

# Monitoring everyday life in aging & dementia

Citation for published version (APA):

Bartels, S. (2020). *Monitoring everyday life in aging & dementia: perspectives from experience sampling and technology use*. [Doctoral Thesis, Maastricht University]. Ridderprint.  
<https://doi.org/10.26481/dis.20200917sb>

## Document status and date:

Published: 01/01/2020

## DOI:

[10.26481/dis.20200917sb](https://doi.org/10.26481/dis.20200917sb)

## Document Version:

Publisher's PDF, also known as Version of record

## Please check the document version of this publication:

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

[Link to publication](#)

## General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license above, please follow below link for the End User Agreement:

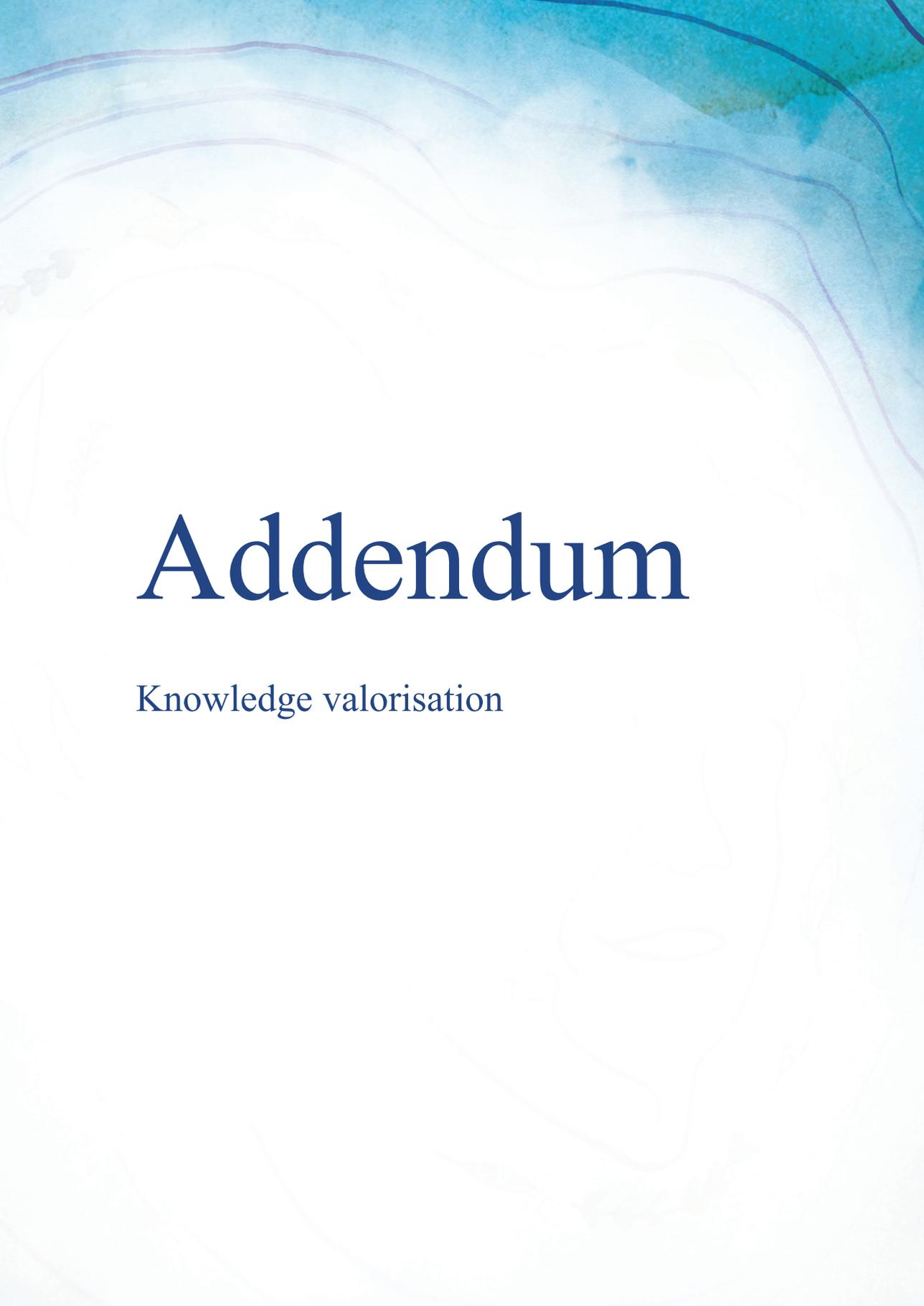
[www.umlib.nl/taverne-license](http://www.umlib.nl/taverne-license)

## Take down policy

If you believe that this document breaches copyright please contact us at:

[repository@maastrichtuniversity.nl](mailto:repository@maastrichtuniversity.nl)

providing details and we will investigate your claim.

The background is a watercolor-style illustration. It features a large, faint outline of a human face, possibly a woman's, rendered in light blue and purple tones. The top of the image has a darker blue and teal wash, which transitions into a lighter, more ethereal blue and white wash towards the bottom. The overall effect is soft and artistic.

# Addendum

Knowledge valorisation



# Knowledge valorisation

The main aim of this thesis is to improve the understanding of everyday life in older adults of different target groups with a special focus on cognitive and affective functioning and technology use. The following valorisation addendum elaborates on the societal relevance and value that the obtained knowledge resulting from this dissertation may have.

