

# Brain Injury Survivors: The Benefits of Physical Activity

## Shariany Del Valle Healthcare Studies

### Introduction

- Supportive Living Inc. is a non-profit organization that supports the lives of those who have suffered a traumatic brain injury (TBI) or an acquired brain injury (ABI).

They provide residential programs, wellness programs and applied research of rehabilitation.

#### Neuro-fit Program:

- This program helps individuals with functional limitations in a one hour assisted session to improve cardiovascular fitness, strength and mobility, and balancing.

- Each session varies for each individual but

Cardiovascular	Strength	Balance
Flexibility	Weight	Blood Pressure
Sleep	Memory	Communication
Socialization	Self-esteem	Sense of Purpose

### Related Literature

#### What is a traumatic brain injury?

- A TBI usually results to a blow or a jolt to either the head or the body with some resulting in temporary or short-term brain functioning.

#### Benefits of Physical Activity

Physical inactivity has a negative impact on everyone but the effects appear worse on individuals with a traumatic brain injury.

- Physical activity not only benefits physical health but cognitively improving processing speed, learning ability, & executive functioning as well as psycho-social improving self-esteem, mood, social participation, sleep and more. (O'Reilly, n.d)

"Social skills are a complex system of behaviors that determine how well we communicate with other" (Living with Brain Injury: Social, n.d). Those that have been affected by brain injury might also be affected with social skill abilities. This might include:

- Verbal and motor impulsivity
- Poor visual perception of facial and body language
- Poor auditory perception of vocal cues
- Invasion of others personal space
- Inappropriate touching
- Disorganization

### Project Objective

**Objective:** To examine the positive physical, mental and social benefits that participants experience during their time in the Neuro-fit program

### Methods

- Assess participants cognitive and physical ability
- Document the exercises performed during their session
- Assist participants in their range of motion if needed
- Report to site supervisor any concerns or changes with the participant

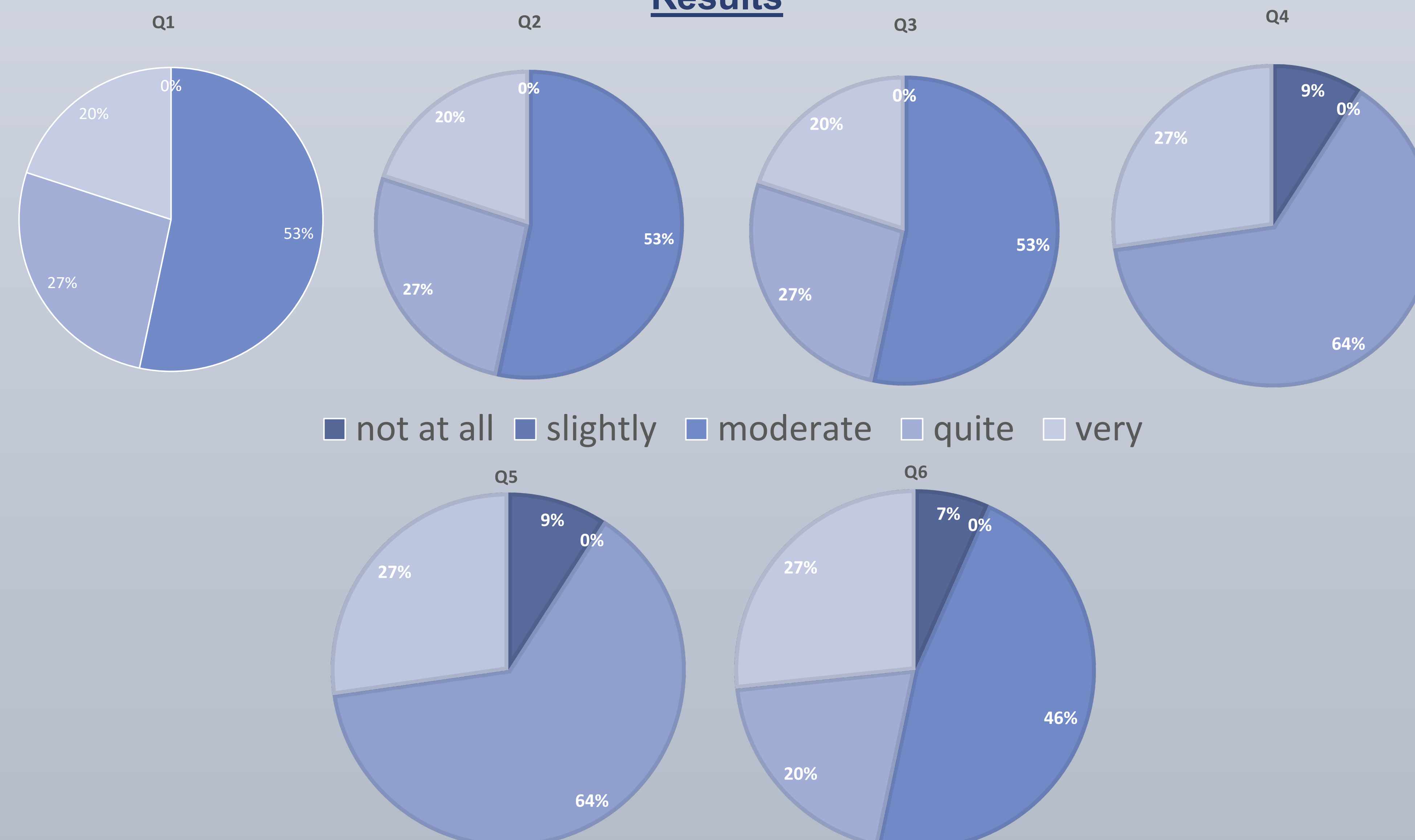
#### Functional Assessment:

