Exploring the ethical aspects of technology for older adults and people living with dementia
A.Flynn (Convener). *Gerontechnology* 25(s)

Participants: L. Hung (Canada), L. Ren (Canada), A. Flynn (United Kingdom), M.L. Fang (Canada).
ISSUE The global population is aging at an unprecedented rate, with the number of adults aged 60 years and over expected to double by 2050 [1]. This demographic shift brings significant challenges in maintaining quality of life, autonomy and dignity for older adults, particularly those living with dementia [1]. Alongside this growth comes a fourth industrial revolution where digital technology is increasingly becoming widely accepted [2]. While technology holds promise for supporting independent living and enhancing quality of life, older adults and people living with dementia face increased barriers to technology adoption, including complex interfaces, assumptions about prior technical knowledge and lack of personalisation for varying cognitive abilities [3,4]. Therefore, it is imperative that technology is designed, developed and implemented with and for their needs, respecting their autonomy and dignity through an ethical lens. This symposium aims to explore ethical dimensions, sharing experiences of ethical design, development and implementation. This symposium aims to ensure that technology serves as a tool for empowerment rather than exclusion, enhancing human care and connection. **CONTENT** 1. L. Hung (Canada) will outline the ethical challenges and practical strategies in the implementation of social robots (Paro and LOVOT) for residents living in Canadian long-term care. 2. L. Ren (Canada) will evaluate two key ethical frameworks (biomedical ethics and relational ethics), analysing how they complement each other and proposing an integrated framework for the ethical development and use of virtual reality for older adults living with dementia in hospital settings. 3. A. Flynn (United Kingdom) will present ongoing work taking place with W.Q. Koh and colleagues in Australia exploring older adults' experiences of the ethics of innovative technology. 4. M.L. Fang extends the ethical focus by integrating evidence from a scoping review of reviews with lived experience insights from older adults and stakeholders, highlighting systemic ethical gaps in AgeTech and proposing principles for responsible, age-inclusive innovation to support aging well in place. **CONCLUSION** This symposium provides attendees with practical insights into how to engage with older adults and people living with dementia through ethical frameworks, leveraging participatory approaches. Together, the presentations highlight the need for integrated ethical frameworks and practical guidance that move beyond singular approaches, the importance of cultural and contextual sensitivity in implementation, and the need to centre users' voices in ethical decision-making throughout the technology lifecycle. The symposium demonstrates that successful technology design, development and implementation require balancing individual autonomy with relational care contexts, continuous stakeholder engagement and adaptive strategies that preserve dignity and meaningful human connections all while embracing innovation.

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Ethical considerations of using robots for older adults with dementia L. Hung, P. Y Zhao, L. H. Ren

Background Social robots are increasingly being utilized to address mental health challenges in older adults, such as depression, anxiety, and loneliness [1–5]. However, ethical concerns surrounding their use are insufficiently explored in empirical research [6]. **PURPOSE** The purpose of the study is to outline ethical challenges and practical strategies in the implementation of social robots (PARO and LOVOT) for residents living in Canadian long-term care. PARO is a therapeutic robotic baby seal designed for use in healthcare settings to provide emotional comfort, reduce stress, and support psychosocial well-being, particularly for older adults living with dementia. LOVOT is a socially assistive robot designed to evoke joy and companionship through warmth, movement, and responsive behaviors, focusing on emotional connection. **Method** We drew insights gained from two research projects of the implementation of the PARO and LOVOT social robots in long-term care (LTC) homes in Canada. In the LOVOT study, 36 older participants were recruited; in the PARO study, ten older adults. The deployment followed a Collaborative Action Research methodology involving older adults, families, staff, and operational leaders to co-develop technology adoption strategies. The robot sessions varied from 5 to 30 minutes, in individual and group formats, with support from families, students, recreational, rehabilitative, and nursing staff. Our research team, consisting of researchers and trainees, collaborated with older adult partners to support LTC homes in using these robots to improve residents' mental health and wellbeing. **Results and Discussion** Four key ethical challenges associated with implementing social robots in LTC are: 1) inequitable access; 2) researcher-centred approach; 3) substitution of human care; and 4) potential infantilization. Four mitigation strategies to address each ethical challenge were suggested: 1) increase accessibility with equity; 2) relational ethics; 3) adopt with care; and 4) inclusive design. The paper offers practical insights into ethical and responsible implementation of social robots in LTC to promote positive mental health and wellbeing for older adults living with dementia.

