

Volume 11, 27 June 2011

Publisher: Igitur publishing

URL: <http://www.ijic.org>

URN:NBN:NL:UI:10-1-101497 / ijic2011-60

Copyright: 

Conference abstract

Monitoring and visualising of night time activity patterns of people with early dementia

Huiru Zheng, University of Ulster, York Street Belfast Co., Antrim BT15 1ED, UK

Haiying Wang, University of Ulster, York Street Belfast Co., Antrim BT15 1ED, UK

Paul Jeffers, Fold Telecare, Fold Housing Association, Belfast BT12 4HB, UK

Hoda Nikamalfard, University of Ulster, York Street Belfast Co., Antrim BT15 1ED, UK

Maurice Mulvenna, University of Ulster, York Street Belfast Co., Antrim BT15 1ED, UK

Suzanne Martin, University of Ulster, York Street Belfast Co., Antrim BT15 1ED, UK

William Carswell, University of Ulster, York Street Belfast Co., Antrim BT15 1ED, UK

Juan C. Augusto, University of Ulster, York Street Belfast Co., Antrim, BT15 1ED, UK

Jonathan Wallace, University of Ulster, York Street Belfast Co., Antrim BT15 1ED, UK

Paul McCullagh, University of Ulster, York Street Belfast Co., Antrim BT15 1ED, UK

Barbara Taylor, Fold Telecare, Fold Housing Association, Belfast BT12 4HB, UK

Kevin McSorley, Fold Telecare, Fold Housing Association, Belfast BT12 4HB, UK

Correspondence to: Huiru Zheng, University of Ulster, York Street Belfast Co., Antrim BT15 1ED, UK, E-mail: h.zheng@ulster.ac.uk

Abstract

Introduction: It is estimated that around 820,000 people in the UK have dementia. Telecare and assistive technology (AT) can support people with dementia living at home.

Objectives: This research aims to monitor and study night time activity patterns of people with early dementia (PwD) at home using AT, to detect abnormal patterns and to investigate whether the changes of activity profiles can be used as an indicator of the changes of cognitive function.

Methods: AT sensors were installed at three houses of people with dementia. Client activities are monitored and stored in a database. Information related to sleeping and movement patterns such as total sleep hours, sleep episodes, sleep rhythms, total movement time and movement episodes are retrieved for the detection of behaviours that may constitute non-normal activity and to help visualise trends.

Results: Sleep disturbance and wandering were observed in PwD. While an individual's sleep wandering patterns were generally consistent over a period of time, some days of abnormal behaviour were detected and the trend of changes were visualised.

Conclusions: Activity profiles of PwD contain rich information that helps in understanding their behaviour related to their health condition, and can be used to improve the telecare service.

Keywords

activity monitoring, activity visualisation, dementia
