

Does the Canadian Occupational Performance Measure determine if the Odstock Drop Foot Stimulator improves Activities of Daily Living for people with Multiple Sclerosis?

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Abstract

The Canadian Occupational Performance Measure (COPM) was used as a supplementary measurement tool during the recent trial conducted at The Medical Physics Department for the Multiple Sclerosis Odstock Dropped Foot Stimulator Trial. (MSODFS Trial) The COPM is an individualised client centred outcome measure designed to detect self- perceived change in performance problems over time. Results of 34 subjects are reported, 16 ODFS and 18 control. At this point in the study it appears that people with Multiple Sclerosis using the Odstock Drop Foot Stimulator are more satisfied and their performance of their identified problems of Activities of Daily Living have improved more than the control group.

1 Introduction

“The client is the most important component of any intervention”[1]

1.1 Background

The health professions have been encouraged to use a client centred approach for many years. Since the 1980s health promotion emerged as an important concept, defining health promotion as “the process of enabling people to increase control over and to improve their health” [2]. The Patients’ Charter, published in 1995 by the Department of Health is an example of a document that supports the principles of client centred practice and more recently The Commission for Health (2001) [3]. Very few Functional Electrical Stimulation (FES) projects have used client centred outcome measures and it was identified at the 2nd FESnet workshop (2002) [4] that they should be encouraged.

1.2 ODFS

The Odstock Dropped Foot Stimulator (ODFS) is a single channel foot switch controlled external FES device, used for the correction of dropped foot following upper motor neurone lesions. [5] Use of the device by people with secondary progressive MS is the subject of a randomised controlled trial. [6] This paper reports on the preliminary results of the impact of ODFS on Activities of Daily Living (ADL) individually chosen by the subjects, assessed by COPM.

1.3 COPM

The Canadian Occupational Performance Measure (COPM) is an individualised client centred outcome measure designed for the use by Occupational Therapists to detect SELF-PERCEIVED change in occupational performance problems over time. It uses a semi-structured interview format and structured scoring method. The COPM is a standardised instrument and previously well validated. The COPM is internationally recognised and culturally non-specific. It can be used for all client groups, across all developmental stages [7].

2 Method

Subjects were first assessed to determine their suitability for the trial by the research physiotherapist or clinical engineer.

Inclusion Criteria:

- Diagnosis of secondary progressive MS, determined from the clinical history
- A rating of 4-7 on the Kurtzke Expanded Disability Status Scale [8] Table 1.

Table 1

Kurtzke EDSS scale score	Walking ability: able to walk...
4	500m without aid or rest
4.5	300m without aid or rest
5	200m without aid or rest
5.5	100m without aid or rest
6	100m with stick, crutch or brace
6.5	20m with stick, crutch or brace
7	5m with stick, crutch or brace

At the commencement of each subjects' involvement in the MSODFS trial and before randomisation took place, each subject was interviewed using the COPM structure. The subjects had to identify occupational performance problems, issues or concerns, which they encountered during a typical day.

Using the COPM scoring card the client was asked to rate on a scale of 1-10, the importance of each chosen activity (1 not important at all, 10 extremely important). The top five highest scored, self-perceived problems were confirmed with the client and were then individually scored for performance and satisfaction. These were also rated on a scale of 1-10. The total performance scores were added together and divided by 5 (the number of problems). This was repeated with the satisfaction scores. The COPM re-assessment was undertaken 18 weeks later at the end of the trial, the client scores each problem again for performance and satisfaction. The reassessment score was taken away from the pre trial score to give the change in score. A change of 2 or more is considered clinically significant [7] the volunteers received the ODFS or physiotherapy exercises according to the randomisation; no Occupational Therapy intervention took place during the 18 weeks regarding the problems highlighted.

3 Results

58 COPM initial interviews have been completed.

The most common problems highlighted by the subjects were walking on paving slabs and uneven ground (22), going upstairs (17), balance (12), tripping (11), tiring quickly whilst walking (11), walking on grass (9), lacking confidence to go out alone (7), steps and kerbs (7), general fatigue (6), and lower half dressing (6).

Re-assessment data is shown in Table 2.

Table 2

	<i>ODFS</i>	<i>Control</i>
<i>Re-Assessments completed</i>	16	18
<i>Male</i>	6	5
<i>Female</i>	10	13
<i>Average age</i>	53yrs	58yrs
<i>Average time since diagnosis</i>	11yrs*	19yrs*
<i>Kurtzke Score</i>		
4	1	0
5	2	2
5.5	0	1
6	7	9
6.5	6	5
7	0	1
<i>Average COPM change in performance</i>	1.4**	0.5
<i>Average COPM change in satisfaction</i>	2**	0.5
<i>Average number of activities that improved by scoring 2 or more on the COPM scale;</i>		
<i>Performance for each individual:</i>	2.1*	0.9
<i>Satisfaction for each individual:</i>	2.6*	1
<i>Average number of activities that were reported to be worse by scoring 2 or more on the COPM scale,</i>		
<i>Performance for each individual:</i>	0.44	0.33
<i>Satisfaction for each individual:</i>	0.31	0.33

*Significant difference using Mann Whitney U Test

**Significant score using Wilcoxon Test

Examples of significant improvement of ADL with a change in COPM scale of 2 or more in both performance and satisfaction in the ODFS group are walking on gravel, stumbling and tripping, walking to the toilet when urgent, stiffness when walking, collecting own darts from board during a game, tiredness and foot dragging. Negative significant change has been identified in only three activities. One person felt they could not walk on paving slabs as well while using the ODFS and two people were not so satisfied with their performance of going upstairs; this was because they had hoped the ODFS would have helped them more with stair climbing.

4 Discussion and Conclusions

Although the COPM is not an objective measure, in the present climate of client centred practice the COPM represents a very valid measure of intervention outcome. The ability of COPM to focus on relevant personal problems and concerns makes it unique in outcome measures.

Because all of the subjects entered the trial with a view to improve their walking it is not surprising that their problems focused on various aspects of walking such as tripping, balance, steps, kerbs and stairs and lacking the confidence to go out alone. Results suggest the ODFS is able to reduce tripping and improves MS sufferer's ability to walk on uneven surfaces, giving them more confidence to go out alone. The most improved change recorded in an individual problem (performance 6 and satisfaction 8 on COPM scale) is that of being able to walk to the toilet when urgent. So far results suggest ODFS has no impact on general fatigue.

At this point in the study it appears that people with MS using the Foot drop are more satisfied and their performance of their identified problems of ADL have improved more than the control group.

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