

# “I felt listened to”: Evaluating an AI-Powered Reflection Tool for Care Partners

JAZETTE JOHNSON, University of Michigan, United States

HIRA JAMSHED, University of Michigan, United States

RACHAEL ZUPPKE, University of Michigan, United States

AMANDA LEGGETT, Wayne State University, United States

EMILY MOWER PROVOST, University of Michigan, United States

ROBIN N. BREWER, University of Michigan, United States

This paper evaluates CareJournal, an AI-powered application on an Amazon Alexa Show designed to support care partners (i.e., older adult receivers and caregivers) in care reflection and communication. CareJournal aims to address challenges faced by care partners in articulating the needs of the care relationships. Through a four-week pilot study (N=14 care partner pairs) and a four-week field study (N=16 care partner pairs), we assessed the tool’s effectiveness in supporting reflection and generating AI summaries that capture the care partners’ intent. Our findings indicate that CareJournal is a beneficial tool for improving communication intention and focus. We draw upon the role of articulation work in care routines and discuss design implications for AI to support articulation through adaptive reflection tools based on diverse care dynamics and highlight ethical considerations in balancing AI assistance with human agency.

CCS Concepts: • **Human-centered computing** → **Human computer interaction (HCI)**; *Auditory feedback*; *Empirical studies in collaborative and social computing*; **Empirical studies in accessibility**.

Additional Key Words and Phrases: reflection, voice assistant, communication, genAI, AI, care partner, caregiver, care receiver, older adult

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## 1 Introduction

Older adults (ages 65+) continue to age-in-place rather than move to long-term care communities. In doing so, they often rely on caregivers for varying forms of support. These care partners, which refer to caregiver and care receiver dyads, engage in a collaborative relationship of responsibility sharing, decision making, and care management [11]. “Informal” or unpaid caregivers within the care partner relationship are often family members or friends who face significant challenges in managing care responsibilities while maintaining their own well-being [3]. Caring for older adults typically involves a network of individuals engaged in a wide range of activities, from assisting with daily tasks to

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Authors’ Contact Information: Jazette Johnson, University of Michigan, Ann Arbor, Michigan, United States; Hira Jamshed, University of Michigan, Ann Arbor, Michigan, United States; Rachael Zuppke, University of Michigan, Ann Arbor, Michigan, United States; Amanda Leggett, Wayne State University, Detroit, Michigan, United States; Emily Mower Provost, University of Michigan, Ann Arbor, Michigan, United States; Robin N. Brewer, University of Michigan, Ann Arbor, Michigan, United States.

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53 providing emotional support and delivering medically oriented care [6, 88]. The complexity of these care relationships  
54 and the varying nature of caregiving activities can create a unique set of interpersonal dynamics and challenges.

55 In this paper, we focus on family caregivers<sup>1</sup> who experience mental, emotional, financial, and physical strains,  
56 which are compounded by the often invisible nature of their efforts [4, 24, 39]. Older adult care receivers also experience  
57 many challenges in care, including dealing with conflicting emotions, difficulty asking for help, and loss of independence  
58 and autonomy [29, 45]. Both care partners may struggle to express their needs and feelings clearly [27] and experience  
59 misaligned expectations which can hinder communication, create emotional tensions, and negatively impact the quality  
60 of care [37, 81]. These challenges can come from the limited ability of care partners being able to articulate their  
61 thoughts and feelings due to balancing personal relationships. In this paper, we define articulation work as the act of  
62 care partners putting into words their feelings and needs. Ultimately, allowing for both parties to be heard.

63 Caregiving research often focuses on caregivers' challenges, management styles, and coping strategies [24, 53]. HCI  
64 researchers have addressed these challenges by designing tools to ensure physical safety, security, and monitoring daily  
65 activities for care receivers [24, 42, 54, 74]. However, these approaches have not adequately addressed the difficulties  
66 in articulating needs in care partner relationships, often neglecting the perspectives of care receivers. We argue  
67 that advancements in conversational AI technologies show potential for addressing tensions in articulation between  
68 caregivers and care receivers [23, 81]. Therefore we use this paper to investigate how AI tools can encourage care  
69 partner communication and support reflection in practice.

70 This research builds on our previous work [81] by exploring the potential of an AI-assisted reflection tool to support  
71 care relationships. Our prior work focused on formative needs gathering and prototype testing. In this paper, we focus  
72 on system implementation and evaluation through two primary research questions:

- 73 • RQ1: How can AI tools be designed to support articulation work in care partner relationships?
- 74 • RQ2: What effects do AI-based articulation tools have on care partners' relationships?

