Fear of falling and participation following the use of functional electrical stimulation for the lower limb in people with multiple sclerosis

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Treatment of progressive MS Background: A fear of falling may be detrimental to people participating in activities due to a reduced confidence, however, fear of falling may also act as a protective factor. Previous research has found a correlation between history of falling, static postural control and fear of falling using the Falls Efficacy Scale International (FES-I)1. A fear of falling increases the risk of falling due to anxiety on attentional processes and “stiffening strategies”.2 FES has been found to reduce the frequency of falls.3 So if individuals have a reduced falls risk this may reduce fear of falling and increase participation. FES may also enable greater participation through faster walking speeds and being able to walk further. The aim of the study was to examine whether FES leads to a reduction in fear of falling and increase in participation. Methodology: 48 people with multiple sclerosis (41 female, 7 male, mean age 54 years, age range: 40-70 years) and drop foot. The FES-I was completed at baseline and after 20 weeks. A further questionnaire which was adapted to examine participation in the areas identified in the FES-I was also included.

Results: The results revealed a significant difference ($Z = 5.09$, $p < 0.001$) between fear of falling prior to using FES and after using FES for 20 weeks (md=8, IQR=2.75-14). The item with the largest change was “walking around the neighbourhood” followed by “visiting a friend”. A significant difference ($Z = 3.98$, $p < 0.001$) was also found between participation prior to using FES and after using FES (md=5, 1-9.25). The item which acquired the largest difference in participation was “cleaning the house”, followed by “answering the telephone before it stops ringing”.

Conclusions: The results suggest that FES for the lower limb enables people to reduce their fear of falling and increase their levels of participation.

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