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Resistance training for gait speed and total distance walked during the chronic stage of stroke: a meta-analysis.

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Abstract

OBJECTIVE: To conduct a meta-analysis examining the effectiveness of resistance training on comfortable gait speed and total distance walked when initiated in the chronic stage of stroke.

METHODS: MEDLINE, CINAHL, EMBASE, and Scopus databases were searched from 1980 to June 2012. Studies were selected if they met the following criteria: (1) they were randomized controlled trials; (2) individuals in the studies were entered into the studies at or over 6 months post stroke; (3) resistance training was initiated during the chronic stage of stroke; and (4) study participants were ≥18 years of age. A standardized mean difference (SMD ± SE and 95% confidence interval [CI]) was calculated for at least 1 of the following outcomes in each study: comfortable gait speed and/or 6-minute walk test (6MWT). Treatment effect sizes were interpreted as follows: small, ⩾0.2; moderate, ⩾0.5; or large, ⩾0.8. Study quality was assessed using the Physiotherapy Evidence Database (PEDro) tool.

RESULTS: Ten randomized controlled trials met inclusion criteria. Significant improvement was seen for gait speed with a small effect size (0.295 ± 0.118; 95% CI, 0.063-0.526; P < .013) and a pooled post mean speed of 0.79 m/s, and for the 6MWT (0.247 ± 0.111; 95% CI, 0.030-0.465; P = .026) with a pooled post mean total distance walked of 271.9 m.

CONCLUSION: This meta-analysis demonstrated that providing lower limb resistance training to community-dwelling individuals who are 6 months post stroke has the capacity to improve comfortable gait speed and total distance walked.

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