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## Concerns and tradeoff in privacy and safety of sensor-based monitoring of older people living at home

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## Sensors and Monitoring

H. EHRARI, C.J. LANGBERG, H.B. ANDERSEN. *Concerns and tradeoffs in privacy and safety of sensor-based monitoring of older people living at home. Gerontechnology 2018;17(Suppl):110s; <https://doi.org/10.4017/gt.2018.17.s.107.00>*

**Purpose** Sensor technologies offer a promising opportunity for monitoring elderly citizens living at home to provide early warning of frailty and critical deviations from expected patterns of activity. However, the use of sensor technologies prompts concerns, about privacy and the scope of acceptable surveillance. This study was a follow-up of an activity monitoring trial over 10 weeks of elderly citizens living independently at home (N=21; mean age: 85) whose physical activity, sleep and heart rate was monitored 24/7 (Fitbit Charge HR) and who received daily phone calls about their activities. Experimenters had access to a database that showed the current status of each of the trackers distributed to participants. The study sought to elicit and analyse the views and attitudes of the trial participants about monitoring. **Method** All participants lived independently and alone in their own home and received assistance once or a few times per week by a nurse or social assistant. Each of the participants were interviewed (45-60 minutes) in their home by the two experimenters with whom they had been interacting during the previous 10 weeks. Interviews followed a semi-structured format. **Results & Discussion** All participants reported that they enjoyed wearing the activity trackers primarily because it made them feel safe and cared for. Some participants expressed they felt comfortable that "someone is looking after me, someone cares about me". All participants declared that they did not feel watched or observed by using the sensors. On the contrary, they said that the sensors may help them fulfil their strong desire to stay at home and minimize the unnecessary control visits by health care professionals. When asked, "did you feel monitored during the experiment when we could see the amount of steps taken/sleeping hours?", all participants stated that they did not have any sense of being surveilled. On the other hand, when asked whether they would accept an offer from their care givers organisation (municipality) for sensor-based monitoring, 17 of the 21 participants would accept the offer, 2 would not and 2 were undecided. Participants indicated that they viewed the loss of privacy as a cost against increased safety. One of the participants said that "the thought of being surveilled worries me, but on the other hand, if it can help me I would accept this even if it intrudes on my privacy". All participants rejected the idea of being monitored via camera. Our study suggests that elderly citizens who need some assistance to maintain independent living are willing to accept sensor technology that will support their ability to continue independent living in their home environment.

*Keywords:* sensors, monitoring, privacy, independent living, seniors

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