Effectiveness of the One Step Further exercise programme for clients with neurological disability

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Abstract
The ‘One Step Further’ exercise class provides an opportunity for clients with neurological impairment to participate in aerobic and strength training, preparing them for long-term participation in exercise in community settings. The class is accessed by over 20% of the team’s caseload and provides an increase in service capacity of over 12%. Clients, on average, display a 22% increase in walking speed, are able to participate in aerobic exercise on average 16 mins longer than at the start of the programme, and, subjectively, describe the class as being hugely beneficial in the rehabilitation and management of their individual conditions.

Keywords
neurological disability; exercise programme; rehabilitation; walking speed; accessibility; self-efficacy

Introduction
Exercise is recommended as a long-term treatment strategy for clients with neurological disability in a range of national guidance (e.g., NICE, 2013; 2003; 2007) as well as the National service framework for long term conditions (Department of Health, 2005). More specifically, across the guidelines, exercise is further defined into sub-categories such as endurance training, cardiovascular training, strength training, balance training, and task-specific training. A review of the relevant guidance breaks down the recommendations into three broad themes: accessibility of exercise programmes;
improvement of cardiovascular fitness, gait speed, and target muscle strength through exercise programmes; and social participation and self-efficacy.

This audit will aim to examine accessibility, improvements in terms of gait speed, and self-efficacy through the use of a patient experience questionnaire.

Service context
Clients in the west of a large rural county, with neurological impairment, are able to access rehabilitation via the neurological physiotherapy teams based at the physiotherapy departments of two local hospitals. Sessions are predominantly clinic based, and last approximately one hour.

Domiciliary interventions are offered to those unable to access the clinics. Clients access the service via referral from health, social, and voluntary sectors. The service receives up to 170 referrals each year across both localities and will provide over 3000 treatment sessions each year. Many clients are treated in blocks of intense treatment, whilst some are seen on a less frequent but ongoing basis, depending on the nature of their condition. We believe that a ‘one size fits all’ service model is not appropriate and we tailor our service delivery to the needs of our clients.

The opportunity to provide an extended service for those clients able to participate in exercise classes further allows us to shape our service to the needs of the client and allows us to increase the extent to which we are able to comply with relevant national guidance.

Service model
The classes are run by a specialist neurological physiotherapist, an advanced practitioner and a physiotherapy assistant. Following an induction appointment clients start the 10-week exercise class. At the induction appointment, goals are set and outcome measures recorded.

The first part of the session includes feedback from the clients of any problems encountered following their last session and changes in medical condition. The blood pressure (BP) of all clients is monitored. If persistent problems with BP are identified or their medical condition changes, patients are referred back to their GP for advice or back to their referring therapist.

The class is divided into three sections: warm-up, individual exercise programme tailored to individual goals, and warm-down. The warm-up is undertaken as a group and can be done in a seated position; exercises are adapted to the individual needs.

The exercise programme consists of endurance training using gym equipment including treadmill trainers, cross trainers, stepper, and static bike. Assistance and supervision are provided for clients to get onto equipment. Clients are encouraged over the 10 weeks to become independent in using the equipment. This part of the programme also includes strength training, using resistance bands and weights, and balance challenges. The session is rounded off with relaxation consisting of Tai chi, hold-contract, or visualisation. All clients’ activity is logged on a weekly basis. All components of the exercise class are evidenced based for neurological clients.

Accessibility
We are able to offer six classes each year, running two at a time over 10 weeks. Each class has up to six participants, allowing us to offer places to 36 clients each year. This represents approximately 21% of our yearly referrals. Bearing in mind the severity of disability of many of our clients, we are able to offer places to a large proportion of clients who are capable of participating.

Service capacity
The exercise class runs for 10 weeks, with two 1 hour classes running each week. Clients attend one of the two classes each week. Each class has approximately six clients in each group. On average, we are able to run three classes every year. This then equates to 60 clinical hours every year. Working on a one-to-one basis, we would only be able to offer 60 treatment sessions in that period. The exercise class allows us to offer 360 sessions in the same period, giving a six-fold increase in capacity for those sessions. Looking at the overall capacity for neurological physiotherapy in Copeland, the exercise class adds 300 additional sessions to our capacity, adding approximately 12% to our overall yearly capacity.

