

OPP: APPLICATION FIELDS & INNOVATIVE TECHNOLOGIES

Impact of music on wellbeing of older persons and their technology acceptance of IoT Ring as the measuring device

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Purpose The aging of the population is a major challenge facing superageing places around the world. More policies are introduced to support expand the service capacity and provide a community-based, high-quality, universal, affordable, diverse and continuous comprehensive long-term care system. New elderly medical and care service models are designed to create a healthy, energetic, happy and elderly-friendly communities. In addition, providing health promotion and management for healthy and sub-healthy elderly people can slow down aging, improve the quality of life of the elderly, and indirectly reduce medical costs. This research study which uses an IoT ring from LeadTek (Taiwan) to closely monitor the impact of music on improving the well-being of the elderly in Singapore and Taiwan and Canada communities. The elderly in the three countries have similar characteristics in the cultural, psychological and social environment. This study will be jointly conducted by National Taiwan Normal University (NTNU), Singapore University of Social Sciences (SUSS) and the University of British Columbia (UBC) in Canada. **Method** An exploratory mixed qualitative and quantitative research method to study the acceptance of the IoT ring by the elderly using Senior Technology Acceptance Model (STAM), QoL, and Subjective Happiness questionnaires for the quantitative survey. The total duration is 8-week long. At the week 0, we conduct participants briefing of the study, followed by complete quantitative survey, focus group interview with a baseline IoT Ring data collection. From week 1 to 4, the participants will listen to music for 30mins once a week and wear the IoT ring for 3 days which are before, on and after the day they listen to the music. A complete quantitative survey, focus group interview and IoT IoT data collection. From week 5 to 8, the participants will sing along with the music they listened in the week 1 to 4 for 30mins once a week and they will wear the IoT ring for 3 days which are before, on and after the day they sing to the music. **Results and Discussion** The IoT ring will be collecting the Heart rate variability (HRV) and Autonomous nervous system. Each participant shall download a Leadtek app available in IOS and Andriod stores to view their average physiological age, HRV record over the period of their participation for comparison. The software developed can calculate the sleep quality and physiological age of up to 80 participants. It is motivation for the older persons to know more about their body condition and take interesting steps to improve their wellbeing. In addition, the collaboration between the three universities and Leadtek Technology can contribute valuable research results to the important global challenge of promoting healthy aging. We will also investigate how older people's attitudes toward IoT rings, music activities affect various physical and mental functions of individuals, such as sociability, value relatedness, or reduction of cognitive dissonance.

Keywords: IoT ring, music, elderly, quality of life

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