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Title

Telepresence robots for virtual social and academic inclusion: Can they contribute to improved well-being, health, and social outcomes for homebound pediatric patients?

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Telepresence robots for virtual academic inclusion and improved well-being, health, and social outcomes for homebound pediatric patients

Project Abstract

Due to increased survival rates, and reclassification of illnesses once considered fatal, there is a growing population of children who are homebound due to chronic illnesses. This project aims to address the lag between the scientific discoveries that have led to increased survival and needed changes in the treatments and practices afforded to these children for quality of life. Recent technological innovations, such as telepresence robots, (Figure 1) may allow for partnerships between the technology, healthcare, and education fields to improve well-being, health, and social outcomes for homebound pediatric patients. These robots allow for real-time, two-way communication and have features that allow for integration of homebound pediatric patients in existing school settings and peer social structures. The goal of robot use is for the patient to engage in social and academic experiences in such a way that they contribute to healthy social emotional development. These social experiences may also contribute to increased adherence to prescribed medical regimens resulting in improved well-being and health outcomes for this population. This project will provide an interdisciplinary partnership between schools of Education, Informatics, and Pediatrics that will provide formal, objective research studies in order to provide recommendations for use of the robots as supported by the psychology, educational, and health care research literatures.



Figure 1. Child interacting with peers and controlling robot from home

Understanding of the complex social contexts and experiences that contribute to healthy social and emotional development and aligning this understanding with the engineering and design of telepresence robots that are controlled by hospital- or home- bound children will produce ground-breaking research that will have national and possibly global implications. This innovative use of technology will provide access to real-world educational and social opportunities for homebound pediatric patients who are currently socially isolated and physically segregated from their peers and school communities. This physical segregation and social isolation may have devastating long-term social outcomes for this growing population. Research has shown long-term social outcomes for survivors of childhood cancer may include poor educational attainment, less than optimal employment status, and interpersonal relationship issues (Gurney et al., 2009).

Preliminary results from a local case study on the use of these robots in a public school system indicate that virtual inclusion may provide significant improvements in the educational, social, and healthcare experiences of this vulnerable population. This research will help bridge the gap between the science that explores the medical needs of this vulnerable population and the science that explores the social contexts of their daily lives.