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Collaborative Power mobility Innovative Learning OpporTunity

Clinical Utility and Therapists' Perceptions of Shared Control for Powered Mobility Assessment and Training

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Assessing and Training for Powered Mobility is Challenging

- Assessment and training are risky
- Cognitive impairment may challenge learning
- Limited technology and tools available

Shared control is…

- Secondary wheelchair control
  - Similar to attendant control, with more options
  - Simultaneous override
  - No mode change required
- Remote (wireless) joystick

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Objective

- Therapists' perception of
  - Shared control tele-operation device
  - Clinical utility of shared control for
    - PWC Assessment
    - PWC Training

Methods

- Semi-structured interviews
- 15 clinicians
  - 14 OT
  - 3 male
  - 2-20+ years experience
- Idea generation and feedback on prototype
- Feedback on shared control utility and interface design

Results

- Positive response for concept of shared control
- Refinements to interface design for clinical use
- 5 Themes

1: Focus on skills, less on emotion

"…if you can help it to be more successful… it will at least bring their anxiety down, and that helps with learning because **if you're anxious and you're not having success, it's also difficult to learn**…"

~OT, Community

2: Opportunities not otherwise afforded

"It may **give me an opportunity to do some training with the person** that I might just choose [currently] to stop at that point…"

~OT, Community

3: Backing up my assessment

"It might be useful to see how many times I have to assume control. Then that could be useful especially in **justifying** to facilities **that this person …can learn, can use their power wheelchair.**"

~OT, Community and Residential

4: Focus on the client, not on the device

"I think I want it to be as intuitive as possible. I don't want to be totally concentrating on this thing, because **I want to concentrate on what's going on with the client.**"

~OT, Inpatient SCI

5: You can't learn to play from a player piano

"I think for a learning experience the person in the chair needs to realize that there's been a correction, and why there's been that correction… **if the chair is taking over that, are they going to be aware**?"

~OT, Long Term Care

Discussion

- Themes align well with Smart's multidimensional model of clinical utility (8)
  - Focus on appropriateness, practicability, and acceptability
  - No specific theme focused on accessibility
- Potential for positive psychological impact on learning
  - Reduction in anxiety
  - Improvement in confidence

Conclusions

- Shared control is a promising development for clinical use
- Potential to use across diagnostic and functional groups
- Potential to be further explored through empirical research

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