

Impact of Overground Gait and Balance Therapy with Dynamic Body-Weight Support on Inpatient Rehabilitation Outcomes in Traumatic Brain Injury

E. Angelis, E. Powell, and L. Sawaki

Department of Physical Medicine and Rehabilitation, University of Kentucky

Purpose

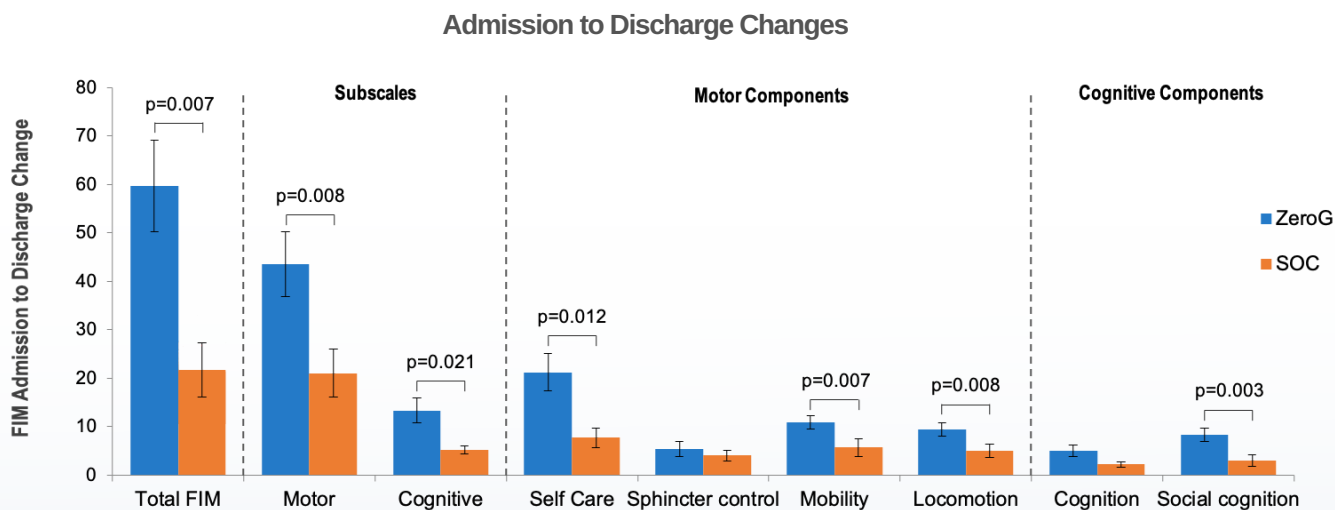
The goal of this study was to evaluate whether patients with traumatic brain injury who receive overground gait and balance therapy with dynamic body-weight support demonstrate higher functional recovery than standard-of-care therapy during acute inpatient rehabilitation.

Design

Retrospective study compared six patients with traumatic brain injury (TBI) whose acute physical therapy included regular use of the ZeroG Gait and Balance System to six patients whose physical therapy did not utilize any form of overground dynamic body-weight support devices (SOC). The primary outcome measure was change in overall FIM scores from admission to discharge, while secondary outcome measures included total motor FIM score and total cognitive FIM score, as well as subscales of motor FIM (self-care, sphincter control, mobility, locomotion) and cognitive FIM (cognition, social cognition).

Results

The average change in overall FIM scores in the group of patients who utilized ZeroG during their acute rehabilitation more than doubled the changes in the SOC group (ZeroG: 59.7, SOC: 21.1; $p = 0.007$). In addition, the group that utilized ZeroG demonstrated statistically significant gains in Motor FIM ($p = 0.008$) and Cognitive FIM ($p = 0.021$), as well as Self-Care, Mobility, Locomotion, and Social Cognition subscales when compared to SOC.



Conclusion

Patients with acute traumatic brain injury who use ZeroG during their acute inpatient therapy program achieved higher gains in overall score on the Functional Independence Measure (FIM) as well as sub-categories of the FIM when compared to standard of care (SOC).

Reference

Angelis E, Powell ES, Westgate PM, Glueck AC, Sawaki L, "Impact of motor therapy with dynamic body-weight support on Functional Independence Measures in traumatic brain injury: An exploratory study." *NeuroRehabilitation*. 2019 Dec 18;45(4):519-524.