

Participants and researchers will then work together to co-design intervention components and refine prototypes. Finally, mixed methods survey will evaluate the co- design process and participant experiences.

Results: This study will provide two key outputs to enhance future intervention tailoring and engagement:

- 1) a pragmatic blueprint for DRR intervention with people experiencing depression across diverse mental health clinical settings, ready for evaluation and implementation
- 2) a model of DRR behavior change that is specified to this population.

Evaluation findings will support methods development for applying co-design to cognitive and mental health research.

Conclusion: This research addresses the need for new approaches to tailored, integrated mental, physical and cognitive healthcare for people living with depression that emphasize stakeholder expertise and engagement to facilitate holistic support.

P64: Wearable sensing technology for Parkinson's disease: preliminary results from the DIGI.PARK pilot

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Background: Assessment scales for motor symptoms in Parkinson's disease (PD) lack the sensitivity and resolution to monitor symptoms over time. Wearable sensors in people with PD have shown potential to assess motor symptoms. The DIGI.PARK study explores the use of consumer- and research-grade wearables such as Fitbit Sense (FS), Oura ring (OR) and Empatica E4 (EM) to track behavioral patterns and symptoms of PD over time.

Method: The DIGI.PARK pilot study (12.2021 to 12.2022) included N = 30 participants living in Bergen, Norway (N=15 persons with PD and N=15 controls). Outcome measures: self-reported diary of symptoms and behavior combined with data streams from three wearable devices (FS, OR, EM). Data was collected over 2 weeks: continuously by devices, and diary data every second day consisting of activities, sleep, medication timing (PD) and symptom occurrence (PD). The device data were segmented into 24-hour epochs. Heart rate (HR), heart rate variability (HRV), acceleration, blood volume pulse (BVP), inter-beat interval (IBI), electrodermal activity, metabolic equivalent of task (MET) and hypnogram were visualized as time series. The resulting graphs were annotated with the reported diary data and a manual checking procedure was applied to determine the correlation between sensor outputs and the logged instances of activity, sleep and symptoms.

Results: Self-reported behavior was discernable in the measurements of HR, EDA, BVP, HRV, acceleration, MET and hypnogram. We found considerable differences in device outputs regarding data type, data size, resolution, and periods of active measurements. Tremor symptoms were observable in the raw data provided by EM when worn on the affected hand. Behavioral patterns such as sleep, waking and physical activities were illustrated using aggregated data.

Conclusion: Sensor congruence with diary data support their usefulness for long term monitoring of behavioral patterns and symptoms in PD. For PD research, output from consumer- and research-grade devices have both shown usefulness. The choice of device should be tailored to the purpose and be mindful of the specific strengths

and weaknesses of different device types. Aggregated data allow for monitoring behavioral patterns over time, whereas raw data provided the resolution to discern symptoms.

P66: A systematic review of measures of social connection for people living in long-term care homes

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Background: Social connection is important for health, quality of life and care in long-term care (LTC) homes. However, research on how to improve social connection in LTC has been limited by lack of consensus on best approaches to measurement.

Research Objective: We will present a systematic review of measures of social connection developed for use in LTC residents, which aims to identify all existing measures and evaluate their measurement properties including structural validity, internal consistency, reliability and construct validity.

Method: We are following Consensus-based Standards for the selection of health Measurement Instruments (COSMIN) systematic review methods. We searched multiple bibliographic databases from inception to November 2021 for studies that were conducted in LTC resident populations, quantified any aspect(s) of social connection, and reported at least one psychometric property for the measure(s) of social connection. We conducted a second targeted search in April 2022 based on our list of identified measures, supplemented with a list of measures used in previous research in this population. We are currently evaluating the measurement properties reported for each identified measure in accordance with COSMIN guidelines.

Preliminary results of the ongoing study: We have identified 68 studies reporting on 35 measures used to assess multiple aspects of social connection in LTC homes. The majority (n=25) were measures of quality of life, wellbeing or life satisfaction, which included a social connection subdomain, whilst only 10 measures specifically target social connection. From our pooled evaluation of 20 measures to date, we have found that 20% (n=4) have sufficient evidence of structural validity, 15% (n=3) have sufficient internal consistency, 25% (n=5) have sufficient reliability, and 15% (n=3) have sufficient construct validity.

Conclusion: Many measures have been used to assess social connection in LTC settings, but few are specifically designed for this purpose and they often have insufficient evidence for psychometric properties. This review will provide detailed evidence of the quality of these measures to enable future researchers to prioritise higher