



Ontario Shores
Centre for Mental Health Sciences

Simply Put: Research Summaries

System development guidelines from a review of motion-based technology for people with dementia or MCI

May 2018

Simply Put: Research Summaries briefly describe research studies done by Ontario Shores researchers and collaborators. These summaries make our research available to the wider community interested in mental health research. They highlight interesting and relevant research and researchers at Ontario Shores. The authors at Ontario Shores are bolded in the About the Researchers section.

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What's it about?

Motion-based technology (also known as exergames), such as the Nintendo Wii or Xbox Kinect, has been used as an intervention in research studies to help improve the quality of life for people with dementia or other cognitive challenges (challenges with memory, thinking, attention, reasoning, etc). People with cognitive challenges find exergames to be enjoyable and engaging. Exergames also offer physical, cognitive, and social benefits.

What did the researchers do?

Researchers completed a systematic review (they looked at all of the relevant research studies to review and summarize their findings). Based on information from the research studies, they developed recommendations.

What did they find?

Researchers developed cognitive, physical and social guidelines for people developing or researching exergames for people who have memory impairments

1. Cognitive domain considerations
 - a. Choose a goal or task that is clear, engaging and achievable
 - b. Focus on skills people still have and limit involvement of skills that are impaired
 - c. Make instructions easy to understand
 - d. Make prompts simple to follow
 - e. Avoid timed responses and complex interactions
 - f. Keep the attention of the user
 - g. Reduce the possibility of failure

2. Physical domain considerations
 - a. Accommodate mobility aids (such as wheelchairs or walkers)
 - b. Account for inaccurate or imprecise motor control
 - c. Make the physical component age-appropriate
 - d. Create interfaces and interactions that are intuitive and realistic
 - e. Accommodate differences in participant capabilities
 - f. Use visual (things you can see) and auditory (things you can hear) signals to accommodate potential impairments

3. Social domain considerations
 - a. Tailor the activity to the person's interests
 - b. Design for an audience (so it is fun for a group to play together)
 - c. Make system interactions timely, constructive and positive

Why this research matters?

With an aging population, the number of people living with dementia or other memory challenges is increasing. Since there is currently no cure or treatment for dementia or other cognitive challenges, it is important to help people with memory problems to live well.

Keywords

Dementia, mild cognitive impairment, motion-based technologies, design guidelines, living well

Citation

Astell AJ, Czarnuch S, Dove E. System development guidelines from a review of motion-based technology for people with dementia or MCI. *Front Psychiatry*, 2018. 9:189.

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About the Researchers

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