

Pilates based Interventions in Cerebral Palsy Rehabilitation: A Narrative Review

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ABSTRACT

Cerebral Palsy (CP) is a neurological condition that affects the movement and posture, leading to activity limitations, due to non-progressive injury to the brain during developing fetus or infant. In addition to motor impairments, children with CP are also experience sensory problems, intellectual disabilities, challenges with perception, communication issues, epilepsy, behavioural concerns and musculoskeletal complications. The prevalence of CP in India is 2.95 per 1000 live births. A literature search was conducted on Google Scholar, Scopus, PubMed, PEDro databases for studies published between 2016 to 2025 by keywords; "Cerebral Palsy" AND "Pilates" which resulted in retrieval of six articles and we included these articles in our review. This narrative review explains the impact of Pilates training as a treatment approach in CP rehabilitation. Pilates is an innovative method which involves exercises that focus on strengthening, stretching and coordination. The six fundamental concepts of Pilates training are flexibility, breathing, control,

centering, concentration and accuracy. Children with CP, who can perform functional activities like standing, walking but they require improvements in muscle strength, joint flexibility, mobility and postural stability may get benefit from Pilates training to enhance muscle contraction, relaxation, flexibility, strength and balance. Furthermore, Pilates may assist to reduce spasticity and improve balance; both components are essential for functional independence and quality of life. The exercises can be customised to meet individual needs, making Pilates training a versatile intervention option for children with varying CP severity. Despite the promising results, the review identifies the gap in existing literature, including lack of standardised protocol, highly reliable outcome measures and high quality studies on Pilates training in CP. However, further research is required to examine the long term effects, optimum dosage and specific exercises that yield best outcomes for CP children.

Keywords: Balance, Core stability, Quality of life, Posture