Integrating technology into a new acquired brain injury rehabilitation service

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Introduction

Integrating technology in rehabilitation after brain injury is common. This involves: (i) utilizing technology for service delivery, including telehealth, tablets and smartphones; and (ii) utilizing technology-enabled therapy, including web-based interventions and social media platforms.

The Acquired Brain Injury Transitional Rehabilitation Service (ABI TRS) commenced in Brisbane in 2017 and provides interdisciplinary community rehabilitation for clients with a brain injury.

The ABI TRS aimed to implement evidence-based technology to enhance rehabilitation for clients with ABI into a new community transitional rehabilitation service.

Method

A change management approach was used to establish the use of technology into the rehabilitation service. This included:

- Identified area of need; Literature review of current evidence-based practice
- Working group formed, consultation with Inter-disciplinary team
- Exploration of affordability and type of technology suitable for the service
- Benchmarking with other community rehabilitation teams

Clinician skill, knowledge and experience of use of technology was also explored

Results

Identified area of need: Recent systematic reviews[1,2] identified several benefits of technology-based rehabilitation including; 1. Intensity: clinicians can provide patients with a greater intensity of sessions; 2. Client-centred treatment: Technology allows the clinician to tailor the tasks to clients impairments and goals for a more personalized rehabilitation program[3]; 3. Improved rehabilitation outcomes: studies have shown various degrees of improvement and greater independence for clients with cognitive[1] and communication[2,3] impairments .

Clinician skill, knowledge & experience: Team survey revealed that clinicians had skill and knowledge of technology usage, however lacked experience of using technology in a community rehabilitation setting. To address this barrier, clinical processes, training and education were provided and technology items have been successfully embedded within the community rehabilitation program.

TRS team consultation: Through ABI TRS service review, along with the results of the literature review, a need for internet usage in home and smart devices for therapeutic use was identified. Three iPads (2 with data) were purchased. Individual disciplines were consulted with regards to evidence based apps for: compensatory strategies (e.g., diary, communication aids); skill building (e.g., language therapy); education (e.g., brain information); leisure (e.g., games, music); support building (e.g., circles of support); and client safety /independence (e.g., GPS tracking; supported emergency calls). Additional dongles were purchased in order to access the internet when using laptops. Review of dongle use is underway.

Benchmarking: Community rehabilitation and inpatient services were consulted on their technology usage and resources. Community rehabilitation services reported using service laptops (each staff member) and otherwise the clients own devices, and inpatient services reported using service laptops, internet, and iPads.

In the last 12 months over 60% of ABI TRS clients have received technology based rehabilitation using service devices

Conclusion

- Technology was successfully implemented into a new transitional rehabilitation service.
- Technology has enabled clinicians enhance client's rehabilitation through using alternative modes of treatment and providing a tailored treatment program.
- Future research is needed in to how technology is being used by the interdisciplinary team with clients (e.g., specific apps and therapy treatment targets), as well as how clients use technology to enhance their recovery and wellbeing after injury. There is also a need to review both clinician and client confidence and experience with technology use.

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