

# Application Fields and Innovative Technologies

**Co-Designing Socially Assistive Robots for Canada's Aging Population: Insights from Older Adults and Family Caregivers in the Province of Quebec** A. Moreno<sup>1,2,3</sup>, C. Rigoulat<sup>1,2</sup>, C. Caamano<sup>2</sup>, R. Cangalaya<sup>2,4</sup>, M. Carré<sup>2,4</sup>, R. Casimir<sup>2,4</sup>, M. Chabouth<sup>2,4</sup>, S. Gratton<sup>2,4</sup>, J. Gravel<sup>2,4</sup>, M. Alexandre<sup>2,4</sup>, B. Krasniqi<sup>2,4</sup>, C. Loranger<sup>2,4</sup>, N. Oechsner de Coninck<sup>2,4</sup>, A. Perrier<sup>2,4</sup>, B. Raidy<sup>2,4</sup>, F. Robichaud<sup>2,4</sup>, É. Santonja<sup>2,4</sup>, A. Salmi<sup>2,5</sup>, E. Tiberghien<sup>2,5</sup>, C. Turk<sup>1,2</sup>, F. Moreno<sup>5</sup> & D. Spooner<sup>4</sup>. *Gerontechnology* 25(s)

**Purpose** Socially assistive robots (SARs) have the potential to support autonomy, mitigate social isolation, promote sustained engagement, provide cognitive stimulation, and assist with routine daily activities among older adults [1]. SARs have been used to help older adults remain independent in community settings and to support people with cognitive impairment in long-term care [2]. Given the multifaceted profiles of older adults and cultural specificities, a theoretical model highlights the need to co-create gerontechnologies with the individuals who intend to use them, following a person-centred approach that recognizes the expertise of older adults and their family caregivers [3]. This study aims to identify the ten most important functions a SAR should have according to the preferences of older adults and their family caregivers in the province of Quebec, Canada. **Method** Participants were recruited through the participant registry of the Research Center of the Montreal University Institute of Geriatrics. A total of seven French-speaking older adults with unimpaired cognition (mean age = 77.1 years, SD = 6.4, 85.7% female) and six family caregivers (mean age = 77.8 years, SD = 7, 66.7% female) responded to a homemade questionnaire regarding the potential functionalities of a SAR intended for home support after watching a video presenting possible SAR features. The questionnaire assessed participants' self-reported comfort with technology using a 10-point Likert-type scale, ranging from 1 (minimal experience) to 10 (extensive experience). It also evaluated potential ways the robot could support daily activities using a 5-point Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Older adults were White (100%), mostly single (57.1%), cisgender and heterosexual (100%), had completed at least secondary education, were retired (71.4%), and reported an average annual income of 57 000 Canadian dollars (SD = 24 779). Eighty-three percent of family caregivers were White, in a relationship, cisgender, heterosexual, had completed undergraduate education, were retired, reported an average annual income of 46 800 Canadian dollars (SD = 15 205), and 211.2 months of experience in the caregiving role (SD = 386.4). **Results and Discussion** Both older adults (6.4, SD = 1.3) and family caregivers (7.7, SD = 1.7) reported moderate levels of comfort using technology. Older adults identified the ten most important functions a SAR should have as follows: making video calls to family members; sending reminders to communicate with family and friends; sending and receiving voice or written messages; playing music; sharing news or current events; engaging in simple conversations; suggesting cognitive stimulation activities; proposing age-appropriate physical activities; sharing photos, videos, or memories; and providing reminders for social activities. Family caregivers, on the other hand, reported that the ten most important functions a SAR should have to help them support their care recipients are as follows: fall detection with immediate notification to medical services; alerts in case of unusual behavior; checking whether an appliance has been left on; sharing photos, videos, or memories with the older adult; reminding about medical appointments; reminding about medication intake; creating a daily schedule or calendar; reducing the risk of forgetfulness; facilitating video calls; and playing music. The perspectives of cognitively healthy older adults tend to prioritize activities aimed at social participation and leisure, whereas family caregivers emphasize the creation of a SAR whose system allows monitoring the older adult's behavior, responding promptly in case of an emergency, and facilitating care management. These perspectives can be reconciled by adopting an approach in which older adults can anticipate different types of assistance should cognitive decline occur, while simultaneously providing a technological solution that enables them to maintain social participation.

## References

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