

HomeLink: Supporting Family Communication for Aging in Place

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Abstract

Many older adults wish to continue living in their own homes and communities. Adult children often provide essential social support for parents who are aging in place. In this work, we report preliminary findings of a field study in which we evaluated HomeLink, a home-based technology that encourage aging parents and adult children to provide social support and bond with one another. We report on their use of FidgeMagnet as a dedicated communication channel, its use to support boundary setting, and its role in supporting phatic communication.

Keywords

aging in place

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1 Introduction

Many older adults prefer to age in place — that is, to live independently in their own homes and communities for as long as possible. Adult children are often an essential part of aging parents' care network as informal caregivers. They provide a range of social support to aging parents, such as tangible, emotional, anticipated, and informational support [2]. The academic literature has rapidly explored opportunities for technology to support aging in place, and shown its potential for activity monitoring, intelligent personal assistants, and informational support (e.g., [1]). Despite these advances, foundational barriers to effective aging in place are poor communication and informal support with one's family, caregivers, and healthcare providers.

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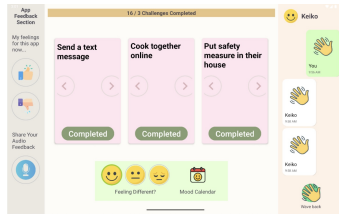
This research is part of a broader ongoing project to design and evaluate communication technologies to support aging in place [2, 3]. In this work, we developed a home-based communication technology, in the form of a tablet app, that facilitates check-ins, mood sharing, and prompts aging parents and adult children to provide social support for each other and bond with each other. The tablet is placed in a central location within the home, such as the kitchen, and can be used by all members of the household. We ran a four-week field study to learn about the impact and usage of the app. In this demo, we present our preliminary findings.

2 Related Work

Our research builds on a program of work examining communication and social support in informal caregiving for aging in place. Prior work has shown that adult children play a central role in providing emotional, informational, and practical support, but that these interactions are shaped by complex and sometimes conflicting needs. Mynatt et al. [4] previously articulated key tensions in informal caregiving, highlighting challenges in balancing availability, independence, and expectations of support. This work motivated a focus on communication as a site for design intervention.

Building on this, our recent work [2] applied computational thematic analysis to large-scale online discussions of informal care, identifying recurring patterns in how families negotiate support, including the importance of lightweight, low-effort interactions and the need for flexible boundaries. Our forthcoming interview study [3] further deepens this understanding by examining perspectives of both aging parents and adult children. This work characterizes how boundaries are actively negotiated in everyday communication and identifies opportunities for technology to better support mutual awareness without increasing burden.

While prior HCI research has explored communication technologies for aging in place, much of this work emphasizes monitoring or task-oriented support. In contrast, our work centres on everyday social interaction, with a particular focus on lightweight, phatic communication and boundary setting. In this paper, we extend this line of work through the design and field deployment of a home-based communication system, allowing us to examine how these dynamics manifest in situ.



(a) A screenshot of HomeLink

Figure 1: The HomeLink app included 'challenges' for the participants to complete. The challenges provide ideas for social support and bonding with each other. The app also facilitated sending a 'Wave', sharing one's mood, and tracking ones own mood.

3 HomeLink

We designed and implemented HomeLink, an Android tablet app that supports lightweight communication between older adults and adult children. The app included daily challenge cards that suggested activities for connection, such as sharing memories, asking questions, or offering support. The app also facilitated sharing mood updates, a wave feature for quick check-ins, and progress feedback that showed completed challenges.

4 Methodology

We conducted a 28-day field study with older adults and their adult children. We recruited dyads in which the adult child was 18 to 64 years old and the aging parent was 65 years and older. Older adults were required to live independently without needing assistance with day to day activities.

