

# Identifying Features and Functions of a Work-Management App for Supporting People with Early-Onset Dementia/Mild Cognitive Impairment

Sheida Marashi<sup>1</sup>, Arlene Astell<sup>2</sup>, Anna Mäki-Petäjä-Leinonen<sup>3</sup>, Ann-Charlotte Nedlund<sup>4</sup>, Louise Nygård<sup>5</sup>, Jennifer Boger<sup>1,6</sup>

<sup>1</sup>University of Waterloo, Canada; <sup>2</sup>University of Toronto, Canada; <sup>3</sup>University of Eastern Finland, Finland; <sup>4</sup>Linköping University, Sweden; <sup>5</sup>Karolinska Institute, Sweden; <sup>6</sup>Research Institute for Aging, Canada

## Introduction

- The prevalence of **early-onset dementia (EOD)** and **mild cognitive impairment (MCI)** is rising rapidly worldwide [1].
- Many people are employed in a paid occupation when diagnosed with MCI/EOD [2,3].
- MCI/EOD can affect memory, problem-solving, and communication; all abilities that are crucial for task management.
- There are limited user-friendly technologies to provide workplace support for this population [4,5].

## Objectives

This research aims to develop a **user-centered digital application** for work-management tailored to the requirements of people with MCI/EOD.

### Research question:

**“What features and functions would support people with MCI/EOD at work?”**

## Methods

1. Semi-structured interviews and participatory workshops with people with Mild cognitive impairment/dementia and their support persons;
2. Thematic analysis of transcribed interviews in NVivo V.12 Pro.

## Results

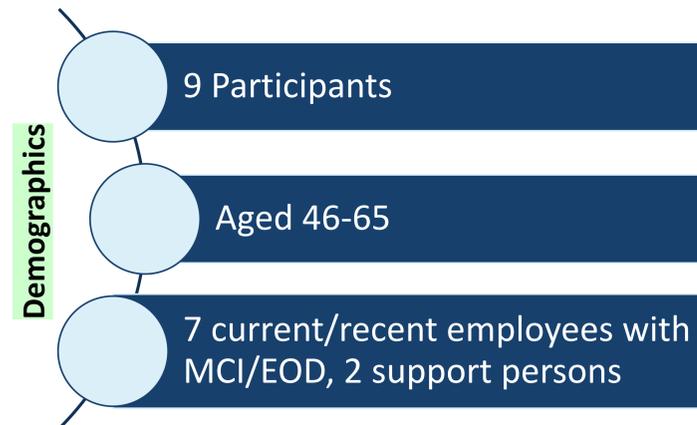


Table1. Themes derived from qualitative analysis.

| Themes   | Examples of findings   |
|--|--|
| <b>Work-related challenges</b>                     | 1) Forgetting the starting point of a task;<br>2) Multi-tasking;<br>3) Task re-ordering;<br>4) Missing tasks.                                      |
| <b>Effective self-initiated strategies</b>         | 1) Delegating tasks to trusted individuals;<br>2) Working from home for better focus and organization;<br>3) Creating task lists and cheat sheets. |
| <b>Technology features that impacted usability</b> | 1) Minimal need for navigation;<br>2) Versatility and portability;<br>3) Learnability.   |

## Discussion

1. Management of workplace tasks is crucial and difficult for the people with MCI/EOD in our study.
2. People with MCI/EOD want solutions that reduce stigma and foster inclusion. This finding supports developing technology that is usable **by everyone** in the workplace.
3. The identified challenges and self-initiated strategies (Table1) gives insights as to what and how to focus the design. Examples of features and functions derived from this:

- Mitigate task-related challenges: note-taking and list-making features.
- Tracking progress through tasks: setting labels for accomplished vs. remaining tasks.
- Managing team tasks/delegating tasks: task-sharing features.

4. More participants are needed to increase the robustness and generalizability of results.

## Conclusion

To our knowledge, this is the first research that has included people with MCI/EOD in designing an app to support work-task management.

## Future work

-  Develop more design-led inquiries as usable and non-usable features are identified.
-  Develop a wireframe.
-  Develop a functional prototype for further user-testing.

## Acknowledgements

This research is supported by AGE-WELL NCE., a member of the Networks of Centres of Excellence Program. This work is also part of MCI@work project, funded under the JTC 2017 as part of the Joint Programming Initiative (JPI) “More Years, Better Lives” (JPI MYBL) initiative. JPI MYBL is supported by J-Age II, which is funded by Horizon2020, the EU Framework Program for Research and Innovation, under Grant Agreement #643850.

## References

1. Patterson C. World Alzheimer Report 2018: The state of the art of dementia research: New frontiers.
2. Ritchie L, Banks P, Danson M, Tolson D, Borrowman F. Dementia in the workplace: A review. *J Public Ment Health.* 2015;14(1):24–34.
3. Ritchie L, Tolson D, Danson M. Dementia in the workplace case study research: Understanding the experiences of individuals, colleagues and managers. *Ageing and Society.* 2018.
4. Bharucha AJ, Anand V, Forlizzi J, Dew MA, Reynolds CF, Stevens S, et al. Intelligent assistive technology applications to dementia care: Current capabilities, limitations, and future challenges. *Am J Geriatr Psychiatry [Internet].* 2009;17(2):88–104.
5. Bell J, Leong TW. Collaborative Futures: Co-Designing Research Methods for Younger People Living with Dementia. In: *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems.* 2019. p. 352.