

Preliminary scoping of technology use in outpatient brain injury rehabilitation services



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Background and Objectives

Technology is increasingly being used in the rehabilitation of people with acquired brain injury (ABI) to deliver interventions, support individuals' adjustment to their functional impairments and promote independence in the home and community.¹ However, while research indicates that people with ABI are keen to learn about technology options in rehabilitation,^{1,2} its uptake during rehabilitation and sustained use beyond programs can be poor.³

This study aims to better understand the current practices and role of technology in an outpatient brain injury rehabilitation setting and perceived barriers and enablers to technology use.

Methods

This study employs a prospective longitudinal design and mixed methods approach. Data are collected via patient and clinician completed surveys and interviews at a hospital-based multi-disciplinary outpatient brain injury rehabilitation service in Brisbane, Australia. Data relating to the type, purpose, frequency and importance of technology use, as well as barriers and enablers are collected across four time points (Figure 1).

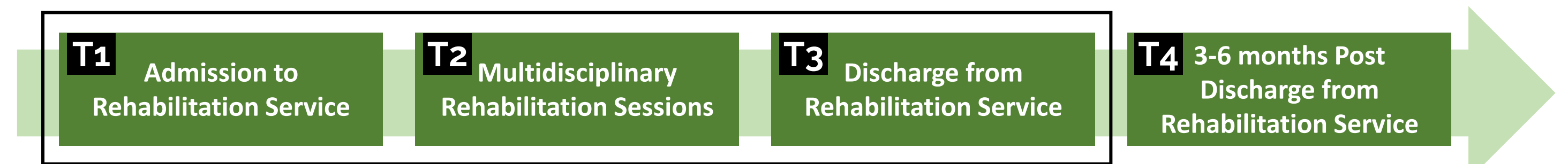


Figure 1: This poster utilises descriptive statistics to explore technology use during admission to the rehabilitation service (T1-T3).

Results

Data was reported for 41 participants who have been recruited to the study (Figure 2).

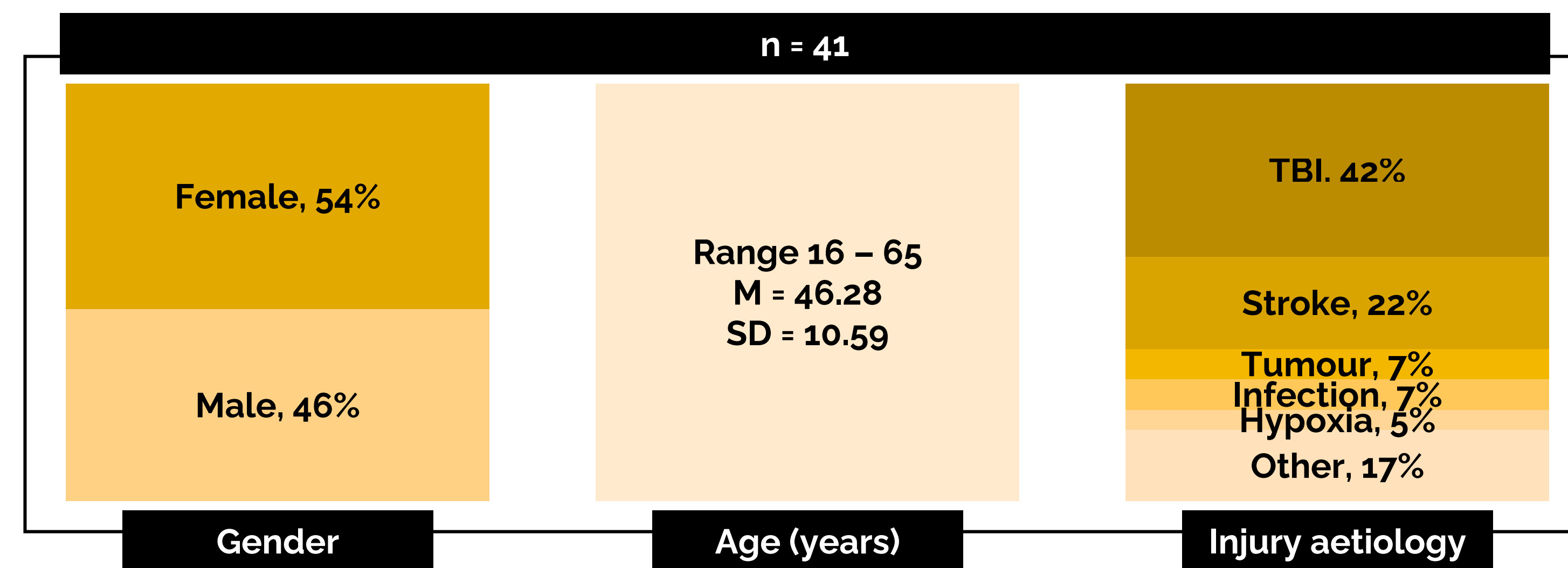


Figure 2: Demographic and injury characteristics of participants.

