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Published paper

Palmer, P., Thursfield, C., Judge, S. (2005) *An evaluation of the Psychosocial Impact of Assistive Devices Scale* In; Pruski, A., Knops, H. (Eds.) *Assistive Technology: from virtuality to reality*, Nieuwe Hemweg, IOS Press, ISBN: 1-58603-543-6, pp. 740-744

An evaluation of the Psychosocial Impact of Assistive Devices Scale

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Abstract. The West Midlands Rehabilitation Centre (WMRC) is responsible for the National Health Service provision and maintenance of Environmental Control Equipment to patients across the West Midlands Region, England. It is important to measure outcome of provision using a paradigm that has meaning for those patients. The Psychosocial Impact of Assistive Devices Scale is a 26-item, self-rating questionnaire designed to measure user perceptions of how assistive devices affect quality of life. This outcome measure is being evaluated in the West Midlands

Key words.

Blah blah

Background to the research project

The Access to Communication and Technology (ACT) Service is one of the WMRC services that is responsible for the provision of Electronic Assistive Technology (EAT). ACT is currently evaluating the Psychosocial Impact of Assistive Devices Scale (PIADS). The researchers intend to ascertain whether or not PIADS is an appropriate tool for measuring outcome for Environmental Control (EC) system users known to ACT. If so, this study will be extended to explore the use of PIADS as a predictive tool for EC assessment outcome.

The purpose of this presentation is as follows:

- To present PIADS
- To discuss its potential as a relevant outcome measure in Environmental Control
- To present details of research into its use by the West Midlands Rehabilitation Centre (WMRC) to date including results from initial implementation

Psychosocial Impact of Assistive Devices Scale (PIADS)

Day & Jutai (2002) have developed PIADS, a 26-item, self-rating questionnaire designed to measure user perceptions of how assistive devices affect quality of life. It is intended to be a generic measure, applicable to many forms of Assistive Technology. PIADS describes user perceptions as properties grouped around three constructs:

- Adaptability ie the enabling and liberating effects of a device
- Competence ie the impact of a device on functional independence, performance and productivity

- Self-esteem ie the extent to which a device has affected self-confidence, self-esteem and emotional well being

Each property is measured along a dimension that ranges from -3 (maximum negative impact) through zero (no perceived impact) to +3 (maximum positive impact).

Research questions

The research study poses three research questions:

1. Is PIADS an appropriate tool for use at ACT?
2. Is PIADS a valid tool for measuring outcome of EC intervention at ACT?
3. Can PIADS be used as a predictive tool?

1. Is PIADS an appropriate tool for use at ACT?

The researchers are exploring the benefits and drawbacks of using PIADS, from the perspectives of users, administrators and clinicians. Currently, the questions made explicit in the tool are not routinely asked of EC users. There is a need to ensure that there are valuable benefits to using PIADS prior to a change in ACT practice to incorporate routine use of PIADS.

2. Is PIADS a valid tool for measuring outcome of EC intervention at ACT?

The researchers are exploring the validity of PIADS, focusing on particular groups of ACT service users and looking for a correlation between PIADS scores and an overall level of satisfaction with EAT provision. The existing evidence base suggests that a strong correlation is likely (Jutai et al 2000, Palmer 2001). This has not been tested with the ACT target population. Prior to routine implementation of PIADS, all involved need to have confidence in the validity of the tool and specifically, that outcome determined using PIADS reflects overall the perceived outcome from the perspective of the EC users.

The researchers wish to assist the writers of the tool (Jutai & Day 2002), who have requested that participating centres keep them informed of their studies and add to the growing body of evidence exploring the validity of PIADS.

3. Can PIADS be used as a predictive tool?

The researchers wish to explore whether there is any benefit in using PIADS as a predictor of outcome. If PIADS is a valid and reliable tool and can be used prospectively then it might be a useful predictive tool. If so, this raises the possibility that ACT could make recommendations about provision based on the prospective scores and/or use these scores to assist with the prioritisation process for funding assistive technology. This aspect of the research is presented as a future, second research phase. A satisfactory answer to the first two research questions should precede this.

