Using Technology in Rehabilitation after TBI for Cognitive-Communication Skills

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BACKGROUND/AIMS

There is little research into social media use by people after TBI and even less relating to those who have communication difficulties after their Injury. In this review, we looked at three major categories of technology used in rehabilitation with people with TBI - assistive technology (AT), augmentative and alternative communication (AAC), and information and communications technology (ICT).

TYPES OF TECHNOLOGY REVIEWED

- *Assistive Technology* (AT) - any item that is used to improve function for people with disabilities.
- *Augmentative and alternative communication* tools (AAC) - forms of AT specifically used for improving communication.
- *Information and communication technologies* (ICT) - technologies that access, store, transmit, or manipulate information, such as the internet.

METHOD

A systematic, integrative literature review of communication technology in TBI rehabilitation and cognitive-communication was conducted.

RESULTS

- There were 95 studies in the review, involving three major types of communication technologies: AT ($n = 6$); AAC ($n = 27$); ICT ($n = 69$)
- Multiple factors relating to use of technology
- We developed an evidence-based theoretical framework for incorporating technology into clinical practice, but looking across the papers for relevant result.
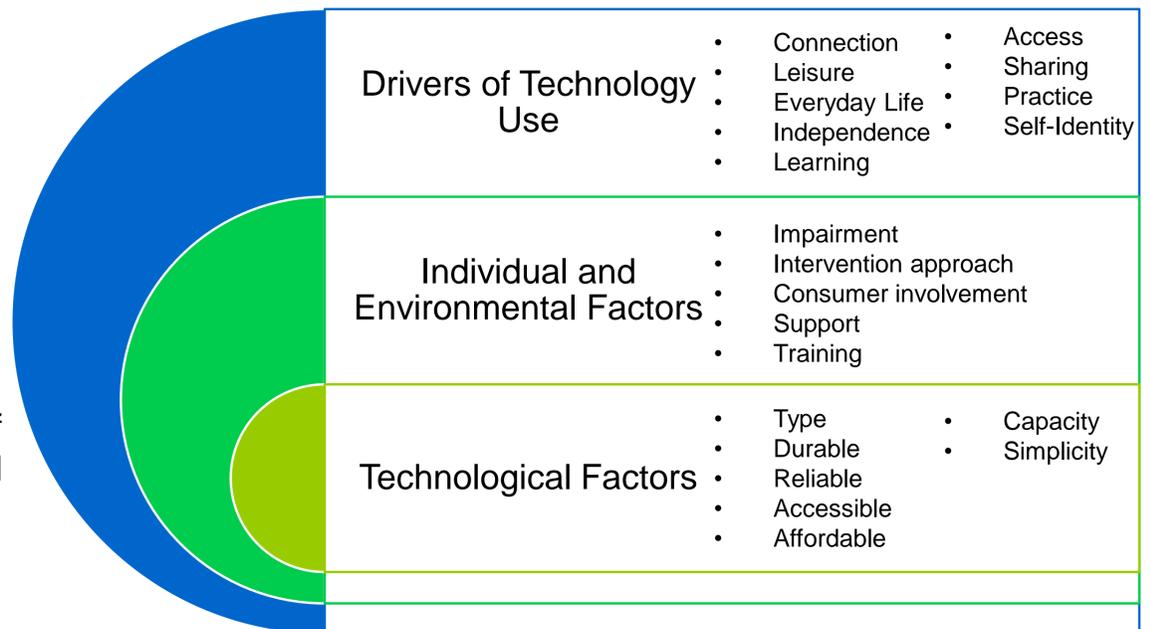
TYPES OF TECHNOLOGY IN THE STUDIES REVIEWED

- Telerehab — 35
- AAC — 27
- Internet — 9
- Social media — 9
- Computer — 8
- Email & SMS — 7
- AT — 6
- Apps — 1
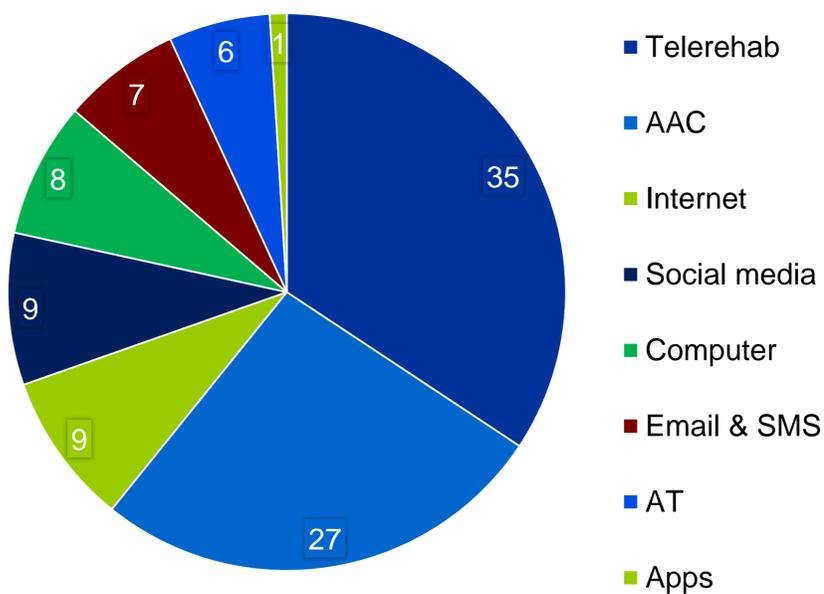
CATEGORIES IN THE FINDINGS

There are three overarching categories influencing the use of Technology in TBI rehabilitation for cognitive-communication: (a) drivers of technology use; (b) individual and environmental factors; and (c) technological factors.
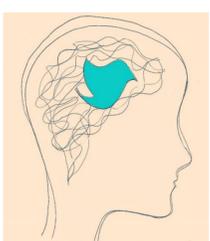
NEW THEORETICAL MODEL for USING TECH IN REHABILITATION FOR PEOPLE WITH TBI

Drivers of Technology Use
- Connection
- Leisure
- Everyday Life
- Independence
- Learning
- Access
- Sharing
- Practice
- Self-Identity

Individual and Environmental Factors
- Impairment
- Intervention approach
- Consumer involvement
- Support
- Training

Technological Factors
- Type
- Durable
- Reliable
- Accessible
- Affordable
- Capacity
- Simplicity

IMPLICATIONS FOR REHABILITATION

Given the diversity of the individuals with TBI and the vast range of technologies now available, clinicians need to consider their role in overcoming the challenges involved in introducing technology into rehabilitation. Clinicians also need to consider:

- the effect of the factors outlined in the model on adoption and use in rehabilitation;
- our awareness of the diversity and fluidity of the technologies; available;
- the need to feature-match each individual with the right technology;
- the supports that are needed to help the person use technology successfully; and
- how to address such diversity in a busy, demanding caseload.

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