Frequency of technology discussions with therapists

Length of admission to the outpatient rehabilitation service ranged from 7-260 days ($M = 81.9$, $SD = 55.1$), with between 2-20 ($M = 10.2$, $SD = 6.68$) therapy sessions delivered.

Technology was on average discussed in 53.4% ($SD = 20.0\%$) of patients' therapy sessions, and in at least one session for 97.6% of patients, predominantly by Occupational Therapists and Speech Pathologists.

Technological devices and functions

Technology was most widely discussed as a method to support memory and planning, particularly by occupational therapists, through use of electronic calendars, device alarm and reminder functions, and audio recording and note taking applications. Technology was also promoted to support communication in day-to-day life (e.g., use of email, text messaging) and the delivery of speech therapy (e.g., language therapy resources or applications), as well as mental health (e.g., meditation and mindfulness applications).

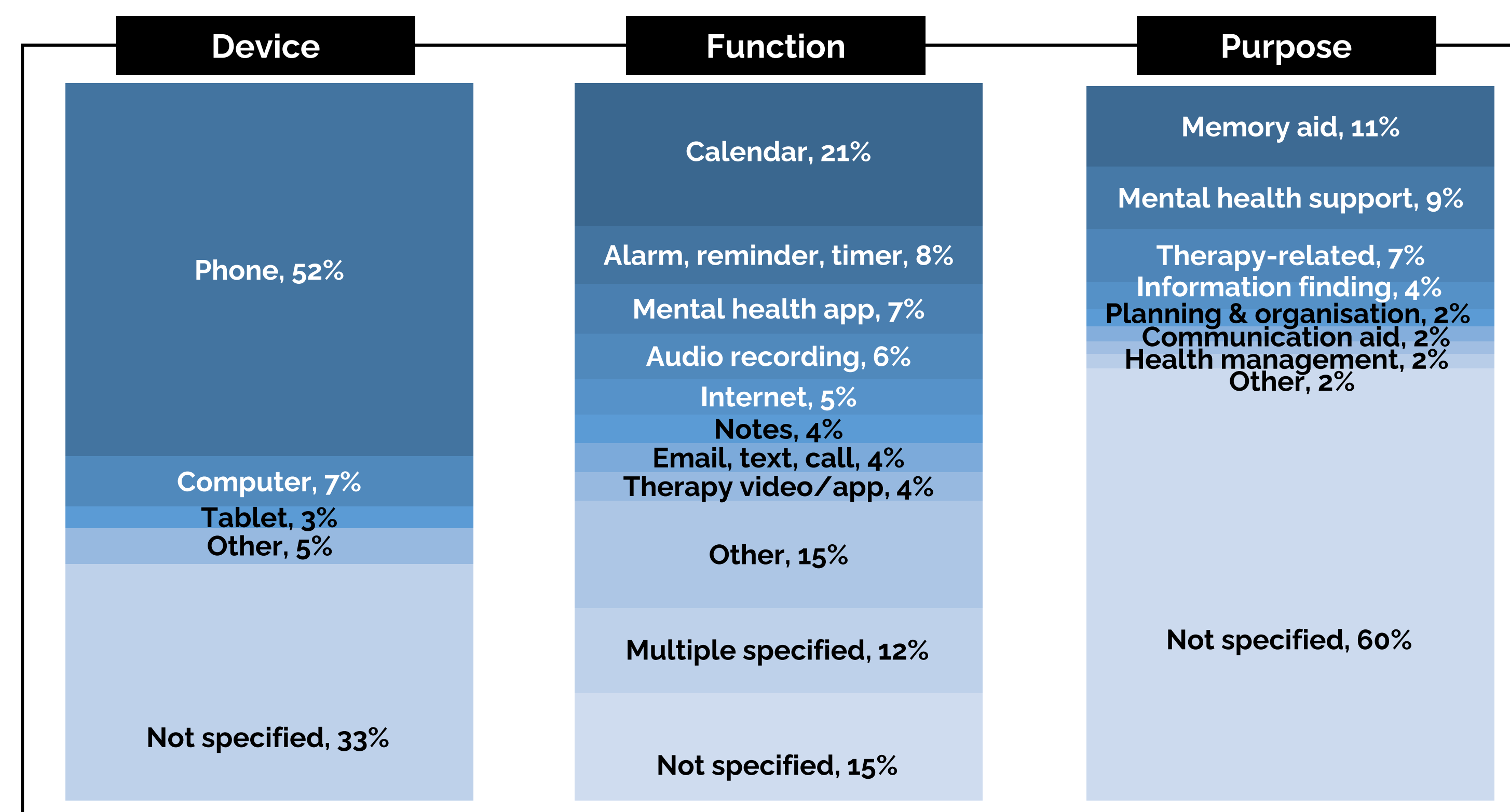


Figure 3: Technology devices, functions and purposes discussed during therapy sessions. Technology was discussed on 287 instances across patients.

