Digital Companions for Dementia Care: A Scoping Review Y.T. Chiu. *Gerontechnology* 25(s*)*

Purpose AI-enabled digital companions—non-embodied systems designed to simulate social or emotional interaction—are increasingly explored in dementia care to support reassurance, reduce loneliness, and promote meaningful engagement. However, evidence remains fragmented across health, social science, and computing disciplines, dementia-specific synthesis is limited. This scoping review aims to map existing research on AI-enabled digital companions used by older adults, including those with dementia, and to identify key design features, reported outcomes, usability challenges, and ethical considerations relevant to dementia-focused implementation [1,2]. **Method** This scoping review follows the Joanna Briggs Institute methodology and the PRISMA Extension for Scoping Reviews (PRISMA-ScR) [1,2]. Eligible studies examine virtual, non-embodied digital companions with two-way conversational or affective interaction, including chatbots, conversational agents, avatar-based companions, and voice-based AI systems with social functions. Embodied robots and non-interactive technologies are excluded. Searches were conducted across major health, social science, and technology databases and supplemented by citation chaining. As of December 2025, approximately 40–50 studies met the inclusion criteria and were included in the final synthesis. **Results and Discussion** Preliminary synthesis identified four key thematic areas relevant to dementia care. First, digital companions may provide emotional reassurance and a perceived sense of social presence, with potential to reduce anxiety, loneliness, and nighttime distress. Second, systems offering cognitive prompting and structured conversational support show promise for assisting individuals experiencing early cognitive decline, particularly when voice-based interaction minimizes visual, literacy, or motor demands. Third, significant usability and accessibility challenges persist, including difficulties navigating complex interfaces, interpreting system boundaries, and distinguishing AI-generated responses from human interaction. Simplified design, predictable dialogue structures, and multimodal interaction emerge as critical facilitators of adoption. Fourth, ethical concerns—including privacy, transparency, emotional dependency, and the potential displacement of human care—are consistently highlighted, especially in long-term care contexts. Overall, dementia-specific evidence remains limited, with few studies incorporating co-design with people living with dementia or examining long-term engagement. These findings underscore the need for dementia-informed design frameworks and longitudinal evaluation to guide responsible implementation.

References

1. Peters M, Godfrey C, McInerney P, Munn Z, Tricco AC, Khalil H. Chapter 11: Scoping reviews. In: Aromataris E, Munn Z, editors. *JBI Manual for Evidence Synthesis*. Adelaide: Joanna Briggs Institute; 2020.
2. Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and explanation. *Ann Intern Med*. 2018;169(7):467–473.

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Affiliation: School of Nursing, University of British Columbia, Canada
Email: yiting.chiu@ubc.ca
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