- Three times a year the Neuro-fit program sets up a functional assessment to track the progress of each of the participants mainly addressing factors of activities of daily living.
- This semester 15 participants were evaluated across the Marblehead and Cape Anne YMCA locations
- The functional assessment allows for reoccurring of collecting data to better assess a participants functional status objectively and subjectively.
- The assessment includes:
  - **30 Second Sit to Stands:** the number of times a participant can stand up from sitting in a chair without using hands for assistance in 30 seconds.
  - **Grip Strength:** measures the maximum force that is produced by a participants forearm muscles using a dynamometer.
  - **Timed Up & Go:** identifying 10 feet, the participant is timed walking toward the 10 foot mark and back to assess their mobility
  - **BERG Functional Balance Scale:** a series of balance tasks performed to determine the participants ability to safely balance
  - **10 Meter Walk Test:** identifying 10 meters, the participant is timed walking to the mark to assess walking speed and mobility
  - **Sitting Balance Scale:** a series of tasks performed to assess a participants balance while sitting
  - **Visual Analogue Scale (EQ-VAS):** subjective measure to see how a participant evaluates their own health state from 0 being the worst to 100 being the best
  - **Quality of Life After Brain Injury – Overall Scale (QOLIBRI-OS):** subjective measure to see how satisfied participants are with various aspects in their life

	Not at all	Slightly	Moderately	Quite	Very
1. Overall, how satisfied are you with your physical condition?					
2. Overall, how satisfied are you with how your brain is working, in terms of your concentration, memory, thinking?					
3. Overall, how satisfied are you with your feelings and emotions?					
4. Overall, how satisfied are you with your ability to carry out day to day activities?					
5. Overall, how satisfied are you with your personal and social life?					
6. Overall, how satisfied are you with your current situation and future prospects?					

Quality of Life After Brain Injury- Overall Scale (QOLIBRI-OS)

### Results



### Conclusion

- The participants enjoy coming to their weekly sessions as it allows them to continue working on their strength and other weaknesses they may have.
- They demonstrated their joy in coming to the program because it gets them out of their home and into a community.
- Participants expressed many benefits coming to the program including getting to workout, create relationships and feel a sense of normalcy outside in a public gym.

In conclusion, the Neuro-fit program allows individuals who suffered a brain injury to attend weekly sessions of their individualized exercise plans. Each plan targets their goals whether it's walking, balancing, or strengthening an affected weak side. Many of the participants don't attend physical therapy so this program allows them to still be active with the assistance they need. It creates a community for them to talk and see others with a brain injury completing their exercise plans weekly. They're excited to see each other weekly and encourage each other to do the best they can.

### References

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Neuro-Fit - Supportive Living Inc.. Supportive Living Inc. (n.d.). <https://www.supportivelivinginc.org/neuro-fit/>

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