75 To address these questions, we developed and evaluated CareJournal, an Amazon Alexa skill designed to facilitate  
76 care conversations between older adult care receivers and family caregivers through guided reflections. CareJournal  
77 aims to improve communication by prompting care partners to articulate care needs by prompting care partners to  
78 complete daily reflections and share summaries of these reflections with their care partner.

79 We deployed the CareJournal skill<sup>2</sup> and conducted a pilot study and a field study in which care partners used  
80 CareJournal in their homes for four weeks. During the pilot study, we introduced the initial version of CareJournal to  
81 14 care partner pairs. Building on insights from the pilot study, we refined the system for the field study (FS), which  
82 involved 16 care partner pairs.

83 This paper contributes to the aging and accessibility communities by:

- 84 (1) Providing design insights for reflection tools that encourage need articulation among care partners,
- 85 (2) Examining the strengths and weaknesses of human-generated versus AI-generated summaries in care contexts,  
86 offering guidance for future AI-assisted care technologies, and
- 87 (3) Exploring how reflection tools can be adapted to different care relationship dynamics, including care networks.

88 These contributions have significant implications for designing technologies for aging that can support not only  
89 caregivers, but also older adult care receivers. By focusing on the potential of guided reflections and summaries, we aim  
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102 <sup>1</sup>We will use "caregiver" throughout the remainder of the paper as shorthand to refer to a family caregiver.

103 <sup>2</sup>An Alexa skill is an application on the Alexa device that allows users to perform tasks and interact with content and services using voice commands

105 to address the challenges of articulating needs, bridging communication gaps, and fostering mutual understanding  
106 between care partners.

107 The remainder of this paper is structured as follows: We first review related work in managing care relationships  
108 and technologies used in care to support relationships. We then describe our method, including CareJournal’s design  
109 and our field study approach. Next, we present our findings, focusing on the impact of prompt design (RQ1) and the  
110 impact of AI-generated summaries (RQ2). We conclude by discussing how AI has a role in technology for care and if it  
111 can adapt to varying care partner needs.  
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## 114 2 Related Work

### 115 2.1 Care Relationship Management

118 Research has shown that caring for older adults typically demands support from a network of people. Strauss et al.  
119 [88] considered the social organization involved in managing chronic care to be intricately linked to the “physiological  
120 unfolding of a patient’s disease” where “different illnesses involve different medical and nursing actions, different kinds  
121 of skills and other resources, a different parceling out of tasks among the workers (including perhaps, kin and the  
122 patient), and involving quite different relationships among workers” (p. 8). The subsequent work of Strauss and scholars  
123 suggested that without examining illness in the context in which it was lived or accounting for its complexities, modern  
124 societies would not be able to support and care for those with chronic illnesses [8, 28, 86]. Since then, researchers  
125 have found that the complexity of managing care-related work comes from the wide range of typical activities, like  
126 helping with daily living tasks (e.g., bathing, dressing, meal preparation, cleaning, shopping), providing emotional  
127 support, or delivering medically oriented care (e.g., checking vital signs, medication reminders, monitoring physical  
128 health) [6]. The transition toward in-home care for aging-in-place has called for further research beyond narrow dyads  
129 like patient-clinician [72, 86, 92] to include additional stakeholders (e.g., family members, friends or care partners)  
130 supplementing healthcare professionals who assist patients in clinical settings or professional caregivers in residential  
131 environments. Given this expansion, researchers have broadly studied the caregiver-care receiver dyad to highlight  
132 caregiver challenges and stress [18, 25, 53], disentangle tensions in care relationships [37], build effective interventions  
133 to support the varied care work [14, 54, 71, 74, 103], and re-conceptualize care work through critical reflection (e.g.,  
134 question conventional labels such as ‘informal caregivers’ [4], include perspectives of older adults as care receivers [41],  
135 and reflecting on the power structures that shape technologies in care work [47]).