Clients
The class is open to all clients with neurological conditions. All patients must have been assessed by a member of the neurological specialist team and the class usually follows a period of one-to-one therapy. Before clients enter the group, an initial assessment is undertaken which includes identification of clients’ goals, recording of outcome measures, and general discussion of the benefits and training effect of exercise.

Outcomes
All clients have a pre-class assessment, to ensure suitability for the class, and to allow outcome measures to be recorded. For the purposes of measuring gait speed, the 10m walk test is used (Wade et al., 1987). We also measure length of time being able to take part in aerobic exercise. For the purposes of self-efficacy, a questionnaire is given to the client at the end of the class. This allows us to gain qualitative data on self-efficacy, satisfaction, and patient experience.
Following the completion of the 10-week programme, clients are invited back for a discharge interview where outcome measures are repeated, goals revisited, and discussion takes place to identify how clients can continue to exercise in the community.

Outcomes for the first 10 clients in the programme are presented here. The time in weekly participation in cardiovascular exercise pre- and post-treatment was measured. The group shows an average improvement in time in exercise of 16.6 mins which was an average increase of 350% (Figure 1) The walking speed for clients pre- and post-treatment over the 10-min walking test showed an average improvement of 22% in walking speed between pre- and post-treatment measures (Figure 2).

**Client feedback**
The following quotations from the satisfaction survey were recorded.

The weekly sessions provided me with an excellent background from which to begin exercising at home and the gym.

I feel confident that I will continue my development, I feel much more positive about my future.

On completion of the course of physiotherapy at WCH I was introduced to the gym and swimming pool facilities at Moorclose Sports centre by the neuro therapist which is very

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**Figure 1**

**Participation in cardiovascular exercise (minutes)**

![Bar chart showing participation in cardiovascular exercise (minutes)](image)

**Figure 2**

**Walking Speed (km/hr)**

![Bar chart showing walking speed (km/hr)](image)
Effectiveness of the One Step Further exercise programme

good follow from WCH
Thank you very much for the hard work which has taken me another significant step closer to full independence. The genuine enthusiasm which accompanies your treatment is invaluable and I think you have a huge impact on the lives of people such as myself, a very positive and uplifting one. One Step Further, in my case a lot, lot further. Resources should be made available for this to enable other stroke patients to benefit from this excellent programme.
I found the group very beneficial. My regret is that it does not last long enough. My walking has vastly improved.

Discussion
The results from the audit show increases in clients’ participation in exercise and an increase in walking speed at the end of the 10-week programme. Whilst it is easy to measure these beneficial effects, increased physical activity is now recognised as a management strategy to prevent secondary complications associated with a more sedentary lifestyle. Clients with longstanding neurological conditions are often forced to accept a more sedentary lifestyle due to poor mobility, poor accessibility to community-based exercise opportunities, and social isolation. An aerobic-based exercise programme can enhance glucose regulation and promote decreases in body weight, blood pressure, and levels of total blood cholesterol. With this in mind, it is recommended that clients’ blood pressures will now be recorded at the beginning of each exercise class, in order that potential blood pressure problems can be identified and reported to clients’ GPs to reduce the risks associated with uncontrolled blood pressure. It is also the intention to involve the Dietetics Department to assist clients in weight-reduction programmes in association with the exercise programme. This will add a further dimension to the programme and help promote lifestyle changes proved to be beneficial in the management of secondary complications associated with cardiovascular disease and physical inactivity.

Summary
The ‘One Step Further’ exercise class provides an opportunity for clients with neurological impairment to participate in aerobic and strength training, preparing them for long term participation in exercise in community settings. The class is accessed by over 20% of our caseload, and provides an increase in service capacity of over 12%. Clients, on average, display a 22% increase in walking speed, are able to participate in aerobic exercise on average 16 mins longer that at the start of the programme and, subjectively, describe the class as being hugely beneficial in the rehabilitation and management of their individual conditions.

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References