Using the Odstock Dropped Foot Stimulator: Users and Partner's Perspectives

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Abstract

The Odstock Dropped Foot Stimulator (ODFS) is a single channel neuromuscular stimulator providing peroneal stimulation to correct dropped foot. Previous studies are quantitative in nature. There is no research exploring people's use of the ODFS from their own perspective. By using a qualitative design, this study explored the experiences of people using the device and their partner's perspectives. The participants reported that the ODFS had changed their lives. The ODFS users were more socially confident with the device, as it reduced the risk of tripping and/or falling. Partners felt more confident leaving the ODFS user alone at home. Problems reported included electrode positioning and finding suitable clothes to wear with the device. Overall, the participants wished more people were ware of the device and able to get access to it.

1. Introduction

The Odstock Drop Foot Stimulator was designed at the Department of Medical Physics at Salisbury District Hospital in 1988 to correct dropped foot. This is a common problem experienced by people with an upper motor neurone lesion, where somebody is unable to lift their toes clear of the ground when walking. The ODFS is a single channel portable device providing electrical stimulation to the common peroneal nerve, to elicit ankle dorsiflexion and eversion, to correct dropped foot. A clinical service was established at the Department of Medical Physics and Biomedical Engineering in 1996, following submission of research findings to the United Kingdom South West Region Development and Evaluation Committee.

1.1. Previous Work

Previous studies published on the use of devices to correct dropped foot have focused on effects on walking ability using standardised measures, such as walking speed and effort involved as measured by the Physiological Cost Index[1]. Questionnaires designed to examine the use of these devices at home report potential benefits as well as problems associated with its use[2,3].

1.2. The Aims of this Study were to:

- To explore the personal experiences of people using the ODFS and the meaning that the device holds in their lives.
- To explore the views of the partners of those using the OSFS and the meaning that it holds in their lives.

2. Methodology

Ethical approval for the study was obtained. Professor Swain identified patients using the ODFS between 6-24 months. He obtained written consent from the General Practitioners to invite the patients to participate in the study. Twelve people contacted the researcher agreeing to take part. Separate narrative interviews were conducted with ten of the ODFS users (length of use, median = 8 months, range = 6-19 months) and five partners, who agreed to be interviewed, in their own homes. In addition, two couples chose to be interviewed together. People were asked to tell their story about their life before and after ODFS use. Data on demographics, use of the ODFS, social and work activity (using the Frenchay Activities Index[4]) was collected to aid comparison with previous quantitative studies. Interviews were tape-recorded and transcribed verbatim. Each transcript was read and re-read to identify issues important to each participant. Similarities and differences were compared across all the interviews. A small number of transcripts were read by a second researcher and the interpretations compared.

3. Results

All the participants reported that the ODFS had changed their lives. They felt more socially confident because the device reduced the risk of tripping/falling. They felt that they could walk faster and for longer distance. Participants described that

Characteristics of the participant group		Male (n=8)	Female (n=4)	Total (n=12)
Age in years	Mean	57.1	50	54.7
	(SD)*	(12.4)	(4.6)	(10.7)
	Median	60.5	49	53.5
	Range	41-73	46-56	41-73
Household Composition	Partner	n=6	n=3	n=9
	Alone	n=2	n=2	n=3
Diagnosis	Stroke	n=4	n=0	n=4
	MS	n=3	n=3	n=6
	Other	n=1	n=1	n=2

Table 1 *outlines demographic data for the ODFS users. *SD = Standard Deviation*

Frenchay Activities Index	Male (n=8)	Female (n=4)	Total (n=12)
Possible Score 0-45			
Mean (SD)	27.5 (8.2)	31.8 (6.1)	28.9 (7.6)
Median	27	33.5	31
Range	13-40	23-37	13-40

Table *2 outlines the scores obtained on the Frenchay Activities Index for the participants using the ODFS. This indicated that overall the ODFS users were managing at a fairly high level of independence*[5].

their walking was more normal and required less mental effort, as they did not have to concentrate on their walking. Their abilities in personal activities of daily living, and opportunities for work and leisure also increased. Partners were more confident in leaving the ODFS user on their own. Initial problems such as electrode positioning were experienced, but were resolved by all but two of the participants. Finding suitable clothing remained a problem particularly for the women who reported difficulties wearing a skirt or dress with the device. Even though the researcher was not actively involved in the treatment of the patients, the researcher was a member of the Department of Medical Physics and Biomedical Engineering. Ideally the study should have been conducted through an independent organisation.

4. Conclusions

This limited study has shown that the ODFS had far reaching effects on participant's lives. Throughout the NHS although it is recognised by the Royal College of Physicians of England as a suitable treatment for people following stroke. Some areas of the United Kingdom are able to refer people with a wide range of neurological conditions. Some just people with stroke, whereas others are unable to refer in significant numbers. The participants who took part in this study were generally pleased with the ODFS as well as the service received, and all expressed a wish that it was more widely available.

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