In conclusion, this symposium will give insight in the challenges of designing novel technology and its implementation into daily practice, to assist informal and formal cares to be able to deliver person-centered care.

Towards data-informed shared decision making: what do we need?

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Background: The increasing availability of data offers new possibilities for supporting quality of care in long-term care (LTC) for older adults, also for dementia care units in nursing homes. Examples are quantitative data in electronic health records (i.e. medication), data collected by technological devices such as sensors and wearables (i.e. data related to psychical and mental health including for example heart rate and sleeping patterns), but also qualitative data stored in texts (e.g. transcribed conversations about perceived quality of life). LTC organisations currently lack tools to interpret and integrate the data in the shared decision-making (SDM) process. This project investigates the necessities for data-informed SDM.

Methods: The study was conducted in co-design with the knowledge group 'Data Science' residing in the Living Lab in Ageing and Long-Term Care, Maastricht. A focus group-setting, in which a diverse set of stakeholders, including data/ICT-specialists, care managers and client representatives, took place to discuss bottlenecks, possibilities and solutions related to data-informed SDM.

Results: In total, representatives (n=18) from 7 care organisations participated in three separated focus groups. This resulted in several themes that were deemed necessary for data-informed SDM: 1) an organisational vision on data and data-informed SDM, 2) investment in data-driven care SDM, 3) the instalment of multidisciplinary teams, including clients, informal and formal caregivers, 4) a planned implementation process is needed, and 5) the use of living lab constructions.

Conclusion: A well-thought-out, integral learning process, including a vision statement on data and the installation of multidisciplinary teams working on data-problems, is deemed necessary in order for LTC organisations to accomplish data-informed SDM. A concrete step-by-step plan, which can provide LTC organizations with tools to embed data in the current SDM process, is suggested to help organisations in their quest to data-informed personal care.

Developing a system for measuring stress in the care for nursing home residents with dementia

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Background: Measuring and monitoring stress has potential benefits for the care and self-management of stressors for people with dementia. Early identification of stressors may help to cope with challenging behaviours (CB), occurring in up to 80% of nursing home residents with dementia. The identification of stressors causing CB is difficult (as often

residents cannot themselves indicate what is experienced as stressful or relaxing), hampering the psychosocial approach. Several studies have found that skin conductance and heart activity can be used as a proxy for stress. Measuring these physiological parameters using wearable sensors, might be helpful to identify (de)stressors and consequently, a psychosocial treatment approach. Therefore, wearables are promising as a supportive technology in the care of people with dementia and CB. However, stakeholders (i.e., (in)formal caregivers of people with dementia) indicate that current available (wearable) systems to measure stress are not fit for purpose within the everyday care of people with dementia. In addition, due to legislation, not all systems are allowed. The purpose of the current research is to develop a system prototype together with different stakeholders.

Method: A prototype of a system measuring stress suitable in the care for people with dementia will be developed during different iterations between September 2022-July 2024. A community of stakeholders will be built, in which the needs, requirements and evaluations of people with dementia, (in)formal caregivers, legal- and IT-experts, will be collected through literature studies, focus groups, interviews and co-design sessions. The system will be developed and adjusted appropriately, taking social, technical and legal requirements into account.

Results and discussion: Preliminary results will be presented regarding identified requirements for initial system prototypes as well as lessons learned from first iterations with conceptual and working prototypes. Implications for the care and self-management of people with dementia will be discussed.

Sensortechnology for monitoring challenging behavior in nursing home residents with dementia

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Background: Neuropsychiatric symptoms (NPS) are common in affected individuals and can be challenging for (in)formal caregivers. Therefore, they are also referred to as challenging behaviors (CBs). Sensor technology measuring context and behavior can be assistive to effectively manage CBs in an objective fashion. Sensors can help support healthcare professionals, such as nurses, by enabling remote monitoring and alarming on early-stage behavioral changes associated with CBs. This might/ will improve the quality of life (QoL) for both caregivers and clients living in a nursing homes (NH).

In the project "MOnitoring Onbegrepen Gedrag bij Dementie met sensortechnologie" (MOOD-Sense), we aim to develop such a monitoring system. Our research focuses on two questions 1) How to develop and implement a monitoring system within the context of nursing homes with parameters on environment, physiology, and behavior, identify and process relevant precursors of challenging behavior with this monitoring system and 2) gain insight in which behaviors are challenging according to nurses and how they are described. This will be represented in an ontology such that sensor data can be translated into the same conceptual information.

Methods: The first research question will be examined with a set of experiments in the field (in NH) with an iterative approach. Insights from previous experiments on usability and added value of sensors will be used to improve successive experiments. During each experiment, multiple participants (clients with dementia and CBs) are monitored with both ambient and wearable sensors. For the second research question a qualitative approach is employed, using focus groups

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