Introduction / Background

Parkinsonism
- The clinical diagnosis of parkinsonism is “the presence of at least two of the four cardinal signs: resting tremor, rigidity, bradykinesia, and postural instability”.
- Symptoms often lead to limited functional mobility
- Patients who have unilateral bradykinesia with hypokinesia, changes in gait, balance, and decreased quality of life have positively responded to Lee Silverman Voice Technique (LSVT) BIG treatment according to Rehabilitation Research and Practice.

LSVT-BIG
- Focuses on increasing movement amplitude to achieve bigger, faster, and more precise movements in an attempt to restore normal movement patterns
- 16 session protocol, 1-hour session 4 days per week for 4 weeks
- Protocol includes high effort, intensive amplitude-based exercises for the limb motor system to recalibrate sensory perception and promote re-education of the sensorimotor system
- Fundamental treatment principle is based on neuroplasticity and research
- Has been shown to improve gait speed, the Functional Gait Analysis, the Berg Balance Scale (BBS), and the United Parkinson’s Disease Rating Scale (UPDRS)
- Certifications can be obtained by Physical Therapists (PT) Occupational Therapist (OT) or a respective student practicing under certified professional; Student PT (SPT)

Interventions
- Each exercise, as listed in Table 1, is completed with high intensity, with a focus on BIG movements, with a BIG mindset
- Carryover tasks were assigned for each day to encourage BIG movement in activities of daily living
- Exercises were completed at home once on session days and twice on off days

<table>
<thead>
<tr>
<th>Maximum Sustained Movements:</th>
<th>Exercise 1: Floor to Ceiling (Figure 1)</th>
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<td>Standing</td>
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<th>Repetitive / Directional Movements: Standing</th>
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<td>Exercise 2: Step Sideways (Figure 4)</td>
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<td>Exercise 3: Step Backwards</td>
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<td>Exercise 4: Forward Rock and Reach</td>
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<td>Exercise 5: Sideways Rock and Reach</td>
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<tr>
<th>Functional Component Movements</th>
<th>Sit to Stand</th>
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<tbody>
<tr>
<td></td>
<td>Foot to Step</td>
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<td></td>
<td>Pick Up Items from Floor</td>
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<td>Don/Doff Jacket</td>
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<td>Using Tool with Both Hands</td>
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Walking BIG
- With verbal cues for increased stride length, arm swing, and upright posture

Table 1: Daily Exercises

Outcomes
- Initial Evaluation
- Discharge

Functional Outcome Measures
- UPDRS III
- BBS (Max 56)
- MPPT (Max 36)

Strengths / Limitations
- Patient attendance at sessions
- Increased patient participation toward the end of treatment
- Patient participation in group exercise after discharge
- Interdisciplinary treatment including licensed OT, PT, and SPT
- Discharge testing during the last two days of treatment
- Moderate patient compliance with home exercise program

Discussion / Conclusion
- Effective approach of LSVT-BIG was provided by an interdisciplinary team of certified PT, SPT, and OT
- Diverse perspectives while administering the LSVT-BIG protocol yielded focus and improvements in gross and fine motor skills
- In other LSVT-BIG studies, improvements have been noted on various outcome measures including the UPDRS, the five time sit to stand, the BBS, and gait speed

Case Description
- Retired 77-year-old married white male, diagnosed with Parkinsonism two years prior
- Patient presentation: right-handed resting tremor, bradykinesia, hypokinesia, difficulty with sit to stands, turning, decreased amplitude of movements, posteriorly shifted posture with decreased functional base of support and decreased balance
- Patient’s main concerns: decreased walking speed, trouble getting out of a chair, getting in and out of the car, “fixing things around the house”, and picking items up off the floor
- This patient was a good candidate for this case report based on his diagnosis of parkinsonism and participation in the LSVT-BIG program provided by a LSVT-BIG certified OT and PT

Interdisciplinary Administration of LSVT-BIG by a Physical Therapist and Occupational Therapist on a Patient with Parkinsonism: A Case Report
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Doctor of Physical Therapy Program, University of New England, Portland, Maine

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Purpose
The purpose of this case study is to describe interdisciplinary treatment of LSVT-BIG on a patient with Parkinsonism and its effectiveness in both gross motor and fine motor outcome measures.

Acknowledgements
The author acknowledges Jennifer Audette, PT, PhD for guidance of the conceptualization of this study, Amanda Curtis, MPT, LSVT and Patrice Fox OT, LSVT for their participation, supervision, and assistance with completion of the study.

References

Table 1: Daily Exercises

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<thead>
<tr>
<th>Exercise</th>
<th>Seconds</th>
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<tbody>
<tr>
<td>1. Step Forward</td>
<td>10</td>
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<tr>
<td>2. Step Sideways</td>
<td>20</td>
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<tr>
<td>3. Step Backwards</td>
<td>30</td>
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<tr>
<td>4. Forward Rock and Reach</td>
<td>40</td>
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<tr>
<td>5. Sideways Rock and Reach</td>
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<thead>
<tr>
<th>Initial Evaluation</th>
<th>Discharge</th>
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<tr>
<td>UPDRS III</td>
<td>BBS (Max 56)</td>
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<tr>
<td>MPPT (Max 36)</td>
<td>Fine Motor Skills</td>
</tr>
</tbody>
</table>

Gross Motor Skills
- Walking BIG
- With verbal cues for increased stride length, arm swing, and upright posture

Fine Motor Skills
- Finger to Nose
- Writing Name & Address
- Lift Book to Shelf
- Blocks and Box (L Hand)
- Blocks and Box (R Hand)
- Drive Car
- Dine with Utensils

Strengths
- Patient compliance with home exercise program

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