

TASK: WP-2 WHEELCHAIR PRESCRIPTION SOFTWARE PROJECT (WPSP)

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Rationale

Current wheelchair users and prescribers (OT, PT and RTS students are the target population) have a large and increasing selection of wheelchairs to choose from, each having a variety of accessories that customize the wheelchair to individual need. Thus, the goal is to provide users the opportunity to participate in the selection of the wheelchair that is closest to being ideal for their needs.

Information overload caused by the significant number of companies making wheelchairs, which come in a variety of models with many configurable options for each, leads to a large quantity of information that has to be searched in order to make appropriate selections. Information continually changes as new models, options and companies enter the market. Added to this is the fact that the information between different manufacturers may be difficult to compare because the wheelchair standards testing information is not readily available.

Incorrect prescription or purchase of wheelchairs, particularly among first time inexperienced wheelchair users, is common among individuals with spinal cord injury and other diagnoses where needs change over time. There is a lack of training opportunities that teach and inform prescribers on the strategies of wheelchair prescription, taking account of physical needs, functional environment, funding and other issues, and relating these to the priorities of a particular individual.

This collaborative project, to develop wheelchair prescription software, has been funded mainly through the Department of Veterans Affairs, Rehabilitation Research and Development Service (VA RR&D) as a component of the Computer Aided Wheelchair Prescription System (CAWPS).

Goals

1. Develop a computer program that provides an effective, easy to use wheelchair prescription teaching aid.
2. Provide easy access to expert prescription methodologies.
3. Commercialize the software in order to provide a mechanism for widespread availability at reasonable cost.

Methods Summary

An interactive computer based wheelchair prescription system, using expert system methodologies, has been developed. As part of this development process, internal evaluation and interactive evaluations were carried out using known case studies.

Outcomes Summary

- 1) The software structure was stabilized January 1997. Educational features include:
 - Quicktime videos to show different wheelchair types and activities to educate and raise expectations about what may be reasonable achievements in education, work, leisure and ADL activities.
 - Graphics to explain dimensional information.
 - Incorporation of a publication on wheelchair selection as resource material (text and graphics). (Axelson et al, 1994)
 - Each question has an accompanying explanation which can be accessed by a simple mouse click ("Why Button").
 - Each feature of the final generic wheelchair can be examined (simply by a 'click') to determine which questions (and accompanying answers) were factors in the selection of that feature.

2) A demonstration version is available at: <ftp.pitt.edu/users/s/g/sgarand>.

3) Logic developed has been largely completed and is currently in the testing and editing phase.

4) Formal testing was not carried out in order to secure funds and protect confidentiality pending completion of negotiations with a potential commercial partner (see below). The input from informal testing has been very positive for this educational version.

5) The project has been successful in attracting commercial interest. An agreement, through the VA RR&D Technology Transfer Section with a major health care company who expressed interest in commercializing CAWPS, failed. The company had intended to further develop CAWPS and make it widely available through Intranet and Internet links as well as in a stand alone format. Task WP-2, WPSP was planned to be released as a low cost (possibly free) version of the main CAWPS program as part of the commercialization plans. In December 1998, negotiations ceased.

6) Plans are now under way to obtain funding for further testing.

Individuals interested in obtaining a demonstration version of CAWS should contact Nigel Shapcott preferably by e-mail at Shapcott@pitt.edu or through the RERC at 412-647-1273.

Recommended Future Development

1. Investigate the use of CAWPS as an educational tool.
2. Investigate the use of CAWPS as an clinical tool.

Publications

Shapcott, N and Garand, S. Computer-Aided Wheelchair Prescription System, paper submitted to Canadian Seating Symposium, Toronto, Canada, Sept 1996.

Shapcott, N and Albright, S. Computer-Aided Wheelchair Prescription System, paper submitted to Pittsburgh International Seating Symposium, Pittsburgh, PA February 1997.

Reference

Axelson P, Minkel J, Chesney D. Guide to wheelchair selection: How to use the ANSI/RESNA wheelchair standards to buy a wheelchair, PVA 1994