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Relationship between use of ankle-foot orthoses and quality of life and psychological well being: a research plan

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Introduction

An ankle-foot orthosis (AFO) is an externally applied device that encompasses the joints of the ankle and foot, used to modify the structural and functional characteristics of the neuromuscular and skeletal systems (ISO, 1989, a & b). AFOs are prescribed for people who have a loss of function affecting their mobility, experienced in wide range of conditions such as stroke, poliomyelitis, cerebral palsy, spina bifida and osteoarthritis.

Most of the research focuses on positive effects of AFOs on gait, such as increased walking speed and step length (Lehmann, Condon & De Lateur, 1987), and improved clearance of the foot as the leg swings through (Fatone and Hansen 2007). However there is a dearth of research on the extent to which patients actually use their AFOs, why they might reject AFOs, and the effect of AFOs on Quality of Life (QoL) and psychological well-being.

Psychological models, such as the Theory of Planned Behaviour (Ajzen 1991), provide an opportunity to understand cognitive processes that may determine use of AFOs. Cognitive processes, particularly perceptions of control are of particular interest because they offers opportunities to develop interventions that can increase uptake and use of AFOs.

Aims of PhD

- To investigate if a relationship exists between AFO use and QoL and psychological well being
- To investigate if the Theory of Planned Behaviour (TPB, Ajzen, 1991) is a useful model in understanding adherence to a physical rehabilitation programme, including AFO use
- To identify cognitive variables that can predict use of AFOs
- To develop and test a psychological intervention designed to increase use of AFOs



Figure 1: A posterior leaf spring AFO



Figure 2: An articulated AFO



Figure 3: A rigid AFO with carbon fibre inserts



Figure 4: Walking with a rigid AFO

Outline of Study 1:

Research Questions:

- To what extent are AFOs used by people in Scotland, with a range of conditions ?
- Is there a relationship between AFO use and QoL?
- Is there a relationship between AFO use and psychological well-being?

Participants N=200 adults, over age of 18 yrs, who have been prescribed AFOs in the last 3 years, living in Scotland.

Sample A random sample of AFO users throughout Scotland. Participants will be identified by records held by orthotic departments and contractors working in Scotland.

Study 1 continued....

Design and Procedure

A Cross sectional survey will be sent by post to the selected sample. in order to measure parameters of AFO use, and various measures of quality of life and psychological well being. Hager and Orbell (2003) in their meta-analytic review used content analysis to identify six categories of health outcomes by which people perceive their illness. Five of these 6 health outcomes have therefore been selected for the proposed questionnaire seen in Table 1.

Health Outcome Category	Measure Used	Description of Measure:	Source
Disease State	Not possible to measure in questionnaire	Objective measure of illness status	
Physical Functioning	MOS SF36	Physical Functioning	Stewart, Hays and Ware (1988) The MOS short form health survey: reliability and validity in a patient population Medical Care 26, 724-735
Psychological Distress	GHQ28	General Health distress	Goldberg and Hillier (1979) A scaled version of the General Health Questionnaire Psychological Medicine 1, 139-145
	HADS	Anxiety and Depression	Zigmond and Snaith (1983) The Hospital Anxiety and Depression Scale Acta Psychiatrica Scandinavica 67, 361-370
	PANAS- X	Negative Affect	Watson and Clark (1994) The PANAS-X Manual for the Positive and negative affect schedule- expanded form Retrieved November 19 th 2009 from http://www.psychology.uiowa.edu/faculty/Clark/PANAS-X.pdf
	GES- D	Depression Scale	Radloff, L.S. (1977) The CES-D scale: a self report depression scale for research in the general population Applied Psychological Measurement 1, 385-401
Psychological Well being	MOS SF36	Mental Health Index	Stewart, Hays and Ware (1988)
	PANAS- X	Positive Affect	Watson and Clark (1994)
	WHO QOL BREF	Satisfaction	WHOQoL Group (1998) Development of the World Health Organisation WHOQOL-BREF quality of life assessment Psychological Medicine 67, 361-370
Role Functioning	MOS SF36		Stewart, Hays and Ware (1988)
Vitality	MOS SF36		Stewart, Hays and Ware (1988)

Table 1: Key measures used for Study 1

Outline of other studies

Study 2: A meta-analysis of Theory of Planned Behaviour (Ajzen 1991) studies that predict adherence to health interventions. This will help to gauge whether the model might be useful in identifying potentially changeable predictors of AFO use that could be targeted in interventions.

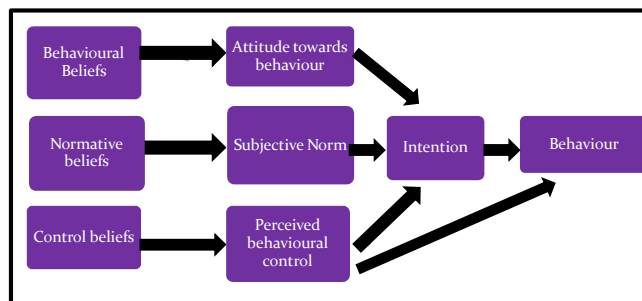


Figure 5: Theory of Planned behaviour (Ajzen 1991)

Study 3: On the assumption that the TPB is found to be a useful framework for predicting adherence to health regimes (in the previous proposed study), Study 3 will directly apply the TPB to the specific behavior of AFO use in order to identify cognitions that are likely to be useful targets for subsequent interventions.

Study 4: Development and testing of a psychological intervention to effect control cognitions that can impact on AFO use

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