International Journal of Integrated Care ISSN 1568-4156

Volume 12, 16 November 2012
Publisher: Igitur publishing
URL: http://www.ijic.org
URN:NBN:NL:UI:10-1-113867/ijic2012-215

Conference Abstract

New technologies for people aging with a disability

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Abstract

While advances in medicine, rehabilitation, and technology have allowed people with disabilities to live longer lives, research has shown that the changes and problems associated with aging often occur 10-20 years earlier for this population. This 'premature aging' may threaten the independence of people with disabilities. Aside from health related challenges, other threats to independence include issues with access and transport to medical specialists, keeping complex medical information in order, home access, home security, limited financial resources, and aging family caregivers. If these issues are not addressed, the independence, functionality, and quality of life of people aging with a disability can be significantly impacted.

Without the proper supports, people aging with a disability may need to consider moving to an environment where more assistance is provided. Fortunately, new technologies are being developed that aim to allow people to live independently in their own homes longer. While much of this technology has focused on the aging population in general, the impact this technology could have on people aging with a disability should not be overlooked.

One such technology is the VCare Residential Gateway, a remote patient monitoring and home safety device developed by Virtual Health Systems, Alberta. The Gateway is designed to be the center of an intelligent home for people who live unassisted in the community. It uses a tablet style computer with a touch screen to put health and home security monitoring technologies at the resident's fingertips. The Gateway interfaces with a range of physiological monitoring technologies (eg. blood pressure, oxygen saturation, and heart rate monitors), home safety technologies (eg. security cameras, door locks, and motion detectors) and environmental control technologies (eg. controls for lights, house temperature, and radios). It also has a video-conferencing feature that allows residents to participate in remote consultations. In a recent study, the BC Institute of Technology evaluated the usability of the Gateway with seniors with chronic illnesses.

Through a series of in-lab simulations, the evaluation aimed to get a better understanding about a number of factors including how well the technology meets the needs of end users, ease of use, barriers to adoption, physical usability issues, and potential impact of this technology.

Results of the evaluation showed that the technology is favourable for seniors with chronic illnesses. The biggest advantages highlighted in the evaluation included: the security it would provide knowing immediate help is available the ability to monitor health effectively from home that it would result in improved quality of care the potential for saving time/ money in the medical system.
Based on the results of the evaluation, it is anticipated that the Gateway would also be beneficial to people aging with a disability. This technology has the potential to allow them to live independently in their homes for longer, maintain their health more effectively, and improve the quality of their lives. Nonetheless, this technology will only be successful for this population if specific needs are well understood, and adequate design considerations are put in place (eg. screen readers for the blind, alternative inputs for those with limited hand mobility).

Shifting demographics are requiring governments to provide increased levels of support while still containing healthcare costs. As keeping people independent in their homes for longer helps ease this burden, it is likely that we will see a proliferation of technologies such as the Gateway in coming years. People aging with a disability stand to gain a lot from these new technological developments. It is imperative that further research be conducted to better understand the specific needs of this population, and to ensure that design adaptations are made to allow this technology to benefit all.

Keywords

aging, technology, disability, intelligent home

Presentation available from the FICCDAT Growing Older conference site