IPA-2020, Lisbon

Symposium

Building and Using an Apps Library for People Living with Dementia and their Carers

Maurice Mulvenna, School of Computing, Ulster University for Soo Hun, Digital Health & Care Northern Ireland, Health and Social Care Board

Presentation 1: Apps Library as a digital resource for people living with dementia and carers; Soo Hun, Programme Manager, Digital Health & Care Northern Ireland, Health and Social Care Board

Presentation 2: Development of a CLEAR Dementia Care © App; Frances Duffy, Consultant Lead Clinical Psychologist for Older People, Northern Health and Social Care Trust

Presentation 3: Technology Facilitated Reminiscence in Dementia. Assumpta Ryan, Professor of Ageing and Health, School of Nursing, Ulster University

Presentation 4: Understanding behaviour of people living with dementia using apps; Maurice Mulvenna, Professor of Computer Science, Raymond, Bond, Courtney Potts, School of Computing, Ulster University.

Summary of Symposium

The symposium describes the context and rationale behind the Health and Social Care Board Northern Ireland taking the strategic initiative to develop digital resources to support an ‘app’ library. The initiative, part of the Dementia eHealth and Data Analytics Pathfinder Programme is developing a digital framework to enable the social prescribing of apps, initially in support of those with dementia and their carers. In this symposium, apps that have been developed are described, including the CLEAR Dementia Care © App, developed to help carers understand behaviour from the perspective of the person with dementia, and the InspireD app for individual specific reminiscence, for people living with dementia and their family carers. The final talk describes the new opportunities for researchers to employ anonymous digital data in their research studies to understand the behaviour of people living with dementia and their carers in using such digital apps.

**Presentation 4:**

**Understanding behaviour of people living with dementia using apps**

**Maurice Mulvenna, Professor of Computer Science, Raymond Bond, Courtney Potts, School of Computing, Ulster University.**

Abstract

Behavioural data analytics and event log analysis can be useful to gain insight into how users interact with technologies. Electronic event logging data were obtained for people living with dementia and family carers. Event logging is when each anonymised user interaction with an app is automatically logged and stored in a database. This study adopted the health interaction log data analysis pipeline, which involved data cleaning and preparation, as well as the use of exploratory data analysis and K-means clustering, to uncover behavioural patterns of usage by users of the InspireD reminiscence app, to address the question: What is the temporal behaviour of users interacting with the app? The results build on the findings of a feasibility study which found that that people living with dementia preferred to interact with photos and reminisce with personalized media. Reminiscing peaked on Thursdays and Fridays but dipped at the weekends. There was a correlation between the number of days the people living with dementia and carer interacted with the app. However, people living with dementia had many more interactions than carers. People living with dementia interacted with the app akin to one reminiscence session per week. K-means clustering uncovered four user archetypes, described as: a person living with dementia who demonstrates independent and consistent use of the app; a person living with dementia who is reliant on his/her carers for support with the app and exhibits unpredictable usage patterns; a person living with dementia who is highly reliant on his/her carers for engagement with the app; and very infrequent users.