HomeLink was installed on Samsung Galaxy Tab S9 FE tablets. Researchers visited each older adult's home to set up the tablet, explain the app, and help participants choose an initial location for use. During the study, we conducted regular check-ins with the participants via email. The participants could share feedback by email, through audio feedback in the app, or by writing notes like a journal. On the last day, researchers returned to conduct final interviews. Older adults and adult children were interviewed separately first, and then together to reflect on their shared experience. Researchers then collected the study equipment and provided remuneration as a token of appreciation to the participants.

5 Preliminary Findings

Each participant dyad had a unique situation and existing familial relationship. All of our participants kept in touch regularly with each other, yet they all had different family dynamics. Dyads' unique contexts led to nuanced differences in their experience regarding the home-based feature, phatic interactions via the Wave and mood sharing, and nudging for social support via the activity cards.

5.1 Boundary Setting

C6 enjoyed keeping in touch with her mother, P6. P6 provided social support, mostly practical, to her daughter even though she did not agree with all of C6's choices in life. P6 shared that the app as a home-base technology that is used for communication can

facilitate boundary setting by staying in a designated spot within the home.

5.2 Dedicated Communication Channel

P3 and C3 had a close relationship and enjoyed spending time together. C3 liked interacting with her mother via the tablet; unlike her cellphone, the tablet created a dedicated communication channel between her and her mother. C3's children enjoyed sending waves to P3, and C3's whole family discussed which activities suggested by the app they could engage in.

5.3 Phatic Communication

P4 shared that phatic interactions (for example, a Wave, a good morning or good night call) can foster regular check-ins and peace of mind. She decided to implement a similar checkin routine, for example good morning and good night messages, with her own mother who lived in another province. C4 believed that phatic interactions can reduce perceived effort of interaction and thus facilitate regular check-ins.

We found that phatic interactions (for example mood sharing) can lead to follow up conversations and thus awareness of each other's well-being, an experience mentioned by C2.

C5 and P5 noted that during the study they had been in touch more and that some suggested activities sparked deeper conversation between the step-mother and daughter beyond caregiving tasks. C5 shared that P5 had asked for more help during the study and hoped she would continue to do so even after the study ended.

6 Conclusion and Future Work

Overall, our preliminary findings show that the home-based technology played a different role given the familial context and relationship. We are currently in the process of conducting case study and thematic analyses on the data that we collected, with the aim of creating design guidelines for communication technologies that support aging in place.

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References

- [1] Margot Brereton, Alessandro Soro, Kate Vaisutis, and Paul Roe. 2015. The Messaging Kettle: Prototyping Connection over a Distance between Adult Children and Older Parents. In *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems* (Seoul, Republic of Korea) (CHI '15). Association for Computing Machinery, New York, NY, USA, 713–716. doi:10.1145/2702123.2702462
- [2] Leila Homaean, Vanessa Duong, Keiko Katsuragawa, and James R. Wallace. 2025. Community Support for Aging in Place: A Computational Thematic Analysis of Discussions about Informal Care on Reddit. *Proc. ACM Hum.-Comput. Interact.* 9, 1, Article GROUP8 (Jan. 2025), 25 pages. doi:10.1145/3701187
- [3] Leila Homaean, Christina Li, Michelle Ma, Brigitte Lee, Keiko Katsuragawa, and James R. Wallace. in press. (Re-) Defining Boundaries in Informal Care: An Interview Study on the Perspectives of Aging Parents and Adult Children. *Proc. ACM Transactions on Computing for Healthcare* (Jan. in press).
- [4] Elizabeth D Mynatt, Masatomo Kobayashi, Alisha Pradhan, Niharika Mathur, John Vines, Katie Seaborn, Erin Buehler, Jenny Waycott, John Rudnik, Tamara Zubatiy, and Agata Rozga. 2025. Technology Mediated Caregiving For Older Adults Aging in Place. In *Proceedings of the Extended Abstracts of the CHI Conference on Human Factors in Computing Systems (CHI EA '25)*. Association for Computing Machinery, New York, NY, USA, Article 802, 7 pages. doi:10.1145/3706599.3706721