Willingness and confidence to use technology

Patient willingness ($M = 6.93$, $SD = 2.91$) and confidence ($M = 6.88$, $SD = 2.56$) in using technology were rated as moderate by clinicians (0 = not at all, 10 = extremely; Figure 4).

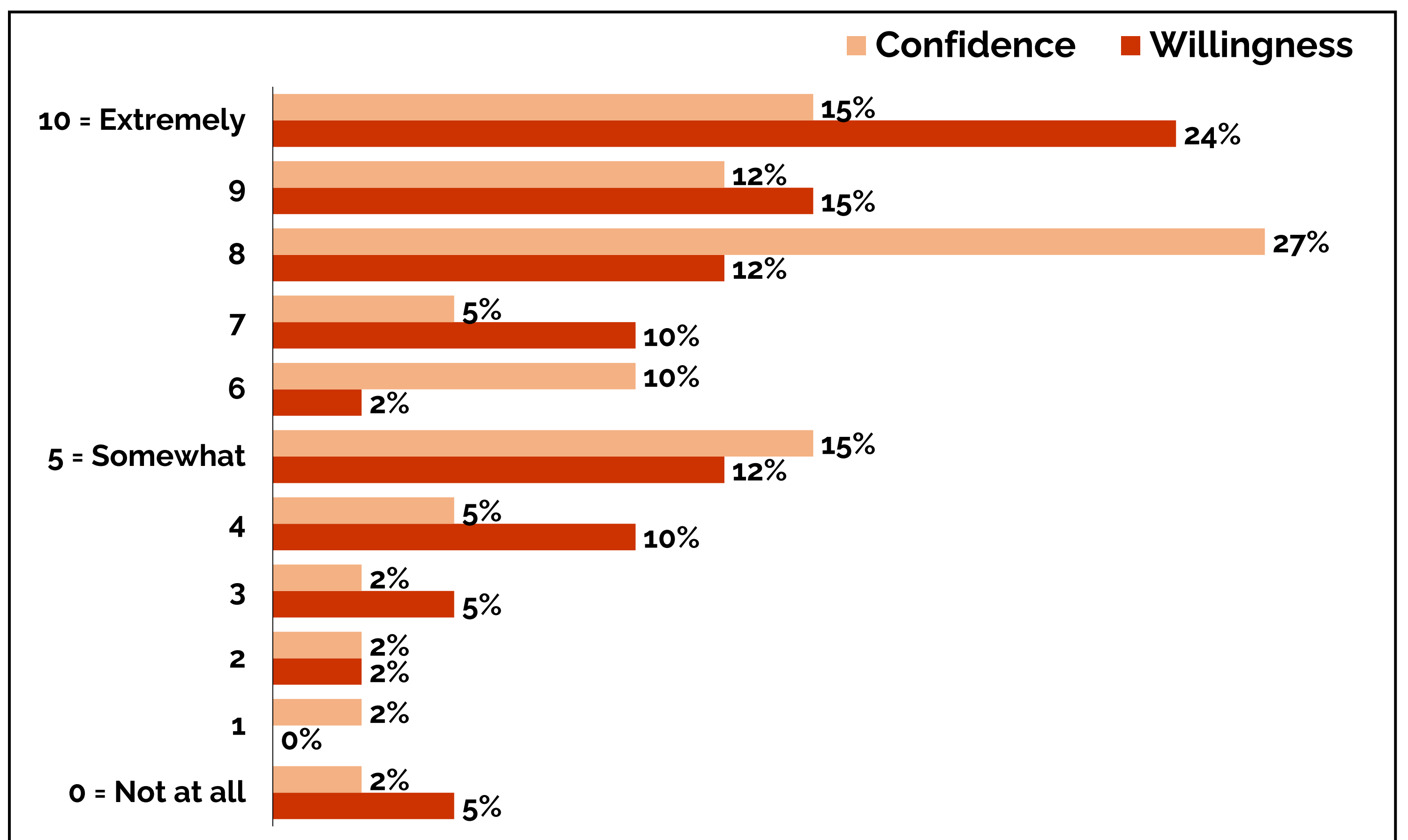


Figure 4: Patient willingness and confidence in using technology as rated by clinicians.