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What Informs the Ethical Development and Use of Virtual Reality for Older Adults with Dementia in Hospitals? A Critical Evaluation of Ethical Frameworks L. H. Ren, L. Hung, W. B. Mortenson, J. Henderson. *Gerontechnology* 25(s)

Background Older adults with dementia (OAWD) in hospitals are a highly vulnerable population with complex and diverse needs [1]. Hospital staff often face challenges, such as fast-paced environments, staffing shortages, and limited resources, that hinder person-centred dementia care [2,3]. Virtual reality (VR), an emerging technology, shows promise for improving the wellbeing of OAWD and staff's engagement with them [4–8]. However, little is known about how ethical frameworks can guide the ethical development and use of VR in hospital settings. **PURPOSE** This study provides an original contribution by critically evaluating two key ethical frameworks, biomedical ethics and relational ethics, analysing how they complement each other and proposing an integrated framework for the ethical development and use of VR for OAWD in hospitals. Biomedical ethics is grounded in four principles: respect for autonomy, nonmaleficence, beneficence, and justice. Relational ethics is an action ethic built upon five essential tenets: mutual respect, engagement, embodied knowledge, environment, and uncertainty. Biomedical ethics offers structured, principle-based reasoning, while relational ethics emphasises mutual respect, engagement, and relationship-centred care within dynamic hospital environments [9–12]. **Method** We critically evaluated biomedical ethics and relational ethics frameworks to analyse their respective strengths and limitations, examining how they complement each other in guiding the ethical development and use of VR for OAWD in hospitals. **Results and Discussion** Integrating these analyses, the proposed integrated framework includes: 1) mutual respect and engagement as starting points; 2) beneficence, nonmaleficence, and respect for autonomy through embodied knowledge; and 3) navigating justice within care environments. Our proposed novel framework is built upon two foundational premises: 1) fostering comprehensive partnerships that include patient partners with living experiences of dementia, family caregivers, staff, care leaders, industry, policymakers, and ethicists; and 2) embedding equity, diversity, and inclusion to ensure accessibility and relevance. Informed by the framework, we delivered VR in a hospital in British Columbia, Canada, where OAWD is diverse. In this process, we meaningfully engaged multiple partners to refine the VR program and maximise its practice relevance. For example, co-designing VR videos with patient partners with living experiences of dementia and family caregivers ensured videos are tailored to the psychosocial and cultural needs of OAWD in hospitals; prolonged huddles with staff and care leaders and a co-developed toolkit made clinicians feel supported and prepared when watching VR together with different patients. The framework leverages the strengths of both approaches and offers a structured and context-sensitive guide for the ethical development and use of VR for hospitalised OAWD. Future studies can explore how this framework informs the ethical and inclusive development and use of VR and other similar technologies in dementia care and may contribute to advancing healthy and dignified aging.

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What Constitutes Ethical Use of Innovative Technologies for Dementia Care? A. Flynn, D. Anantharaman, J. Liddle, T. Vandemeulebroucke, W.Q. Koh. *Gerontechnology* 25(s)

