

Understanding Exergames as an Approach to Health and Wellness for Older Adults

Christina N. Harrington, Ph.D.¹, Wendy A. Rogers, Ph.D.²

¹Georgia Institute of Technology, Atlanta, GA, USA; University of Illinois at Urbana-Champaign, Champaign, IL, USA

Research Summary

Maintaining physical activity is a key component of successful aging and has benefits for both physical and cognitive functioning in later adulthood. One promising method for engaging in physical activity is through the use of exergames, or interactive video games that simulate exercise or physical activity through the use of activity tracking sensors. Exergames have the potential to be a viable solution to many health-related deficits for various demographics, including older adults, in a variety of settings (individual homes, community living environments, senior centers, etc.). However, older adults face several usability challenges during interactions with exergames, including complex interfaces and difficult gesture controls. These challenges present potential barriers to the adoption of these systems by older adults, due to the resulting perception of their usefulness and ease-of-use. In order to develop systems that are more widely adopted, designers and researchers must understand the current challenges experienced by older adults when using exergames. In a formal usability evaluation, twenty older adults (aged 60-79) participated in light exercise activities with two exergames, and were then interviewed about their perceptions of the system's ease-of-use and usefulness, as well as their general attitudes towards the system. Participants identified the potential for exergames' usefulness for various goals, such as to increase their physical activity and their overall health. However, they also reported negative attitudes concerning the system, including perceiving barriers to system use. Overall, participants said they would use the system in the future and recommend it to other people their age for improving health, despite these use challenges. Older adults were open to adopting exergames, which could provide opportunities to improve health and wellness in various areas such as increasing mobility, flexibility, and range of motion, improving cognitive functioning, decreasing stress, and encouraging intergenerational participation in physical activity. Given the overall positive perceptions of the usefulness of exergames, designers must address the perceived challenges of using these systems. Understanding barriers and facilitators for older adults' use of exergames can guide design, training, and adoption of these systems.

Significance to WISH Audience

Design considerations for physical activity tracking and promotion technologies are valuable to the healthcare community due to the correlation of physical activity to holistic wellness. This research examines the use of Kinect-based exergames as an interactive system to track and promote physical activity for exercise, therapy, or rehabilitation activities. By understanding user acceptance of these systems, informatics and computing researchers can design future systems that are well-adopted, thus actualizing the intended health benefits.

Learning Objective

After participating in this session, the learner should be better able to evaluate and formulate an approach to adoption of interactive exercise and wellness technologies for older adults.