Abstract

The theoretical part focuses on the causes of motor difficulties in prematurely born children from the perspective of developmental neurobiology, neuropathology, and neurophysiology. It elucidates the consequences of these exclusively central changes with implications for motor learning. Also, intervention approaches to reduce these deficits are described. The description of intervention approaches, additional recommendations from the literature and the theoretical part serve as the basis for the practical methodology.

The research part of the thesis consists of a longitudinal group intervention involving 16 children aged 8-17 years, divided into 5 groups according to age and motor level, with 3-4 children per group. The intervention lasts for 9 weeks with a frequency of once a week for 60 minutes. The objective method for evaluating the intervention's effect is the MABC-2 tests. The selection criteria are: children under the Comprehensive Care Center for Children with Perinatal Burden at the Department of Pediatrics and Inherited Metabolic Disorders of the General University Hospital in Prague, artificially set 30 km distance from the place of residence, and, above all, interest from both children and parents.

The result is a statistically significant difference in most areas of motor skills according to MABC-2 (aiming and catching, balance and overall scores). The intervention effect is moderate to large (d=0.71 - total test score, d=0.74 - percentile) with static significance values of p=0.006 and p=0.001 with the potential for practical benefit. There is no statistically significant improvement in manual skills. Five children transitioned between performance bands, including three children who moved out of the band below the 5th percentile and escaped DCD classification. There is also noted negative (2) or no effect (2) on results, primarily among older (15-17 years) children, which didn’t affect their placement in the performance band. The result is consistent with the negatively significant correlation between age and change in the MABC-2 total test score (r= -0,71 s p=0,002).