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Introduction and Background

Chronic cognitive impairments after moderate to severe traumatic brain injury (TBI) can have devastating effects on independence in daily living activities such as meal preparation. Recent studies have shown that assistive technologies have the potential to mitigate the impact of cognitive deficits on everyday activities. Over the last years, our team has been working to develop a Cognitive Orthosis for coOking (COOK) to optimize independence and safety in meal preparation for individuals with TBI. Health care providers play a significant role in training individuals to employ assistive technologies and their perspectives would be extremely valuable in successful implementation of COOK within a living or clinical context.

What is COOK?

COOK has been developed by scientists and clinicians at Université de Montréal and at Université de Sherbrooke. COOK is a context-aware web-based technology that can be linked to sensor-based monitoring systems to trigger assistance or prompts when needed. It includes two main systems:

1. **A Cognitive Assistance System** that designed to monitor and support the user in all instrumental activity daily living steps related to meal preparation via four operations: making a goal, planning, carry-out, verification.
2. **A Security System** that designed to prevent/manage potential critical errors made by the person with TBI during meal preparation.



Security control + Cognitive assistance

Objectives

The main goal of this project was to explore the healthcare providers' perspectives on *benefits, barriers, and facilitators* to the implementation of COOK for adults with TBI within living and clinical contexts.

Methodology

- **Design:** A qualitative descriptive approach via carrying out semi-structured individual interviews and focus groups (n =10) (90 minutes).
- **Participants:** Professionals with the experience of working with individuals with a TBI including occupational and physical therapists, speech language pathologists, psychologists, case managers, and clinical scientists.
- **Analysis:** Qualitative analysis based on the Miles et al. approach

Conceptually Clustered Matrix-Health Care Providers' Perspectives on Benefits, Barriers, and Facilitators of Implementing COOK

| Clusters | Benefits | Barriers | Facilitators |
|-------------------------------|---|--|--|
| Clients | ✓ Possibility of using COOK by various clients with cognitive deficits | ⊗ Severe sequelae following TBI | ⊕ Having rehabilitation professionals on board for assessments and training |
| Caregivers | ✓ Supporting caregivers by decreasing their level of burden | ⊗ Absence of supportive caregivers | ⊕ Raising awareness and providing training about COOK |
| Technology Features | ✓ Increasing the client's level of independence | ⊗ Gaps in some features of COOK | ⊕ Availability of technical support |
| Implementation Context | ✓ Possibility of implementing COOK within both clinical and non-clinical contexts | ⊗ Living in a remote area | None! |
| Financial Resources | None! | ⊗ Lack of financial support for the technology and training sessions | ⊕ Providing financial support via private insurances and governmental grants |

Implications for Rehabilitation

- COOK shows a high potential for increasing independence and safety in meal preparation with its sensor-based monitoring of the environment and cognitive-based assistance for adults with TBI.
- Comprehensive clinical assessments to identify individuals' therapeutic goals, clinical characteristics, and living environments are necessary to facilitate the deployment of COOK.

References

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