

Health-related fitness and motor competence in children with a vision impairment: a cross-sectional study of children in Ireland

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Background: Health-related fitness (HRF) and motor competence (MC), are positive predictors of physical activity in children. In Ireland, children who are blind/vision impaired (BVI) are less active compared to the general population, but little is known about HRF and MC in this population. Understanding HRF and MC levels can provide insight into why PA is lower in children with BVI, and highlight competencies to improve for better health.

Method: A variety of validated tests were used to assess HRF, MC, and body composition in 59 children with BVI (mean age: 12.34 ± 2.40 years). Independent samples t-tests and Chi-square tests for independence were used to assess sex differences in HRF and MC.

Agglomerative hierarchical clustering was used to determine if groups of participants could be identified based on their HRF and MC scores. Associations between clusters and BMI category were investigated. **Results:** MC was low, with object-control skills of throw (22%) two-hand strike (29%) and kick (31%) having the lowest percentage of participants at mastery/near-mastery (MNM). These were also the three skills where significant differences by sex were seen, with more males achieving MNM than females. Over a third (38%) of participants had poor cardiorespiratory endurance. Cluster analysis revealed two clusters. Children in the lower competence cluster were significantly less likely to have healthy cardiorespiratory endurance and had significantly poorer MC in six of ten skills (balance, skip, run, hop, dribble, and throw). There was higher prevalence of overweight/obesity amongst those in the lower competence cluster (46% vs 26%). **Conclusion:** A substantial proportion of children with BVI in Ireland are at risk of sedentary lifestyle and poor health due to low physical competence. Interventions to develop HRF and MC in children with BVI work. Coaches, teachers and PA providers must be provided with resources and training to support the inclusion of those who are BVI, specifically for HRF and MC development.