## Societal relevance

We live in an aging society and humans are now getting older than ever before. With older age, the risk to develop cognitive impairments and dementia increases. Currently, 50 million people are living with dementia worldwide and the number is expected to triple by 2050. Dementia has a physical, psychological, societal, and economic impact on the person with dementia, their family, and wider society. Due to the lack of curative treatment, attention needs to be paid to the day-to-day care and support, as well as prevention. To provide the best support possible, it is crucial to understand the complexity of everyday life, individual needs, and unique situations. As traditional methods assessing aspects of a person's life rely on memory recall and often neglect fluctuations or contexts, it seems necessary to consider and promote applying new strategies.

The Experience Sampling Method (ESM), a digital diary approach and the key method of this dissertation, allows individuals and health care professionals to gain a more fine-grained picture of daily patterns. To improve coping, the momentary information can be reviewed together with a health care professional identifying activities and behaviours that elicit happiness or that are perceived as particularly stressful. It can also provide information on the frequency and severity of cognitive problems in context.

This thesis provides evidence on the feasibility and usability of the ESM in people with mild cognitive impairment (MCI), as well as information on relevant intervention elements such as personalised feedback following a blended care principle to support older adults including carers of people with dementia. The results also highlight the need to be aware that not all older adults will be able to or interested in using a technology-based approach, and therefore, eHealth in general should not be the only option. Nevertheless, digital self-monitoring such as the ESM holds promise to improve the understand and promotion of various health aspects in different aging populations.

## Target audience

The results described in this dissertation are relevant for people with MCI, dementia, family carers, health care professionals, researchers, and policy makers.

People with MCI have an increased risk to deteriorate to dementia. Therefore, it is important to support self-management and coping when dealing with MCI to minimize the risks of cognitive decline. Evidence exists that not only cognitive or physical trainings, but also social activities and the management of depression can contribute to a reduced risk of

deterioration. This dissertation highlights the need to approach health as a complex, multi-layered construct and to ensure that interventions incorporate all health aspects. Digital self-monitoring interventions using the ESM may prospectively be a useful tool to support self-management in people with MCI. In the future, researchers and health care professionals may explore the use of digital self-monitoring interventions to improve health and prevent cognitive decline in people with MCI further.

Just like people with MCI, also people with dementia need to be included in the research process. Participating in research ensures not only that the individual's wishes and needs are heard, but can also stimulate feelings of empowerment and meaning. This dissertation shows that people in early stages of dementia are able to accurately reflect on their ability to use everyday technology. When developing or testing eHealth solutions, the input from people with dementia should therefore be included early on.

This dissertation also extends the knowledge on how ESM-based interventions affect family carers. While an ESM intervention may result in increased emotional well-being, regular and personalized feedback needs to be included to stimulate a behavioural change towards more activities that elicit positive emotions as well. Additionally, family carers need long-term support and booster sessions or micro-interventions are suggested to maintain intervention effects. When looking at the implementation of eHealth interventions for family carers, the gap between research and practice needs to be closed to facilitate a sustainable use.

Health care professionals and researchers may use eHealth such as the ESM more in the future as it allows to understand the daily challenges of older adults in a more detailed way. This dissertation also demonstrates the usability of momentary data, recommends to discuss results in feedback session together with the clients, and promotes health as a complex, multi-layered concept. Health care professionals may want to reflect critically on their currently used methods to understand help-seeking individuals and the ESM can be an interesting addition to their 'toolbox'.

Finally, to promote the implementation and sustainable use, policy makers should be engaged in the research process just like users early on. Their views and influence may contribute to a successful translation from academia into practice. eHealth and the ESM can prospectively be beneficial to maintain or improve affective and cognitive functioning in older adults and all stakeholders need to understand and facilitate these advantages.

### **Innovation and implementation**

The ESM is rarely applied in aging populations as the use so far focusses mainly on middle-aged or younger adults. To our knowledge, this dissertation is the first to test smartphone-based ESM in an MCI population. The mostly positive results of the feasibility of the ESM in MCI may encourage other researchers and clinicians to make use of this methodology in research and health care.

Furthermore, the studies presented in this dissertation advance the use of the ‘PsyMate’ app through the development and evaluation of two momentary cognition tasks. Particularly the momentary Digit Symbol Substitution Task shows to be a reliable tool to study daily cognitive functioning. The ‘PsyMate’ app is already implemented into several Dutch health care facilities and the momentary cognition tasks could prospectively be used in mental and neurological patient populations to study cognition in everyday life.

Using momentary data to understand intervention mechanisms and daily changes over the course of an intervention is also rarely done, as randomized controlled trials seem to be the golden standard to evaluate interventions. However, studying mechanisms in such a way allows to open the black box of everyday life and informs on the processes that get leveraged by intervening in a complex system. Similarly, narratively synthesising intervention elements can help our understanding of the design and elements that could be considered for future interventions. This dissertation therefore provides useful evidence for the set-up of prospective ESM-based interventions.

To disseminate the results from this thesis, we present our findings to academic and lay audiences on a national as well as international level. Inter-sectorial and interdisciplinary collaborations also contribute to the circulation of the achieved knowledge. Finally, a motion graphic will be available shortly summarizing and illustrating the key findings in an understandable way. The researchers involved in this dissertation aim to promote the use of the ESM in research and clinical practice in their future work.

