OBJECTIVES

To examine differences in physical activity (PA) intensity levels (sedentary, light PA, and moderate-vigorous PA [MVPA]), postural balance (center of pressure [COP] path length and sway area), lower limb isometric muscle strength, and adiposity (fat mass index [FMI]) for youth with cerebral palsy (CP) compared to typically developing peers (TD) peers.

RESULTS

Figure 1: Mean within-pair differences (95% CI) of physical activity (PA) intensity levels; mean within-pair differences = cerebral palsy (CP) - typically developing (TD)

Table 2: Median (range) of postural control outcomes in youth with cerebral palsy (CP) and their typically developing (TD) peers; median within-pair differences = CP - TD

Table 3: Median (range) of the instability index in youth with cerebral palsy (CP) and their typically developing (TD) peers; median within-pair differences = CP - TD

Table 4: Mean (95% CI) of lower-extremity muscle strength (Nm/kg) outcomes in youth with cerebral palsy (CP) and their typically developing (TD) peers; median within-pair differences = CP - TD

DISCUSSION

Statistical Analysis:

- Using STATA v14.0, descriptive statistics are reported as either means [95% confidence intervals (95% CI)], or medians (ranges), where appropriate.
- Comparisons between cohorts, are reported either mean within-pair differences (range) using Wilcoxon signed rank test, or medians (ranges), where appropriate.

LIMITATIONS

- Small sample restricted sub-analyses and consideration of potential confounders (i.e., by GMFCS, distribution of involvement, previous surgeries).
- Generalizability may be limited to children with CP living in urban centers, as rehabilitation services and access to adapted PA may differ in rural communities.

CONCLUSIONS

- Youth with CP exhibit reduced PA participation, substantial postural stability deficits, and reduced muscle strength.
- A larger cohort is needed to understand the impact of functional ability level, and to explore the relationship between PA and the impairment measures of strength and balance, as well as the roles of sex and age.
- These body structure and function outcomes may be suitable targets for therapeutic intervention and measures of the effectiveness of PA training.

Future Directions:

- Further research is warranted to examine potential associations between outcomes.

REFERENCES


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