

## 425 - Do seniors find sensors use for assessment and surveillance of cognitive functioning acceptable? Findings from two feasibility studies

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**Background** Mild Cognitive Impairment is an at-risk stage for dementia and early detection has been increasingly recommended to facilitate beneficial interventions and forward planning. Changes in cognition and function can be insidious. In ageing populations, relying on relatives to detect changes is not sustainable. Moreover, resource scarcity necessitates that we innovate to find less manpower dependent methods for early detection and assessment.

**Objectives** In two separate feasibility studies, we set out to evaluate if sensors could be utilized to (1) detect changes in behaviour patterns in homes of community dwelling elderly\* & (2) evaluate instrumental activities of daily living (iADLs) in a smart home lab setting.

**Method** In the first study, 59 community-dwelling seniors (aged >65 years) were observed over the course of 2 months through the use of motion sensors, smart plugs, bed sensors and activity bands. Behaviour metrics such as forgetfulness, outings and sleep were tracked. In the second study, a smart lab was equipped with similar sensors and 35 seniors were tasked to complete two iADLs (using the telephone and counting money) while being evaluated by the sensor system.

**Results** In both studies, we found that it was feasible and seniors found the sensors to be acceptable. Over 80% of seniors had positive feedback for the in-home system and over 95% of seniors had found the lab-based evaluation of iADLs to be acceptable.

**Conclusion** Sensor technology and smart homes are feasible to utilize for assessment and monitoring of cognition and function. Knowing that seniors find it acceptable is a crucial initial step. Much more needs to be done to refine the systems and the clinical information it yields.

\* Rawtaer I, Mahendran R, Kua EH, Tan HP, Tan HX, Lee TS, Ng TP. Early Detection of Mild Cognitive Impairment With In-Home Sensors to Monitor Behavior Patterns in Community-Dwelling Senior Citizens in Singapore: Cross-Sectional Feasibility Study. *J Med Internet Res* 2020;22(5):e16854  
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