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Global Conference of Alzheimer's Disease International

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35th Global Conference of Alzheimer's Disease International

Submission ID

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Virtual

Presentation (read-only)

Either oral or poster

Abstract type (read-only)

Scientific

Topic (required)

Dementia diagnosis, treatment, care and support: Telemedicine

Title (read-only)



Abstract (read-only)

Aims: To investigate the potential of long-term monitoring daily functionality in people with cognitive impairment across the Alzheimer's Disease (AD) spectrum using and maintaining a system based on wearable sensors.

Method: An eHealth monitoring platform was developed to collect health and lifestyle data from wearable sensors, which are analyzed, transformed, and presented in visual analytics dashboards to enable clinicians to observe changes over time and adapt interventional programs. 41 participants (16 with mild cognitive impairment, 13 with subjective cognitive decline, 7 with AD, and 5 healthy controls) used the platform at home for 4 to 12 months, while clinicians periodically observed changes in the dashboards and provided feedback about the system usage.

Results: After continuous monitoring, the participants showed statistically significant improvement in sleep patterns and physical activity. These results support the notion that monitoring of physical health and providing feedback to people with cognitive impairment, who received the sensor-based system, have shown improvement in domains such as sleep quality and daily activity. Overall, paired-sample t-test analysis revealed significant improvement ($p < 0.05$) from the beginning to the end of the trial, in physical condition, and in the domains of sleep. Meanwhile, clinicians found the eHealth system extremely helpful and beneficial for receiving objective information about the participants' status.

Conclusion: Deploying a sensor-based system in real home settings of people with cognitive limitations living alone and maintaining its long-term use is not only possible, but also beneficial for clinical decision making in order to tackle cognitive, functional, and behavioral problems.

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Biography (if presenting author): Dr Ioulietta Lazarou (F) received her BSc from the School of Psychology, an MSc in "Medical Research and Methodology" from the School of Medicine, an MSc in "Complex Systems and Networks" from the School of Mathematics. She holds a PhD in Neuroscience from Medical School of the Aristotle University of Thessaloniki (AUTH). She has been working as a clinical research associate in the management and execution of several European and national research projects (Dem@Care, MAMEM, RADAR-AD etc) and the authoring of competitive proposals for research grants. Her research interests include the neuropsychological assessment of people with cognitive and associate disorders, development of cognitive rehabilitation strategies, clinical trials, brain signal analysis of people with neurodegenerative diseases, assistive technologies and remote monitoring of people with dementia and other diseases. She is a member of the Greek Alzheimer's Association and Related Disorders (GAARDR) and the Scientific Committee of the Greek Federation of Alzheimer's Disease and has co-authored over 30 publications in peer-reviewed journals and conferences.

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wearable sensors, cognitive impairment, dementia, eHealth, monitoring, diagnosis

Author will attend (read-only)

I confirm that at least one author will register in full to attend and present the paper at the conference, either in-person or online.

Author approval (read-only)

I confirm that this submission has been approved by all authors.

I am happy to receive news about Alzheimer's Disease International (ADI) events, activities and requests to support ADI's work. (read-only)

Yes

No