Abstract

Gait acquisition is supported by changes in the neuromusculoskeletal system of the child. Changes in the dimensions of the body structures resulting from the growth of the child partly explain gait improvement in the first year of life. Objectives: To evaluate whether changes in body mass and leg length modulate the effect of independent gait practice (experience) on gait speed and stride length. Method: Thirty-two infants with normal development were monitored monthly from the acquisition of independent gait until six months post-acquisition. Longitudinal evaluations included measurements of the body mass and leg length of each child. Temporospatial variables of gait (speed and stride length) were documented using the Qualisys Pro-reflex® system. The data were analyzed using multilevel regression models, with a significance level of =0.05. Results: An effect of the practice time on speed (p<0.0001) and stride length (p<0.0001) was observed. The change in leg length had a marginal effect on the rate of gait speed change: children whose leg growth was faster showed a higher rate of speed change (p=0.07). No other effects of anthropometric parameters were observed. Conclusions: The results suggest that the practice time promotes the improvement of the gait pattern of infants in the first year of life. However, the effects of the leg length and body weight of infants on the benefit of practice time remain undefined.

Keywords

Movement, anthropometry, children, gait.