Using the technology acceptance model (TAM2) to understand clinician barriers and facilitators in using emerging technologies for rehabilitation of the upper limb: A mixed methods study.

Background

Estimates of upper limb impairment following a stroke are as high as 80% with only half of these survivors regaining useful arm function. Clinical interventions that have the strongest evidence share a common emphasis on task-specific training applied with a higher intensity than usual care. However, there are barriers associated with the provision of such interventions. Robotics and gaming technology may provide solutions to these barriers, but clinical adoption of such devices remains low.
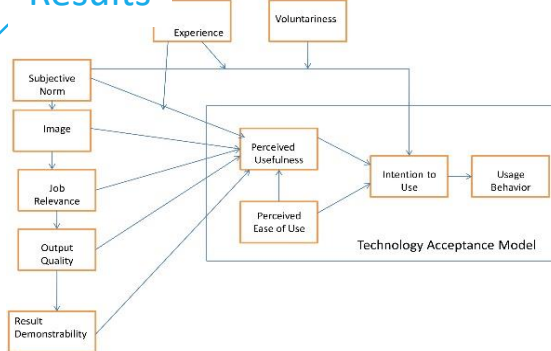
Objectives

To explore rehabilitation clinicians' acceptance and use of emerging technologies

Method

Mixed methods data collection:
1. Survey using TAM2 with OT, PT & EP across 3 organisations
2. Focus group discussions
3. Observations of clinicians using a robotic device with patients

Results

Technology Acceptance Model

Survey data demographics			
AHP group	54% physio	23% OT	23% other e.g. EP
Setting	69% outpatient community	23% inpatient rehab.	8% outpatient centre
Grade	62% Gd.2	23% Gd.3	15% Gd.1
Quals.	27% post-grad e.g. 12% Master, 7% grad. cert.		

Analysis of the TAM2 survey data indicated that clinicians generally had a positive attitude towards the use of technological devices in clinical rehabilitation. Most (91%) agreed that such devices would be useful and all would implement in practice if they had access. However, few (25%) clinicians felt that technological devices were easy to use. The focus group data further confirmed these findings. Rehabilitation clinicians have low perceived behavioural control regarding their own skills and knowledge in using emerging technology devices in clinical practice.

Conclusion

The results from this study suggest that rehabilitation professionals currently lack the confidence to implement technological devices in practice, particularly robotics. This has implications for both developers of devices and organisations considering introducing emerging technologies into clinical practice.

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