

Case Comparison Protocol: The Effects of Therapeutic Horseback Riding for Improving Balance, Core Strength, and Endurance in Children with Prader-Willi Syndrome

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Background

Prader-Willi Syndrome (PWS) is a genetic disorder caused by the absence of chromosome 15, and it is commonly characterized by:

- Hypotonia
- Hypogonadism
- Excessive hunger
- Delayed achievement of motor milestones
- Sleep disturbances
- Behavioral or psychiatric disturbances
- Short stature
- Obesity
- Smaller hands or feet
- Scoliosis
- Hip dysplasia

Smaller foot size, as well as the presence of scoliosis, can impact a child's balance and center of gravity, impairing their ability to perform ADLs and participate in various settings. There is no cure for the disorder, but symptom management allows individuals with PWS to have a good quality of life. Current treatment entails pharmacological intervention such as hormonal therapy, as well as an interdisciplinary approach to manage the symptoms of PWS.

Recruitment

Inclusion Criteria

- Diagnosis of Prader-Willi Syndrome
- Under age 13
- Ability to access a therapeutic riding facility
- Parental commitment to allow participation

Exclusion Criteria

- Other diagnosed neuromuscular disorders
- Currently receiving therapeutic riding sessions at the start of the study
- Vestibular diagnosis that would prevent their participation in therapeutic riding

Interventions

Control Case:

- Home Exercise Program 3x/week for 6 weeks

Intervention Case:

- Home Exercise Program 3x/week for 6 weeks
- Therapeutic Riding Program at Serendipity Therapeutic Riding Center 1x/week for 6 weeks

Purpose

The purpose of this case comparison study will be to determine if there is an improvement in outcome measures relating to balance, endurance, and core strength in children with Prader-Willi syndrome following participation in therapeutic horseback riding.

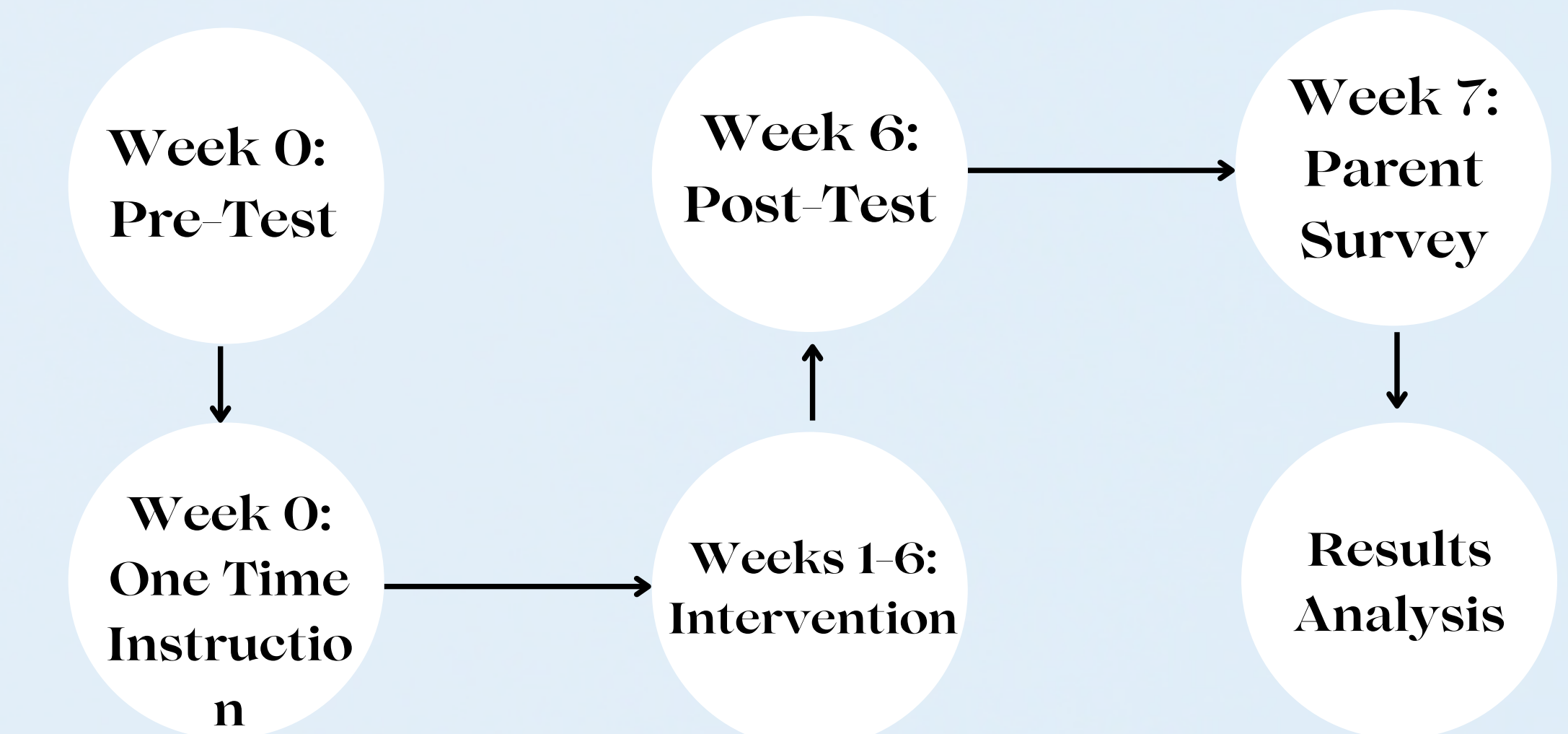
Discussion

No previous research has been conducted on the benefits of therapeutic riding for children with PWS. Children with PWS often have impaired balance, endurance, and core strength which can affect their function and ability to participate in various activities. Potential benefits related to this study include the development of an exercise protocol that includes physical therapy treatment with complementary therapeutic riding activities in order to address functional limitations and increase participation.

Conclusion

The findings from this study may support the use of therapeutic riding as a complementary intervention for targeting balance, core strength, and endurance in children with PWS. Future researchers could potentially utilize this methodology to investigate a larger sample size for this patient population in order to generalize to the specific patient population.

Methods



Each participant will receive the same home exercise program, while only one will receive the intervention of therapeutic horseback riding. Both children will complete the same outcome measures at the Misericordia Pro Bono clinic via a blinded recorder. Outcome measures include: the Modified Clinical Test of Sensory Interaction on Balance, Pediatric Balance Scale, and the Unilateral Hip Bridge Endurance Test.



<https://www.eltrc.org/therapeutic-riding>

