Symptom management strategies with Tai Chi for stroke rehabilitation

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Background

• Cerebrovascular disease
• individuals with stroke would suffer from disease associated symptoms which influence their functioning in everyday life.
• symptom clusters were usually known to be sharing similar underlying mechanisms.
• It is clear that the development of effective stroke rehabilitation involves interdisciplinary team approach to manage physical, social, cognitive, and psychological functioning in this population.
Tai Chi

• a low intense aerobic exercise
• addresses the integration and balance of mind and body
• fundamental principles of slow, smooth, and continuous movement control, and the transfer of body weight while maintaining an upright and relaxed posture.
Seated Tai Chi

• shares the common Tai Chi principles
• while being modified to adjust the movements for patients with physical and psychological disability.
Purpose of the symposium

• to present the scientific evidence for the use of Tai Chi as a new approach of stroke rehabilitation.
Symposium schedule

• Symptom clusters of stroke patients by rehabilitation stages
• Introduction of seated Tai Chi as a new approach for stroke rehabilitation
• Pilot study on the effect of seated Tai Chi on physical functioning among individuals with stroke
• Audience participatory session to practice together few movements of seated Tai Chi
• Q&A session
Learning Objectives

• The learner will be able to understand tai chi applied stroke rehabilitation and its beneficial health outcome

• The learner will be able to understand exercise precaution of seated tai chi program applied to stroke patients
Symptom Clusters of Stroke Patients by Rehabilitation Stages

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Chungnam National University
Introduction of seated Tai Chi as a new approach for stroke rehabilitation

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Stroke

- Stroke prevalence
  - 759,000 people in the USA
  - 2\textsuperscript{nd} leading cause of death in Korea
  - 3\textsuperscript{rd} leading cause of death in China

Comprehensive Stroke Rehabilitation Program
## Comprehensive Stroke Rehabilitation

| Symptom cluster | Cerebrovascular risk factors | Symptom management | Behavioral modification | Improved ADL | Improved Quality of life and mental health |
Fig. Expected outcome of Tai Chi applied stroke Rehab program.
Tai Chi for an Exercise Alternative

Mindfulness

Physical Strength

Strengthening Mind & Body
Features of Tai chi from health perspectives

**Tai Chi**
- Low intense aerobic exercise
- Qi-gong breathing
- Slow consistent movement with control
- Grounded lower posture
- Weight transfer from empty to full steps
- Mindfulness
Motor control and health benefits

Features

• Coordinated movements of upper and lower body
• Slow and circular with controlled movements
• Straight body posture
• No bound movements
• Small steps to avoid injuries

Health Benefits

• Arthritic symptom management
• Flexibility
• Balance
• Low drop-out rates without exercise-induced side effects
Weight Transference

Features

• Single leg stance
• Double leg stance
• Empty stance to full stance
• Compared to normal walking, Tai Chi involve a longer duration single-leg stance (Wu et al., 2004)

Health Benefits

• Balance both static and dynamic
• Muscle strength of knee flexion and extension, ankle dorsal and plantar flexion, hip flexors and abductors
Tai Chi gait

- Walking forward
- Walking backward
- Walking up and down
- Walking side ways
- Turning around
Tai Chi gait

• Duration of single-limb left and right support in TC (1.95 seconds) vs. in normal walking (0.40 seconds)

Figure 4. Comparison of duration of each double- and single-foot support (in seconds) during Tai Chi (TC) and normal walking.²
Mindfulness

Features

• Mind-body connection
• Meditation music
• Zing (靜) : Calm & Mental tranquility

Health Benefits

• Stress reduction
• Situation awareness to prevent fall episode
• Quality of life

Further studies are required to examine whether the psychological benefits of Tai Chi are related to its Qigong components
### Concepts of Seated Tai Chi

<table>
<thead>
<tr>
<th>Based on the individual’s physical condition</th>
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<tr>
<td><strong>Within comfort zone</strong></td>
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<td><strong>Progressive exercise</strong></td>
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<tr>
<td><strong>Embracing myself</strong></td>
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<tr>
<td><strong>Visualization for disabled body parts</strong></td>
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Pt Condition | Tai Chi Principle
--- | ---
Sitting | Visualization
 | Movement control
Standing | Posture
 | Weight transfer
Walking | Tai Chi walking
 | Mind-body coordination

Figure. Tai Chi principles for each phase
Let’s practice

✓ Tai Chi greeting
✓ Tai Chi walking forward, backward, sidesteps
✓ Commencement
✓ Open and close movement
✓ Waving hands in the cloud
✓ Closing