Background In residential care, innovative technology like robotic pets and virtual reality is reinventing dementia care to support psychosocial wellbeing. Despite increasing interest in their use [1,2], their use has raised ethical concerns in dementia care [3]. Much of existing debates have excluded the perspectives of end users, including people with lived experience of dementia, their family members and residential aged care staff [4]. **Purpose** This study aims to include the voices of end users and understand their ethical perceptions of what constitutes ethical use of innovative technology. **Method** At the outset of this research, an Advisory Panel involving 4 advisors with lived experience of dementia was established. The Advisory Panel was consulted to establish research methods and data collection procedure. A qualitative study was conducted, using a constructivist grounded theory methodology. Five in-depth interviews and four focus group discussions were conducted with people living with dementia, their family members, and residential care staff. Discussions were guided by videos of ethical vignettes which depicted a series of ethical dilemmas when using innovative technology. Data were audio-recorded, transcribed and analysed with the multidisciplinary research team. **Results and Discussion** Twenty-one participants were recruited, including 9 family members, 7 people living with dementia, and 6 aged care staff. Data analysis is ongoing; preliminary analysis demonstrates that participants' ethical reasoning was similar regardless of their demographics. Participants' reasoning on what constituted ethical technology use included weighing perceived benefits against status quo, and providing people with dementia choice, control and autonomy. Findings will inform policy and practice for ethical implementation of technology in dementia care and in next-generation residential care approaches.

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Keywords: innovative technology, virtual reality, pet robots, ethics, dementia, residential care, aged care

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Ethical and Responsible Innovation in AgeTech: Insights from Reviews and Stakeholder Consultation M.L. Fang, E. Stone, R. White, O. Bryanton, J. Mann, M. Moulton, C. Chu, J. Boger, J. Sixsmith, H. Loret, A. Sixsmith. *Gerontechnology* 25(s)

Purpose This paper examines the ethical, socio-spatial, and relational dimensions of AgeTech by investigating how technologies intended to support ageing in place intersect with autonomy, responsibility, and equity. AgeTech - technologies designed to enhance older adults' health, safety, independence, and quality of life - is often positioned as a key means of enabling independence and reducing care pressures [1]. Yet such narratives can obscure the broader social and institutional systems in which these technologies operate and can contribute to "responsibilisation," whereby individuals and families are expected to manage health, safety, and social risks through technology without adequate systemic support [2]. The aim is to identify dominant ethical narratives within the literature, integrate experiential insights from older adults and stakeholders, and propose pathways toward more contextually grounded and responsible innovation in gerontechnology (Figure 1). **Method** A scoping review of reviews was undertaken to synthesise ethically oriented scholarship on ageing and technology published between 2013 and 2023. Seven electronic databases were searched, yielding eight reviews that met inclusion criteria and collectively examined 405 articles published from 1994 to 2021. Thematic analysis identified recurrent ethical issues including privacy, autonomy, digital literacy, and inequalities in access. These findings were interpreted in light of earlier work on the digital divide [3] and critiques of the limitations of "ageing in place" frameworks [4]. To contextualise the review findings, six participatory stakeholder workshops were conducted - three in Canada and three in the United Kingdom - with older adults, caregivers, clinicians, technologists, designers, and community partners. Using a community-engaged approach, these workshops explored lived experiences with AgeTech, ethical tensions emerging in everyday use, and the relational dynamics shaping trust, acceptance, and resistance. **Results and Discussion** The scoping review revealed that ethical concerns related to AgeTech operate across micro (individual), meso (community), and macro (societal) levels. Tensions frequently emerged between autonomy and surveillance, with many technologies designed to promote safety also raising issues around privacy, consent, and usability. Participants underscored the importance of community networks and social supports that mediate how older adults engage with technology. Broader systemic barriers - such as affordability, inadequate digital infrastructure, and design bias - were identified as persistent constraints on equitable access. The workshops reinforced these themes while revealing lived experiences that challenge dominant narratives of empowerment. Older adults described both benefits and burdens in using technology. Those with higher digital confidence viewed AgeTech as enhancing autonomy and social connection, while others expressed frustration with systems that felt opaque, exclusionary, or that replaced rather than complemented human interaction. Many found technologies mismatched to their needs, reflecting ageist assumptions in design and deployment. Taken together, the findings highlight the need for shared responsibility across designers, policymakers, health and social care systems, and communities. Ethical gerontechnology requires participatory and context-sensitive practices that recognise older adults as co-creators, not passive users. Responsible innovation must move beyond minimal accessibility standards to ensure technologies complement people's values, social worlds, and environments, thereby supporting ageing well in place while safeguarding dignity, autonomy, and equity.

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Figure 1: Overview of the study phases