Implementation of the first phase of PIADS

The researchers applied to the South Birmingham Research Ethics Committee [ref website]. The committee granted three years approval in October 2003. Study phase 1 was started with immediate effect.

Study design for phase one

Inclusion criteria

The target population is adults with EC installations who:

- Have cognitive and language abilities within normal limits.
- Are able to make an informed decision as to whether they wish to participate.
- Are able to understand the rationale behind the study and to independently consider and answer all questions
- Have access to a telephone, through the physical assistance of a third party if necessary.

Whether or not participants meet these criteria will be judged on the basis of the information provided by the referrer. This will remove the potential for researcher bias.

If at a later date, it appears that participants do not appear to fulfil these inclusion criteria, their data will be removed from the study and reasons for doing so will be explained in the analysis of results.

Timescales

Potential participants are informed of the study at their EC assessment appointment. They are sent a patient information leaflet 2 months after their EC system has been installed, inviting them to participate in the study and, if they agree, to complete and return one consent form, and keep a copy for reference.

Their GP is notified in writing if they agree to participate.

Participants are asked to contribute to the study by helping with the following tasks:

1. Complete a follow up PIADS interview 3 months from the point of installation of their system. An administrator from ACT carries this out over the telephone
2. Complete the 'Follow Up form' postal questionnaire

The investigators recognise that there is a potential weakness in the study design in that the PIADS interview will take place over the telephone rather than face-to-face. This decision was taken due to resource constraints and this must be taken into account in analysis of findings.

The follow-up form is not a validated assessment tool. The main purpose of the form is to gain qualitative data on the participant's experience of the PIADS interview. Respondents are also asked to comment on the *global* impact of the environmental control system within the constructs of functionality, confidence, and happiness. This qualitative data is compared with the total scores from each of the *individual* concepts measured by the three PIADS subscales (competence, adaptability and self-esteem). By comparing the data on the follow-up form with the results of the PIADS subscales and incorporating the views of the administrators and assessors we will be seeking to answer the first two research questions.

Date analysis in phase one

When data analysis commences, the total PIADS scores will be noted as well as totals for each of the three subscales. There will be an analysis of the free text in the Follow Up form, which relates to positive and negative feelings about the experience of completing PIADS. Responses will be grouped according to type using a qualitative approach and discussed within ACT and with the team in Toronto.

At ACT, there is a well-established peer review process in place for the clinicians who carry out Environmental Control assessment. This process is being extended as a forum for discussing the administrators' experiences of using PIADS. The perceptions of administrators and clinicians will be included when reporting the study. We are also keeping a record of time spent to complete PIADS interviews as part of our exploration of the use of this tool.

In examining the validity of PIADS with our target population, we will be looking for a correlation between the results within the three PIADS sub-scales (Competence, Adaptability and Self Esteem) and the responses to the more intuitive questions asked on the Follow Up form.

1. Has your Environmental Control system affected what you can do?
2. Has your Environmental Control system affected your confidence?
3. Has your Environmental Control system affected your emotions?

We would expect to see a positive correlation between PIADS results and the answers to these questions. We will be comparing the Competence sub-scale results with responses to question 1, the Adaptability sub-scale results with responses to question 2 and the Self-esteem sub-scale results with responses to question 3.

If it emerges that PIADS is an appropriate and valid tool for use as an outcome measure at ACT with our target population, then we will move into phase two of the study. Phase two is outside the scope of this presentation.

Results so far

The study commenced in October 2003

The first consent form was sent out in mm/yy and the first telephone interview was conducted in mm/yy.

Since October 2003 the researchers have identified xxx who meet the criteria for the study. From this study group there have been xx installations. Xx invitations to participate have been sent and xx responses have been received. Xx telephone interviews have been conducted and xx post-interview questionnaires have been returned.

Discussion

The research project has made slow progress because of the poor response rate and no analysis of results has been attempted to date (January 2005). The researchers are currently exploring various possibilities for improving the response rate whilst respecting ethical considerations. At the time of the AAATE 2005 conference in September 2005 it will be possible to present some initial results.

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Other?