

Strength Training can have Unexpected Effects on the Self-concept of Children with Cerebral Palsy

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Purpose:

Does participating in a home-based strength training program increase the self-concept of children with cerebral palsy (CP)?

Design/Methods:

The study was a single-blind, randomized, controlled trial where 10 children (4 boys and 6 girls; avg age=12.3) with spastic diplegic CP were randomly assigned to complete a home-based strength training program. Six children (4 boys and 3 girls; avg age=11.9) with spastic diplegic CP were assigned the control group who did not participate in any strength training program. All participants had a gross motor function classification level range of 1-3. Each participant continued their regular therapy programs throughout the duration of the experiment. Those in the treatment group were instructed by a physical therapist on lower limb strength exercises on the 1st, 2nd, and 4th week of the 6-week program. Each participant was given a log book to record their exercises they completed each session. The physical therapist would also adjust the training load of the participants by adding free weights to a backpack worn by the participants. The participants completed 3 sets of each exercise 3 times a week for 6 weeks. The participant's in both the control and experimental group had their self-concept measured by using the Self-Perception Profile for Children scale before the trial period, immediately after the 6th week, and 18 weeks after starting the program.

Results:

There was a significant difference between the control and experimental group in the scholastic competence domain between baseline and six weeks and baseline and 18 weeks with the experimental group decreasing slightly and the control group increasing their scholastic competence. In the social acceptance domain at 18 weeks there was a similar trend with the experimental group decreasing and the control group increasing in social acceptance and approaching significance at six weeks. The Athletic competence seemed to increase in the control group from baseline to six weeks and 18 weeks whereas the experimental group showed relatively no change.

Conclusion:

The results suggest that a relatively short home-based strength-training program can inhibit self-concept in children with CP. Suggested reasons why the participants who completed the strength-training exercises had lower self-concept in several areas compared to those in the control group are that they had less time to study, less time to interact and play with friends, and they were more conscious of lower athletic ability. Overall though, both participants in the control and experimental group had relatively high positive self-concept at baseline, six weeks, and 18 weeks, which suggest that children with CP don't have lower self-concept than their unimpaired peers.

Strengths:

Strengths include using a randomized, single-blind controlled trial, having licensed physical therapist train the children, and scale used to measure self-concept had relatively high test-retest reliability, and construct validity.

Limitations:

A relatively small sample size, which was a convenient sample was used. The time frame which changes in self-concept were measured was relatively short.

Practical Application:

Having to go to therapy may make kids believe that there is something wrong with them which they hadn't thought of much before. Even strength training may seem like another form of therapy which the kids may not find very entertaining and may decrease their self-concept. Having the children doing strength training through activities that don't seem like therapy, could benefit their self-concept. These strength training activities could be hippotherapy or some sort of adaptive sports. Clinicians also shouldn't assume that just because a child has spastic diplegic cerebral palsy, he or she doesn't necessarily have low self-concept.