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LSVT BIG® and LSVT LOUD® Program Development

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BACKGROUND

LSVT BIG® and **LSVT LOUD ®** are exercise programs that were specifically designed in the treatment of individuals with Parkinson's disease (PD). With the program and positive outcomes in 43 countries , 25,000 certified LSVT clinicians, and over 30 years of research from the National Institute of Health (NIH). (LSVT Global, 2020).

With continued success in the population with PD, research began branching out to assess the effectiveness of the neuroplasticity principles of **LSVT®** with other neurological conditions. Research suggests that utilizing the neuroplasticity principles with neurorehabilitation science has shown positive outcomes in those conditions. Neurological conditions that have been included in research and evidence-based studies include stroke/CVA, Alzheimer's/dementia, multiple sclerosis, and traumatic brain injury.

PROGRAM DETAILS

To provide **LSVT BIG®** and **LSVT LOUD®** standard intervention or the neuroscience principles to patients who have PD or other neurological conditions. Other conditions may include, but are not limited to:

- Stroke/CVA
- Multiple Sclerosis
- Alzheimer's disease/Dementia
- Traumatic Brain Injury
- Dystonic Disorders

Research also supports the use of **LSVT LOUD®** principles in pediatric conditions including:

- Cerebral Palsy
- Dysarthria
- Down Syndrome

(Mayo Clinic, 2018)

METHODS

Initially the program proposal was given and accepted for implementation by the CEO, Director of Rehabilitation, and the contracted speech therapist who is **LSVT LOUD®** certified. Two physical therapists, one physical therapy assistant, one occupational therapist, and one occupational therapy assistant completed the certification course through **LSVT Global®** to begin accepting patients in January.

Program details included:

- Education to rehabilitation department staff on the principles of **LSVT®** and compare these principles to traditional intervention evidence-based practices
- Implement neuroplasticity principles by providing patient care to patient populations with neurological conditions.
- Education to hospital staff on the program and program outcomes which included what type of conditions would benefit from this intervention
- Education to physicians and their nursing staff to refer patients who may be appropriate and benefit from this type of intervention
- Education to the community through educational meetings through local entities which invite community members to listen to presentations given by resources in the community to increase health care education and health related decisions.
  - Home Health and Hospice
  - Jackson County Chamber of Commerce
  - Jackson County Senior Center
  - Holton Community Hospital Senior Life Solutions
- Collaborate to strengthen interdisciplinary communication and intervention plans between physical, occupational, and speech therapy staff.

RESULTS

Case Study: 69-year-old male diagnosed with Parkinson's disease approximately seven years ago. He was referred to physical therapy and occupational therapy for generalized weakness, history of falls, difficulty ambulating, and difficulty with lower extremity dressing. Due to personal reasons, he asked to wait for speech therapy due to scheduling and time restraints. Due to the pandemic, **LSVT LOUD®** had not been completed yet. The patient is currently prescribed traditional parkinsonian medications.

- Goals included to improve his strength to continue the role of caregiver, improve his balance to continue working in his shop as a wood maker, and improve dexterity to continue crafting Christmas decorations to sell.

	Pre-Intervention	Post-Intervention
30-Second Sit to Stand	7 completed	15 completed
Activities Specfici Balance Confidence Scale (ABC)	53%	77%
Timed Up and Go (TUG)	15 seconds	7.8 seconds

- Other improvements noted by patients who are currently participating but have not yet completed the program include:
  - Improved Berg Balance Scale scores
  - Decreased timed ADLs
  - Decreased falls in and outside of their homes
  - Subjectively reported that the stiffness and rigidity they experienced has decreased with exercise

BOTTOM LINE FOR OT

The protocol that is used in interventions with Parkinson's Disease is proven to be successful through its manipulation of dopamine-producing cells in the brain. The foundation of **LSVT-BIG®** can be used to treat PD, post-stroke populations, and other neurological conditions as well as possible upper extremity injuries by focusing on functional movement and how it impacts all aspects of the client's lives.

When providing **LSVT-BIG®** and **LSVT-LOUD®** to patient populations, it is vital to maintain the high level of standardization of the protocol to provide the exercise prescription in its entirety. If a patient is unable to complete the minimum efficacy of 4 times a week for 4 weeks, then a traditional intervention approach utilizing the neuroplasticity and neuro-rehabilitation principles has evidence-based practice to show positive outcomes.

REFERENCES

- Millage, B., Vesey, E., Finkelstein, M., & Anheluk, M. (2017). Effect on Gait Speed, Balance, Motor Symptom Rating, and Quality of Life in Those with Stage I Parkinson's Disease Utilizing LSVT BIG®. *Rehabilitation Research & Practice*, 1–8. https://doi-org.cuhsl.creighton.edu/10.1155/2017/9871070
- LSVT Global, (2020). LSVT LOUD treatment. *LSVT Global*. Retrieved from: https://www.lsvtglobal.com/LSVTLoud
- Mayo Clinic (2018). *Dystonia*. Retrieved from: https://www.mayoclinic.org/diseases-conditions/dystonia/symptoms-causes/syc-20350480