ABSTRACT

PURPOSE: The purpose was to compare the effectiveness of robotic-assisted body weight supported treadmill training using the Lokomat(®) to over-ground gait training (OGT) in adults with chronic stroke.

METHODS: Participants were randomly assigned to the Lokomat(®) or OGT interventions. Both protocols included 40 sessions over 8 weeks. Primary outcome measures were the 10-meter walk test and 6-minute walk distance. Secondary measures included the Functional Independence Measure(TM) locomotion score, Fugl-Meyer Lower Extremity Motor Score (FM-LE), Barthel Index, and Stroke Impact Scale. Blinded assessors tested the participants at baseline, post-intervention, and 3-month follow-up.

RESULTS: Eleven Lokomat(®) and nine OGT participants completed the study. Within group differences in the FM-LE score and Barthel Index occurred over time from baseline to post-intervention and baseline to 3-month follow-up. No other within group differences and no between group differences were observed.

CONCLUSIONS: Although walking measures did not show significant changes between groups, LE motor function and physical functional levels improved over time within both groups. The Lokomat(®) may allow aggressive locomotor training, particularly for the lower functioning patients who wish to improve walking ability due to apparent eased therapist physical burden, when compared to OGT, although an increased risk of skin breakdown is present.