

Dementia and Technology

Effects of Social Care Robots on Depression and Psychosocial Well-being in Older Adults: An Systematic Review Y.H. Jin, H.R. Shin, Y.S. Kim. *Gerontechnology* 25(s)

Purpose Depression and loneliness are major challenges for older adults, especially those who are socially isolated or cognitively impaired [1]. This review synthesizes recent evidence on social robot interventions for psychosocial well-being and identifies factors affecting their effectiveness. **Methods** A narrative integrative review based on the PICOS framework was conducted to synthesize recent empirical evidence on social robot interventions for older adults. A systematic search was performed in five databases (PubMed, Web of Science, Embase, RISS, and DBpia) for studies published between January 2022 and August 2025. The core keywords were “older adults” and “social robot.” Search strategies combined population terms (older adults OR seniors OR older adults living alone OR elderly OR dementia) with technology terms (social robot OR care robot OR companion robot) and were intersected with outcome-related terms (depression OR anxiety OR emotion OR mental health OR psychosocial health). Eligible studies included randomized controlled trials, quasi-experimental studies, and mixed-methods designs involving participants aged 65 years or older. Interventions had to involve physical social robots aimed at facilitating emotional interaction, social participation, or cognitive stimulation; studies using non-social technologies, secondary reviews, or inaccessible full texts were excluded. A total of 24 empirical studies met the inclusion criteria. Data were extracted on participant characteristics, robot type (pet-type, humanoid, conversational, and telepresence), care setting (community-based or long-term care), and psychosocial outcomes, and were synthesized comparatively to identify common patterns and contextual differences. **Results and Discussion** Across settings, social robot interventions demonstrated short-term reductions in depressive symptoms and improvements in emotional engagement [2]. Pet-type robots were particularly effective in providing emotional comfort and reducing anxiety for older adults with dementia, whereas humanoid and conversational robots supported mood regulation, daily interaction, and a sense of companionship among socially isolated community-dwelling older adults [3]. Telepresence robots were primarily effective in reducing loneliness by facilitating communication with family members and maintaining social connections [4]. Additionally, an integrated social care robot combines emotional, cognitive, and social functions and works most effectively as a complementary care tool. However, several studies reported diminishing effects over time, suggesting novelty effects and practical challenges in sustaining long-term engagement. Overall, the evidence suggests that social robots are most effective as complementary psychosocial tools rather than standalone interventions. Their effectiveness was greatest when technological features were integrated with caregiver involvement and structured interaction protocols. Moreover, aligning user needs, robot design, and care contexts was essential for promoting sustained engagement and real-world applicability.

References

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Keywords: social robots; depression; loneliness; older adults; dementia

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Acknowledgement: This research was supported by the National Research Foundation of Korea grant funded by the ministry of education in 2021(NRF-2021S1A3A2A01096346).

Table 1. Key features and effects

Robot Type	Key features and effects
Pet-type robot	• Provides tactile, non-verbal comfort that reduces anxiety in dementia, but needs structured use to sustain effects
Humanoid robot	• Supports mood and engagement through conversation when personalized and caregiver-support.
Conversational robot	• Uses dialogue and reminiscence to reduce loneliness, especially for socially isolated older adults.
Telepresence robot	• Reduces loneliness by enabling family communication, depending on technical reliability
Integrated social care robot	• Integrates emotional, cognitive, and social functions and works best as a complementary care tool