

Introduction: Cerebral palsy (CP) causes compromised hand function. The effects of hand strengthening exercises on grip strength in CP patients are not widely studied in Sri Lanka. Follow-up is important to see the persistent effects after the cessation of exercise treatment.

Objectives: To determine the effects of a supervised strengthening exercise program on immediate, 4-weeks post-intervention and follow-up on grip strength compared to standard care in CP patients

Methods: 40 CP patients (aged 11- 22 years) were randomly allocated into an intervention group (IN) and a control group (CN). The IN followed a supervised handgrip strength exercise routine for 30 minutes, two times per week for 8 weeks, while both IN and CN followed standard physiotherapy care throughout the trial period. Hand grip strength was measured and data of Pre-intervention, post-intervention, and 4-week follow-up were compared between groups.

Results: Mean age of the sample 16.8 (± 5.3) years, male: female 22:18. The baseline mean grip strength of the IN was: right hand (RH) 13.3 (± 5.3) kg, left hand (LH) 12.3 (± 5.7) kg. CN group: RH 12.3 (± 6.1) kg, LH 12.9 (± 5.2) kg. Post-intervention mean grip strength of the IN: RH 14.9 (± 5.4) kg, LH 14.9 (± 5.5) kg, CN: RH 12.6 (± 5.3) kg, LH 13.2 (± 5.7) kg. The absolute change in mean difference is statistically significant. CN: RH 0.3kg, LH 0.4kg and IN: RH 1.6 kg, LH 2.6 kg, ($P = 0.041$). Post-intervention 4-week follow-up, mean grip strength: IN: RH 12.1 (± 3.3) kg, LH 12.2 (± 3.6) kg. CN: RH 12.2 (± 5.6) kg, LH 12.1 (± 4.3) kg. Grip strength reduces below baseline.

Conclusion: This supervised exercise program was capable of improving the grip strength of the CP patients. Discontinuation of the program indicates a reduction of grip strength to the baseline. A longer duration of the intervention and a larger sample size would provide more statistically significant results.