

PAPER

Robotics

J. FRANCIS, S.A. HUSSAIN, S.R. COTTEN. *A privacy paradox: Potential barriers and benefits of telepresence robot use among older adults*. *Gerontechnology* 2018;17(Suppl):100s; <https://doi.org/10.4017/gt.2018.17.s.097.00>

Purpose The purpose of this study was to gain insight into the factors that either promote or prevent telepresence robot use by older adults. Telepresence robots are remote operated and designed to enhance connection between individuals across distances. In recent years, research has focused on the use of telepresence robots by older adults in particular to aid in independent living and promote social connection¹. There remain questions, however, regarding older adults' willingness to adopt telepresence robot use in their homes. Prior research suggests that older adults find both a number of drawbacks and benefits to telepresence robot use^{2,3,4}. Among the drawbacks, privacy emerges as a frequent concern^{2,3,4}. **Method** We conducted 4 focus groups (n=32) with older adults (age 65+) at local senior centres in the mid-Michigan area of the United States. Participants were presented with a telepresence robot from OhmniLabs (*Figure 1*) and shown a brief video depicting telepresence robot use during everyday situations in the home. Participants were then asked questions related to views on telepresence use and adoption, as well as questions regarding design suggestions. Focus group sessions lasted approximately 2 hours and were audio recorded and subsequently transcribed. Transcripts were coded by two independent coders. **Results & Discussion** Across the four focus groups the issue of privacy represents a primary concern of and potential barrier to telepresence robot use for older adults. Participants expressed fear of more severe breaches of privacy such as personal information hacking and government surveillance facilitated by the telepresence robots, as well as less severe privacy breaches such as family members logging into the robot at inappropriate times. Participants' privacy concerns were juxtaposed, however, with their desire for the telepresence robot to provide personal safety monitoring through sensors, alarms, additional cameras, and greater manoeuvrability throughout the home. Our findings suggest that although older adults value their privacy, they acknowledge certain situations where the need for physical safety and home security outweigh their fear of surveillance, thus making them more amenable to having a telepresence robot in their homes. Although these findings present somewhat of a paradox for designers, we suggest that there is a delicate balance to be struck when considering the older adult end-user. When designing for older adults in particular, telepresence robots should possess the modalities that can provide the owner with a direct lifeline to support and aid in times of need and/or crisis, but also provide the ability to override and control the more potentially invasive modalities in order to respect the agency and privacy of the older adult user.

References

1. Boissy P, Corriveau H, Michaud F, Labonté D, Royer MP. A qualitative study of in-home robotic telepresence for home care of community-living elderly subjects. *Journal of telemedicine and telecare*. 2007 Mar 1;13(2):79-84
2. Beer JM, Takayama L. Mobile remote presence systems for older adults: acceptance, benefits, and concerns. In *Proceedings of the 6th international conference on Human-robot interaction 2011* Mar 6 (pp. 19-26). ACM
3. Courtney KL, Demeris G, Rantz M, Skubic M. Needing smart home technologies: the perspectives of older adults in continuing care retirement communities. *Informatics of primary care*. 2008; 16:195-201
4. Caine KE, Fisk AD, Rogers WA. Benefits and privacy concerns of a home equipped with a visual sensing system: A perspective from older adults. In *Proceedings of the human factors and ergonomics society annual meeting 2006* Oct (Vol. 50, No. 2, pp. 180-184). Sage CA: Los Angeles, CA: Sage Publications

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Figure 1. A telepresence robot from OhmniLabs