Barriers and enablers to technology use

As cited by the treating clinicians, the most common barriers to technology use following ABI related to psychological and cognitive or communication challenges. In contrast, technology use following ABI was most enabled by pre-injury experience or familiarity with technology, and motivation to achieve rehabilitation goals.

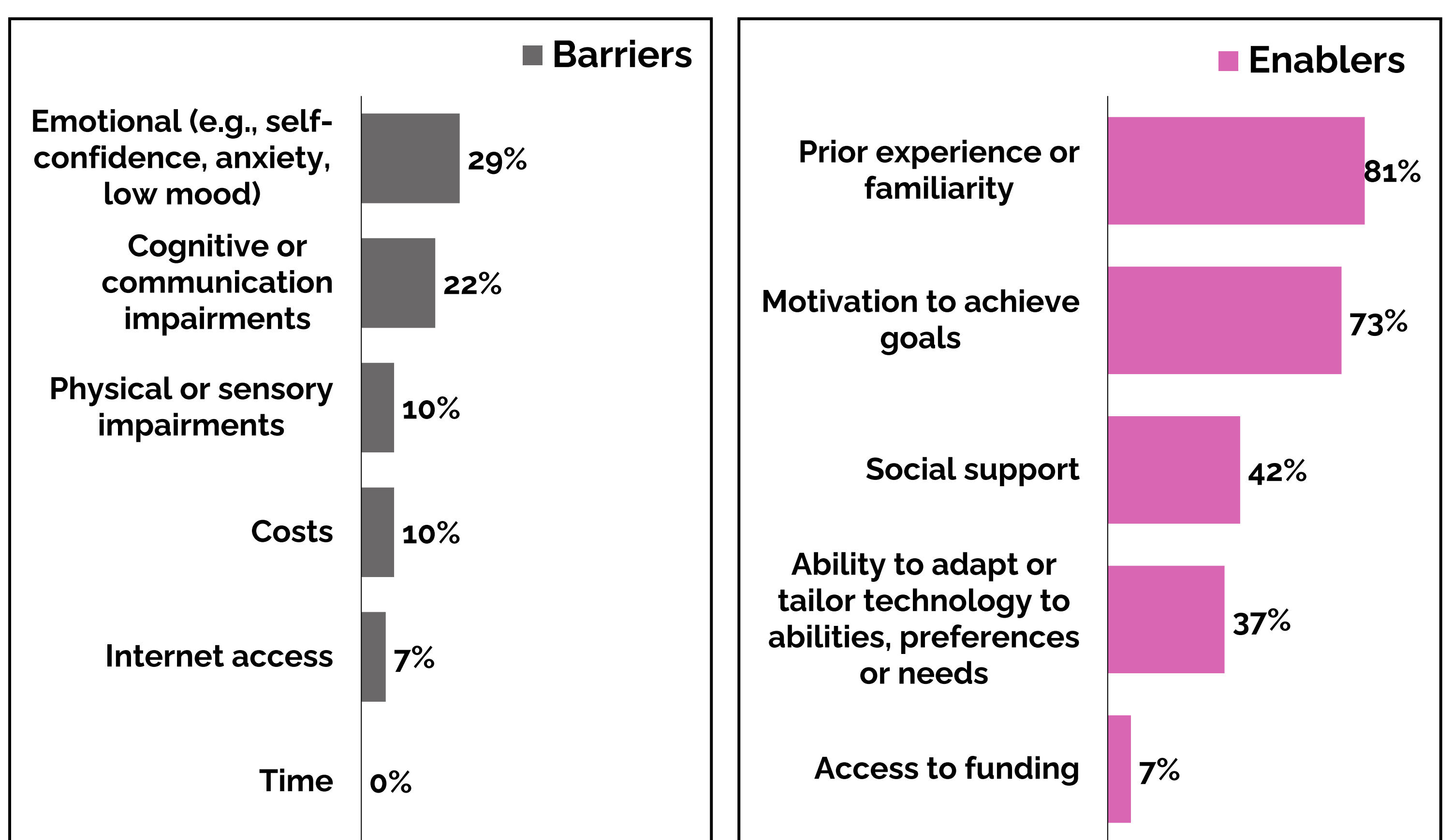


Figure 5: Patient barriers and enablers to technology use cited by clinicians.

Conclusions

Preliminary data indicate relatively high utilisation of technology during outpatient brain injury rehabilitation. Further data collection and analysis will broaden the understanding of the role of technology in brain injury rehabilitation and provide insight into ways to support technology use following ABI.

References

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