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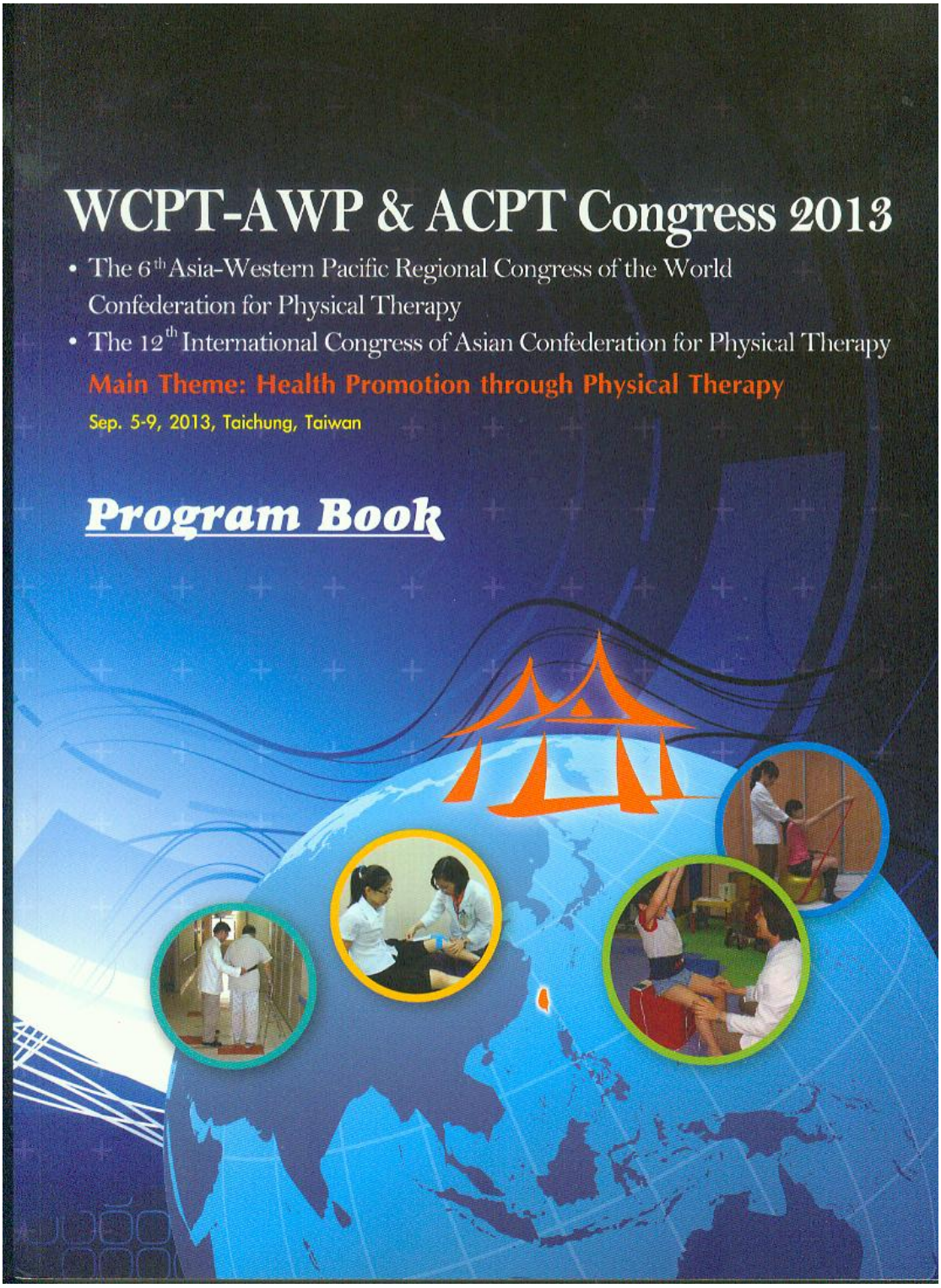

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IMMEDIATE CHANGES OF SITTING BALANCE IN PARA EQUESTRIAN RIDERS AFTER HIPPOTHERAPY

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ABSTRACT

Background and Purpose: The study aimed to examine the immediate changes of sitting balance in para equestrian riders after a session of hippotherapy.

Materials/Methods: Four active para equestrian riders (12-23 years, 2 male, all spastic diplegic CP, 2 GMFCS level I and 2 GMFCS level III) with experience in international para equestrian competitions were recruited for assessing their sitting balance using modified functional reach before and after 30 minutes of hippotherapy. Reach distance and corresponding center of pressure (COP) excursion of forward, rightward, and leftward reach were studied. Reach distance was obtained by tape measure and COP excursion was measured using Zebris FDM-S system.

Results: After hippotherapy, all riders revealed an increase in the value of reach distance in all directions. Average increase in distance for forward, rightward, and leftward reach were 9.1, 1.2, and 7.1 mm. The change of distance for forward and leftward reach was considered as moderate to large (effect size = 0.75 and 0.96). Moreover, an increase in the value of COP excursions was observed in three riders for forward and leftward reach (average increase 8.1 and 12.1 mm) and in all for rightward reach (average increase 14.8 mm). The change in COP excursions for all directions was considered as small (effect size = 0.23-0.36), however. Nevertheless, inspection of the COP time series revealed an improved smoothness of trajectories and curve shape after hippotherapy.

Conclusions and Clinical Relevance: The findings were preliminary and suggested that experienced cerebral palsy para equestrian riders might exhibit improvement in sitting balance right after a session of hippotherapy.