

A feasibility study exploring the use of power assisted exercise for people with long term neurological conditions

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BACKGROUND

The benefits of exercise for the neurological population include improved mobility, aerobic fitness, increased strength and enhanced self- efficacy. However, barriers to long term engagement with exercise include physical access to facilities, inaccessible equipment and lack of disability awareness amongst fitness professionals.

AIMS

To investigate whether a power assisted exercise programme was acceptable for participants with long term neurological impairment and to measure the impact of the exercise programme upon mobility.

METHOD

This feasibility study was conducted at Sheffield Hallam University. Participants with long term neurological conditions were recruited to the study through a convenience sample. Participants attended eight exercise sessions during a four week period. Six different power assisted machines were used within the trial which facilitated a range of combined limb and trunk movements.

Figure 1: Shapemaster Equipment

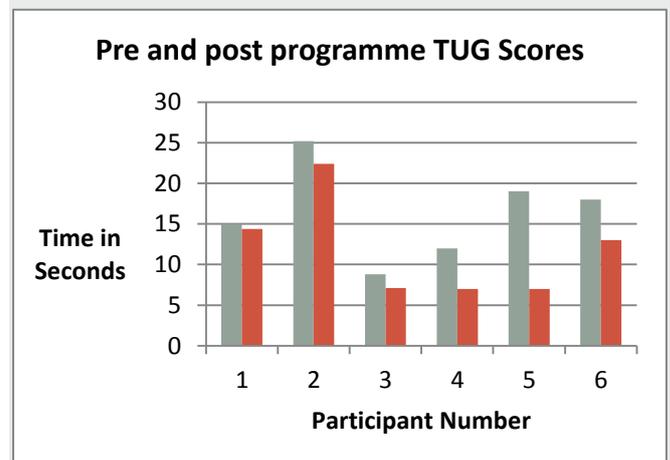


Outcome measures included Timed up and Go Test (TUG). Semi-structured interviews to explore the perceived benefits and limitations of the programme were scheduled post intervention.

RESULTS

Seven participants were recruited to the study. The diagnostic backgrounds were MS, CVA and TBI. There was an overall mean reduction in TUG score of 4.35 seconds ($P=0.028$).

Figure 2: TUG scores



Analysis of interview data indicated that the participants perceived an overall improvement in physical function during the study period. Reported benefits included decreased stiffness, increased leg strength, improved balance and symmetry. Two participants commented that respiratory and visceral function had improved during the intervention period.

DISCUSSION

The participants reported improvements in several aspects of their physical and emotional status and indicated that they would be willing to commit to a longer term power assisted exercise programme. Power assisted equipment is available at an increasing number of leisure and community centres within the UK and findings suggest it may augment rehabilitation.

CONCLUSION

This feasibility study established that power assisted exercise is an accessible and acceptable option for people with moderate to severe neurological impairments.