES

1. Centers for Disease Control and Prevention: Important Facts about Falls. Available at: https://www.cdc.gov/homeandrecreationalsafety/falls/adultfalls.html (Accessed 9/20/17)
2. Tai Chi Fundamentals™ (TCF) Program. Available at: http://taichihealth.com/?page_id=25 (Accessed 9/20/17)
3. Yu T, Hallisy KM. Tai Chi Fundamentals® The Adapted Program with Optional Side Support, Walker Support, and Seated Versions [Book/DVD]. Taos NM: Uncharted Country Publishing, 2015.

Data Analysis and Results

A randomized wait list pre-post test design was used for the study. A total of 223 participants completed the pre-test and 199 (89.2%) completed the post-test immediately after class. Average number of classes attended was 10.4 out of 12.

Paired t-test analyses found significant increases in participants' self-efficacy (ABC) to prevent falls ($p \leq .000$). Physical measures of mobility (TUG), leg strength (30-sec Chair Stand) and balance (4-stage Balance Tandem) showed significant improvement at $p \leq .000$. The 4-stage Balance Staggered Tandem item improved significantly ($p \leq .014$) as did cognitive executive function as measured by the Trail-making B ($p \leq .028$).

Implications

This study found a 6-week TCF course increased participants' outcomes immediately following the class regarding mobility, strength, confidence to avoid falls, balance and executive function. All of these are essential for optimal aging and well-being. Furthermore, phone follow-up interviews suggest that group TC classes may help address seniors needs regarding social connections and exercise self-efficacy. A limitation of this study was its short timeframe. Future studies are needed to evaluate physical, social, emotional and cognitive outcomes over a longer time period.

Demand for the classes was high in all 3 cities, especially in La Crosse where TCF had never been taught before. Community partners, instructors and participants were pleased with the TCF program, and other ADRCs in the state of WI appear eager to adopt the program in their communities.

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