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Titel
Gamified coaching to promote daily physical activity in older adults: a mobile activity game

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Subject area
Persuasive coaching, physical activity, gamification, older adults

Link to conference theme
Persuasive Coaching using Technology

Abstract (max. 50 words)
Our objective is to develop and investigate the added value of gamified coaching that targets the game preferences of older adults by means of a mobile activity game: MAGGY. The game combines activity sensor data with appropriate coaching in an ambulant game environment, creating a motivating experience - anytime, anywhere.

Summary (max. 500 words)
Regular physical activity is beneficial for healthy aging and can prevent or delay the occurrence and development of chronic diseases. Deploying a more active lifestyle is considered important for older adults in order to be able to live their lives independently and to be more self-supporting. Moreover, it reduces loneliness and social isolation. Consequently, a growing number of ICT applications that promote daily physical activity emerge, including mobile coaching applications in the daily life of older adults. However, these applications are little used and adherence decreases over time. Gaming technologies may offer a new approach to increase and maintain the motivation of older adults for the use of such applications. A recent review showed limited theoretical foundation for mobile activity game development (Tabak et al., 2015) and how to address the older adult most effectively through gaming technologies needs to be further explored. As such the challenge is 1) to investigate the preferred game design to apply in coaching applications for older adults and 2) to evaluate the added value of gamified coaching incorporated in a mobile activity game, in terms of motivation and engagement.

A user-centred design approach, combined with experimental work based on theoretical models on player motivation strategies and personality, has led to the development of a mobile activity game called MAGGY. To provide gamified coaching, MAGGY uses activity sensor data as input for a crossword-inspired game for mobile devices, enabling use and play throughout the day in a real world setting. Through the game, the player can monitor the measured daily activity levels and receives coaching in the form of messages to improve daily physical activity. The game contains specific game elements that fit the preferences of elderly gamers, as evaluated in a previous study (de Vette et al., 2015). In addition, a friend or family member can participate in the game through a guest account to invite for emergent gameplay.

Twenty older adults are participating in a study to investigate whether older adults can be engaged by the game and whether the game can motivate them to change their daily physical activity. During the first week, the player uses a mobile coaching application without game elements. After this week, the player will be given the opportunity to use MAGGY for the three following weeks. Experience sampling is used to gain insight in the engagement and motivation of the players on a daily level, by asking short questions on the mobile device, while logging data is used to gain insight in the actual use of both applications in an objective manner. In this way, we can obtain the research data unobtrusively and on a daily basis and with limited recall bias. In addition, questionnaires and semi-structured interviews provide detailed information on the experience with both applications, to clarify the chosen game design for older adults and to explore the added value of gamified coaching. Final results are expected in mid 2016 and will be presented at the conference.