



Impact on activities of daily living using a functional electrical stimulation device to improve dropped foot in people with multiple sclerosis, measured by the Canadian Occupational performance Measure

JE Esnouf, PN Taylor, GE Mann and CL Barrett

Abstract

Background: Dropped foot is a common problem following multiple sclerosis. Functional electrical stimulation can elicit an active muscle contraction providing dorsiflexion and eversion.

Objective: To determine if the Odstock dropped foot stimulator (ODFS), improved Activities of Daily Living for people with multiple sclerosis.

Method: 64 people with unilateral dropped foot due to secondary progressive multiple sclerosis took part in a randomized controlled trial. Research volunteers were assigned to a group using the ODFS or a group who received physiotherapy exercises for 18 weeks. Outcome measures were the Canadian Occupational Performance Measure (COPM) and a falls diary.

Results: Results of 53 research volunteers are reported. Improvements in performance and satisfaction scores were greater in the ODFS group than the exercise group; ($p < 0.05$). Use of the ODFS was also perceived as effective in reducing tripping and increasing walking distance. The median number of falls were 5 in the ODFS group and 18 in the exercise group ($p = 0.036$) over the study period.

Conclusion: The study shows that people with multiple sclerosis using the ODFS increased their COPM performance and satisfaction scores of their identified problems of Activities of Daily Living more than a matched group who received physiotherapy exercises. ODFS users also experienced fewer falls.

Keywords Activities of Daily Living, COPM, dropped foot, functional electrical stimulation (FES), falls, multiple sclerosis, patient-centred outcome measure

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