

Stability in Motion: Physiotherapy Interventions to Target Postural Control in Adolescents with Intellectual Disability: A Narrative Review

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ABSTRACT

Intellectual Disability (ID) is a neurodevelopmental condition that is characterised by severe intellectual functioning and adaptive functional shortcomings. A 2022 study stated that the prevalence of intellectual disability in India was approximately 1.4-2%. Poor postural control, normally observed in adolescents with ID, is the inability to maintain the center of mass of the body during the base of support in combination with visual, vestibular and somatosensory information and results in an increased postural sway and slower motor coordination. The purpose of this narrative review was to estimate the effectiveness of physiotherapy and exercise-based interventions to enhance both the static and dynamic balance of adolescents with ID. A literature search was conducted using major electronic databases, including PubMed, Google Scholar and Science Direct, for studies published between 2012 and 2025. Studies involving adolescents aged 10–19 years with intellectual disability and evaluating physiotherapy or exercise-based interventions targeting balance were included, of which 20 studies met the inclusion criteria. Structured balance training, hippotherapy,

trampoline exercises, neuromuscular training, virtual-reality-based exercises, and a dual-task balance training program were some of the identified interventions. The duration of interventions was between 8 and 12 weeks. A majority of the studies have found dramatic changes in the field of both static and dynamic balance, postural control and functional mobility. Findings of meta-analysis showed that the effect sizes are large, which implies that physiotherapy interventions are very effective in increasing balance performance among adolescents with intellectual disability. In conclusion, physiotherapy-based exercise interventions, especially those that include the use of progressive balance tasks and post-sensory-motor training ones, are useful in enhancing balance and postural stability among adolescents with intellectual disability. The use of structured physiotherapy programmes in rehabilitation and school-based physical activity programs could be used to improve functional independence and decrease the risk of falls in this population.

Keywords: Adolescents, Balance Training, Intellectual Disability, Physiotherapy Interventions, Postural control.

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