Tai Chi and Qigong for People with Neurological Disorders

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Objectives

- Become familiar with the history of Tai Chi and Qigong as it relates to health and well being
- Become familiar with the evidence and usefulness of Tai Chi and Qigong as it relates to balance and neurological conditions.
Tai Chi vs. Qigong

• Tai Chi is a form of Qigong
• Thousands of forms of Qigong
• 5 main styles of Tai Chi
Tai Chi

- Originally developed as a martial art about 450 years ago
- Tai Chi, Taiji, Tai chi Chuan, Taijiquan
- Roots date back 4000 years
- Became more widely used for health benefits in the 1950’s
- Growing scientific research in the 1990’s
Who can participate?

- Any age
- Any background
- People with cognitive impairments
- At your own pace
- Can be done individually or in groups
- Can be done sitting, standing, stepping or walking
- Some may be done lying down
Where?

- Tai Chi Schools
- Community Centers / Senior Centers
- Support Groups
- Workplace
- In your own home
Balance and Falls

• #1 Research area for Tai Chi
• Improved balance on many different measures
  – SLS, Tandem Stance, Functional Reach, Stepping Reaction time, Gait velocity\textsuperscript{1-6}
• Improvements on functional tests
  – Berg, Tinetti, TUG, 6 Minute Walk Test\textsuperscript{2-5, 7-11}
Balance and Falls

- Improved hip, knee and ankle strength (mostly eccentric) and proprioception $^{1,8,12}$
- Improved trunk flexibility $^8$
- Fear of falling, self efficacy $^{3,5,6,8,10}$
Balance and Falls

- Results gained during intervention often lasted long after study had stopped
- More participants preferred to stay with Tai Chi after intervention periods compared to other groups (strengthening, stretching)
Parkinson’s

- UPDRS (Unified Parkinson’s Disease Rating Scale) 13-19
- Improved balance 13,15,17,20
- Functional measures
  - Berg, TUG, 6-Minute Walk 13,15,20,21
- Decreased frequency of falls 15,21
Parkinsons

- Psychological well-being $^{14,18,19}$
- PD QOL Scale $^{18}$
- Autonomic Symptoms $^{19}$
- Subjective reports of improved physical, psychological, and social function $^{16,22}$
Stroke

- Tai Chi has been shown to be safe, feasible, and effective for patients with stroke \(^{23}\)
- Improvements in social and general functioning \(^{24}\)
- COG excursion and reaction time \(^{25}\)
- Sleep quality, general health, anxiety/insomnia, depression \(^{26}\)
- Reduced Fall Rates compared to controls- (5 vs. 14) \(^{27}\)
MS

- Depression $^{28,29}$
- Balance $^{28,29}$
- Coordination $^{29}$
- QOL $^{29}$
Traumatic Brain Injury

- Improved ADL’s \(^{30}\)
- Self-esteem \(^{31}\)
- Mood \(^{31}\)
- Decreased sadness, anger, confusion, tension, fear \(^{32}\)
- Increases in energy and happiness \(^{32}\)
Traumatic Brain Injury

- Case Report, 3 individuals with severe head trauma:
  - 24 year old male injured at the age of 19 from shrapnel. Impaired walking due to recurrent falls that caused severe insecurity. He required constant support.
  - 54 year old male injured in an MVA at the age of 17. He suffered from lack of balance and recurrent falls that forced him to use a wheelchair when he needed to go a long distance. He also suffered from general passiveness and lack of socialization.
  - 25 year old male injured in an MVA at the age of 20. His main symptoms were imbalance that was mainly attributed to hypertonicity, and speech, concentration and memory problems.
Traumatic Brain Injury

- Program started in sitting and progressed to standing and walking.
- All 3 patients walk without assistance, rarely fall, and feel more secure while walking.
- They feel that they have greatly improved control of themselves and their surroundings, that their memory and concentration are better, and they have a decrease in hypertonicity.
- One patient said that TCC “gave him tools to deal with his injury and a path for improvement.” Patient 1's improvement enabled him to regain freedom in daily activities and return to driving his own car.
Traumatic Brain Injury 34

- Six service members with mild TBI receiving outpatient neuro rehabilitation at the Defense and Veterans Brain Injury Center–Charlottesville Rehabilitation Center.
- Formal interviews with participants throughout the process.
- Most participants expressed amazement at the physical feelings they experienced.
- They felt they had “regained control”
  - No more migraines, sleep through the night, absence of flashbacks and PTSD, less medication (pain, insomnia, anxiety, depression)
- “No pain, a lot of gain”
  - Sped up recovery, others noticed how much happier and less stressed they were.
Other Research...

- Mindfulness based interventions showed increased GMD when compared to controls in patients with Parkinson’s.\(^{35}\)
- Similar results in healthy controls performing mindfulness-based intervention.\(^{36}\)
- Increased GMD following mindfulness based intervention correlated with improvements in psychological well-being.\(^{37}\)
- Qigong and Tai Chi have been shown to decrease inflammatory markers Interleukin-6 and C-Reactive Protein in the blood.\(^{38-40}\)
Summary

• Tai Chi and Qigong are very safe and effective for people with balance deficits and neurological disorders
• Research is minimal but shows promising results
• Tai Chi and Qigong can be performed by anyone regardless of physical condition, almost anywhere
Thank You!!!
References


References


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References


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