



Lifestyle Changes Between Pre- And Post-Stroke Patients

How Gait Affects Individuals with Stroke

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INTRODUCTION

Neuro-Fit Supportive Living is a non-profit organization that works closely with patients that have suffered from both Acquired Brain Injury (ABI) and Traumatic Brain Injury (TBI). Programming focuses on cardiovascular fitness, working on upper and lower body extremities and core/ balance . Neuro-fit works with patients who may have suffered from a stroke, Parkinson’s Disease, TBI or other Neurological Disorders. The mission of Supportive Living is to work with patients to help regain their mobility, endurance and gain their confidence back while also setting goals with them that they want to complete.

INTERNSHIP PROJECT OBJECTIVE

- To analyze how the transition from a specific pre-stroke lifestyle (e.g., sedentary vs. active) influences a patient’s psychological readiness and physical capacity to engage in gait-retraining exercises.
- To evaluate how pre-lifestyle factors correlate with post-stroke gait efficiency, and to utilize these insights to design personalized cardiovascular training that reduces metabolic strain and improves functional independence in brain injury survivors.

RELATED LITERATURE

- Research indicates that gait is not just a secondary symptom of a stroke, but a primary determinant of a survivor’s functional independence, safety, and long-term musculoskeletal health. Approximately 80% of stroke survivors experience gait dysfunction, which significantly alters how they interact with their environment (Cirstea,2020).
- Research indicates that many stroke survivors experience a profound shift from active, independent routines to a more sedentary and structured lifestyle focused on secondary prevention and rehabilitation. While pre-stroke life may have involved spontaneous physical activity, post-stroke reality often requires managing significant motor dysfunctions, with over 80% of patients remaining in a passive state during early recovery due to fatigue and reduced muscle strength. Furthermore, survivors often must transition from professional and social roles to a new "Life 2.0," which involves adopting strict dietary patterns and structured home-based exercise to mitigate the high risk of recurrence (D’Amico, Zhang, Ibrahim, & Pikula, 2025).

MATERIALS & METHODS

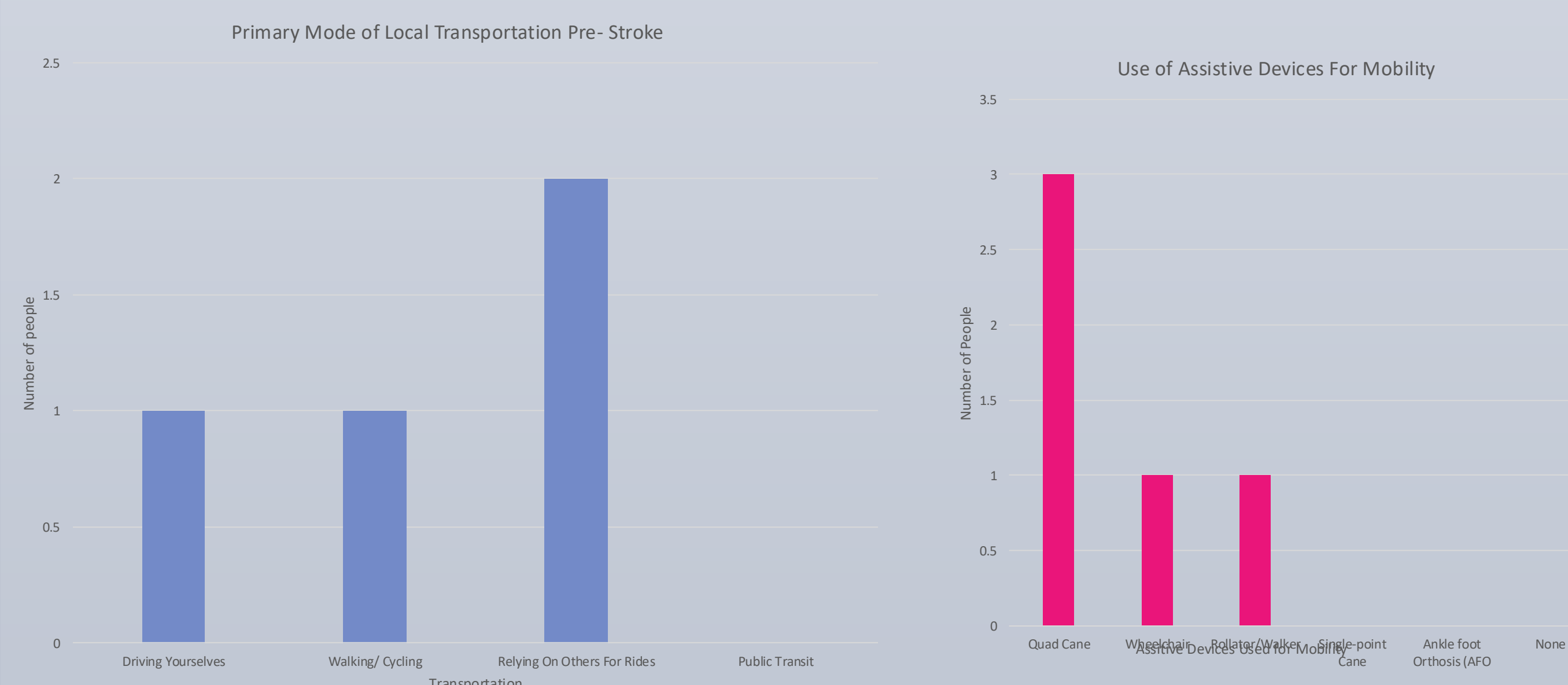
Methods:

- Categorized patients based on their pre-stroke activity levels (e.g., occupational demands, hobbies, or sport history) to see if "muscle memory" or previous aerobic baselines correlate with faster gait recovery.
- Designed fitness plans that focus on improving gait symmetry to lower the heart rate during functional movement.
- Conducted a structured interview with participants asking a series of questions pre- and post-stroke
- Identified what physical activity they miss the most
- Assessed participants’ gait using the Berg test

Materials:

- A survey was created to measure the influence of stroke on participants’ daily activities, mobility and overall quality of life. This was used to help clarify the transitions from their lifestyle prior to their stroke versus current experiences post-stroke.
- A data sheet designed to report individual’s pre-stroke activity levels and gait

RESULTS



The charts above represent some of the findings from the survey. The charts provide questions from the survey conducted on primary transportation pre-stroke and the use of assistive devices for mobility post-stroke.

RESULTS

To discover the lifestyle changes between pre- and post stroke patients, a survey was conducted that focused on daily living activities, physical activity and gait, and individuals social and emotional well-being. Individuals provided details of their life pre- post stroke and the way it has changed their life. During the interview, many discussed that post-stroke it is hard to be able to walk for long periods of time without having to sit down and take breaks. Some also noted their inability to go grocery shopping for any length of time after having a stroke. Individuals have also discussed that their social life is very different now than it was pre-stroke, indicating that prior to their injury they went on outings more than 2-4 times a weeks and post-stroke they only go out on outings 1-2 times a week.

CONCLUSIONS

These findings concluded that individuals' lifestyle pre-and post stroke has changed significantly. The survey highlights a decline between being able to function independently and participate individually since their strokes occurred. The transition from a pre-stroke individual only attending 2-4 social events to the individual post-stroke only attending 1-2 events shows how their emotional and social well-being was affected. By indicating how individuals were affected, we can now find a way to help restore their quality of life and their physical gait.

REFERENCES

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ACKNOWLEDGMENTS

Meredith Macdonald, Site Supervisor, Project Advisor