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Barnsley Assistive Technology Team

Users' Perceptions of Environmental Control Systems

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Barnsley Assistive Technology Team

- Specialist service covering three areas of Yorkshire in the UK
- Expertise in Assistive Technology
- Work with speech therapists, occupational therapists, physiotherapists, teachers etc. to assess for Assistive Technology
- Involved in research which is related to clinical work

Background to this work

- SPECS (Speech Driven Environmental Controls System) Project
  - Aim to design a new speech-driven environmental control system for use by people who are elderly or have a disability
  - In addition for the device to be sensitive to disordered speech
- Project funded by the Health Technology Device Programme of the Department for Health

SPECS Project

- Environmental controls (EC)
  - Used by people with disabilities to control their immediate environment e.g. television, telephone, opening door
  - Common access methods
    - Switch
    - Direct access
  - Some speech-driven systems available but speech not widely adopted for EC access

SPECS Project

- Develop new device from specification, through prototyping to testing
- Stage 1 of SPECS project to develop specification based on user feedback about existing speech driven environmental control systems
- 12 indepth qualitative interviews with users performed
- 2 indepth qualitative interviews with professionals performed
- 1 professionals focus group carried out

SPECS and General EC

- Data analysed using a framework analysis approach [1]
- Themes identified and data coded according to requirements of overall SPECS project [2]
- Identified that the rich data also gave insight into users' perceptions of environmental controls in general

[1] Ritchie J, Lewis J. Qualitative Research Practice: A guide for Social Science Students and Researchers. SAGE Publications Ltd. 2006

[2] Judge S, Robertson Z, Hawley M, Enderby P. Speechdriven environmental control systems – a qualitative analysis of users' perceptions. Disability and Rehabilitation: Assistive Technology. 2009;4(3):151-157

General EC

- General EC themes were then identified and data re-coded to these themes by two researchers
- Consolidation of data by researchers
- Analysis of themes

Results

- Themes identified correlate with a typical patient journey
  - History of EC use
  - Assessment
  - Risk Assessment
  - EC Use
  - Provision of EC
  - Perception of current EC systems

History of EC Use

- Experienced and successful users
- All user participants had speech driven systems however all had at least seen alternative systems
- Over half participants use another system in addition to speech control
- Professional participants had experience of prescribing a range of EC systems

Assessment – User Participants

- Patient participants as expert-prescriber

  "A [Professional] kind of assesses me to see what I needed. He had his little briefcase and he thought this was best for me"

- Not all EC needs met

  "No, he came with [a Professional] who gave me the system and the brought this system along and we spent a long time – it seemed like half a day I should think setting it up and putting it up but no, I didn't have a choice, this is what they brought"

Assessment – Professional Participants

- Benefits of initially providing a basic system which could be built on as user gains experience and the benefits of trial and demonstration

  "Sometimes the proof of the pudding is in the trying and the only way to prove a point is to show what you feel the most appropriate option in an assessment, in a trial or whatever"

- Routes to provision

Risk Assessment

- Professional participants highlighted importance of risk assessment

  "You've got to assess them, 'are they competent to take that decision on the risk?' and then they've got to insist, event if you just list the possible side effects of what could go wrong. I mean most people are well aware of those and if they insist you say 'sign here please'."

- User participants also reported their 'risk assessments' when using EC

EC Use

- Increase in independence
- Reliability

  "Life without it would be impossible, just about, but life with it sometimes can be hard."
- Switch scanning

  "I think for about 3 or 4 months but I got very frustrated with it and I felt like a budgie banging my head on a bell. Didn't suit me at all like."

EC Use

- Control and privacy
- Affect on carers

  "it's made my life a lot easier and simpler, you know, because they'd be nothing worse than every time you wanted to do a channel change or something having to call a carer."
- Professional participants also identified quality of life aspects but highlighted safety and security as the priority

Provision of EC

- Positive and negative comments
  - Assessors
  - EC suppliers
- User participant awareness of cost of systems

"It would be nice to be able to control the curtains, but I guess it was decided that for this system that that's too expensive to do and that I don't really need it that badly."

Perceptions of current EC systems

- Functionally sufficient
- Enhance independence and reduce carer load

BUT

- EC systems could be more advanced

  "obviously they're getting more advanced, but they still use the same dull equipment and some people have got to use that because obviously they are so severely disabled that they've got to use that sort of equipment."

Limitations

- Secondary analysis of data collected with a slightly different focus therefore themes not necessarily saturated - however we were able to develop robust framework
- Bias

Key Outcomes

- Evidence for EC increasing independence and reducing carer load
- Potential for these results to influence service development
- Demonstration of benefits of using a qualitative approach in this context

Future Work

- Study employing this methodology but focussed solely on EC in general

Questions

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