

F.M. FELDWIESER, E. STEINHAGEN-THIESSEN. **Attitudes of senior citizens towards automatic in home fall detection.** *Gerontechnology* 2016;15(suppl):108s; doi:10.4017/gt.2016.15.s.692.00

Purpose Falls are one of the main factors in older adults to cause disability, care dependency and premature death¹. Thirty percent (30%) of people older than 65 years fall at least once a year and fall incidences rise with increasing age². Physical and mental consequences like abrasions, fractures, depression and increased anxiety are commonly observed in older adults after a fall event. Automatic fall detectors can help to call for assistance after a fall in case the fallen person is not able to call for help due to injuries on their own. This study aimed to investigate the acceptance of seniors towards various fall detection systems in the homes of senior citizens. **Method** Video, audio and accelerometric fall detection devices were installed in homes of senior citizens. Triaxial accelerometers were used for peak detection on impact in case of a fall of more than 2g occurred. The optical sensor recorded video data with the help of a standard camera which was mounted on a wall or placed on a cupboard. The microphone was placed on a freestanding tripod. The main advantage of this type of set-up is the easy installation and the relatively low costs of the devices. Questionnaires and structured interviews were used to assess the acceptance of the fall detection devices of seniors within their dwellings. **Results & Discussion** Three subjects were included in the study (1 female, 2 male; mean age 86.6 years; range 81-92). All subjects experienced falls within the investigation period. Nine (9) falls occurred overall during the investigation period. Study duration was between 28 and 43 days per subject. After the investigation period it was only possible to interview one patient and his spouse, since one subject died directly after the sample period and another subject showed severe cognitive decline, due to this fact it was impossible to perform the interview. All sensor systems were generally accepted in the domestic environment of the subjects. The acoustic sensor received the highest acceptance ratings, followed by the accelerometer. The optical sensor received more negative ratings by the interviewed couple. The sensor was perceived as an invasion in the sphere of privacy and left the subjects with a feeling of being monitored. However, the overall system was accepted quickly and no change in the behavior of the subjects was provoked by the installed technology. The system was generally perceived as a "magnitude of wires and technology" but was not recognized as a factor of objection or irritation by friends and family members. In case their health would further deteriorate and fall risk would increase both subjects were willing to install fall detection devices in their dwellings. This observation is supported by earlier findings³. Due to the small number of participants this study might experience selection bias and studies on larger populations are required.

References

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Address: Geriatrics Research Group, Charité, Universitätsmedizin, Berlin, Germany;

E: florian.feldwieser@charite.de