Tai Chi, Wii Fit and rope skipping exercise interventions are particularly effective in improving balance for young people with intellectual disabilities.

Commentary on: Maiano C, Hue O, Morin A, Lepage G, Tracey D, Moullec G. Exercise interventions to improve balance for young people with intellectual disabilities: a systematic review and meta-analysis. *Developmental medicine and child neurology* 2018;

Commentary

Implications for practice and research

- Exercise interventions that focus on static and dynamic posture can improve balance in young people with intellectual disabilities.
- Exercise interventions focussed on Tai Chi, Wii Fit balance board exercises and rope-skipping demonstrated some of the largest effects.
- Further studies are needed to determine fidelity of the exercise approach, and who is best placed to carry out the intervention to assist with the carry over into practice.

Context

Falls and risk of falling is a problem for individuals with intellectual disability. Ho et al. report that risk of falling amongst this population group is higher than that of their peers.[1] This risk can impact on activities of daily living including meaningful leisure activities, therefore impacting on well-being and engagement.[2] This study reviews the evidence both describing the problem as well as considering the mechanisms underpinning the problem.

Methods

The study used a systematic review and meta-analysis of quasi-experimental or experimental studies to examine the effects of exercise interventions designed to improve balance in young people with intellectual disabilities.[2] The review had a clearly defined question and sought articles from a broad range of databases using a defined search strategy. Inclusion criteria defined age-range and gave justification of how mixed age ranges were handled. Articles were selected if the intervention predominantly focused on improving balance for young people with intellectual disabilities. Where data were unclear or missing, authors were contacted for further details. Eligibility of articles was confirmed using the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) statement then rated using the French-Canadian version of the Physiotherapy Evidence Database Scale. Analysis considered effect size based on mean change scores using a composite balance score. Issues of small sample size were considered using Hedges' *g* value.

Findings

Results were reported under headings reflecting the key findings of the articles. Whilst this was of interest, a commentary on the 'bottom line' of the results would have been helpful. Participant characteristics in terms of geographical location and study design were given alongside assessment tools used, duration of activity and adaptations. Effects of exercise interventions to improve static and dynamic balance were considered separately and reported in terms of significant improvement, level of heterogeneity and publication bias. Static-dynamic balance was also considered but the small number of studies included in this section lead to inconclusive results. Finally, sub-group analysis was undertaken but results were non-significant. Overall, the quality of studies reviewed

was considered poor. Findings revealed exercise groups showed a significant improvement in static and dynamic balance compared with control groups.

Commentary

This study undertook a systematic review and meta-analysis to determine the effects of exercise interventions on balance in young people with intellectual disabilities. The purpose was to estimate the pooled effect size of the interventions on balance and to examine whether these differed as a function of pre-specific characteristics. Exercise interventions that were most effective were Tai Chi, Wii Fit balance game training and rope skipping exercises. It is interesting to note that such exercises are potentially more meaningful and fun to young people, reflecting many activities that their peers might engage in. Given engaging in activity that is meaningful and person-centred is known to increase motivation and participation[3], this might suggest why these interventions were successful. The study does not comment on this but does allude to the specificity of the successful interventions. Building such activity into daily routines, school and college life would normalise the activity and engage others to participate. As well as improving balance, exercise also would improve general physical health and well-being. This study does confirm similar findings to other client groups including older adults and children with cerebral palsy.[4,5]

References

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