141 Research focused on caregivers has primarily revolved around understanding the impact of caregiving on their lives,  
142 the different styles of care management, and their consequent coping strategies. For example, through interviews,  
143 Leggett et al. [53] identified that caregivers who had a shallow understanding of the illness partook in preventative  
144 actions to reduce negative outcomes (e.g., doing a task without confrontation) and frequently expressed anger or  
145 frustration. Previous research [e.g., [59], [69], [70]] argues that understanding such management style discrepancies is  
146 necessary to understand the caregiver’s and care receiver’s physical and emotional health. These styles are, in fact, a  
147 result of the complex physical, emotional, spiritual, existential, and financial costs caregivers face in care relationships  
148 [4, 24, 37, 39]. Caregivers then adopt multiple coping strategies to alleviate some of these burdens. For instance,  
149 caregivers use productivity tools to manage their personal lives, use blogs to process complex or hard feelings, or  
150 reflect on the care receiver’s circumstances to identify their unhealthy habits and exercise preventative measures in  
151 their own lives [24]. Caregivers also adopt positive mindsets, describing rewarding care experiences and an emotional  
152 connection with the care receiver that balances out and reconstructs the subjective burden of the caregiver [84]. Chen  
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157 et al. categorized the various aspects of wellness that caregivers aim to uphold in their daily lives as their physical,  
158 emotional, social, and reflective selves (ie, the process of self-reflection and developing new life perspectives) [24].  
159 However, the success of their wellness prioritization is mediated by the communication and relationship quality between  
160 the caregiver and care receiver [24, 89].  
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162 On the other hand, care receivers, including older adults, are not passive actors in care relationships. Researchers,  
163 designers, and policymakers must understand their perspectives to uncover the complexities of the caregiver-care  
164 receiver dyad and build effective interventions [20, 41, 47, 81]. To begin with, research shows that care receivers go  
165 through many conflicting emotions in care settings as they approach old age. For example, it can be difficult for older  
166 care receivers to ask for help as the emotion is associated with feelings of declining life quality and powerlessness [29].  
167 Care receivers are also forced to balance feelings of comfort and guilt when choosing to receive care from "close others"  
168 [51] or professional caregivers [33, 38, 61]. While close others offer comfort and security, professional caregivers relieve  
169 their loved ones from the harmful impacts of caregiving. Older adults, or care receivers, have also shared how receiving  
170 care can often lead to losing independence, autonomy, and confidence [58, 67]. To cope with these complexities, older  
171 adults partake in positive physical and mental health experiences, develop resiliency to accept care and support, and  
172 focus on cherishing supportive, empowering, and reciprocal relationships with relatives, friends, and professionals [45].  
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174 Notably, researchers have identified critical challenges that negatively impact care receivers and caregivers despite  
175 respective coping strategies. For instance, through a cross-generational study focusing on the cooperative nature of  
176 informal elderly caregiving, Gutierrez and Ochoa found that limited visibility of caregiving activities is a significant  
177 source of conflict within the families of informal caregivers and care receivers [39]. They conclude that information  
178 about the family members' formal and informal duties needs to be made explicit. Researchers argue that articulating  
179 such information helps align the expectations of primary caregivers, older adults receiving care, and other members  
180 of the family network [37, 44, 84]. However, older adult care receivers often struggle with balancing independence  
181 and support [58, 67], experiencing conflicting emotions such as guilt, loss of autonomy, and uncertainty about their  
182 role in their care plan [51]. While studies have discussed the emotional toll of caregiving, less is known about how  
183 older adult care receivers engage in care planning, express their needs, and assert agency in care partner relationships  
184 [58, 67]. Articulating needs and emotions remains a challenge in care relationships, as researchers argue how the  
185 lack of communication greatly contributes to tension within a caring relationship [27]. These challenges are further  
186 complicated by interaction timing, (geographic) distance, and caregiving styles [81]. In addition, research shows  
187 that people systematically underestimate a stranger's deeply social nature, assuming that the stranger will be more  
188 indifferent and uncaring in conversation than they actually are [46]. These miscalibrated expectations, especially when  
189 having an unrelated professional caregiver, can create a psychological barrier to conversations where care partners can  
190 articulate emotional tension, misunderstanding, and a heightened sense of burden [37, 42, 81]. Thus, researchers call for  
191 improving the communication skills of caregivers and older adult care receivers [37, 64] and a deeper understanding of  
192 the features of different caring relationships [55, 63, 81]. While existing tools help caregivers track tasks and reflect on  
193 their experiences, few studies center older adults' perspectives in care communication. CareJournal addresses these  
194 challenges by creating a shared space where older adult care receivers can engage in articulating their needs, support  
195 care planning, and decision-making, which can foster a more transparent caregiver-care receiver relationship.  
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## 204 2.2 Technology for Care Relationships

205 Researchers have investigated technology's potential to mitigate care challenges by supporting health, physical safety  
206 and security, education for caregivers, monitoring activities of daily living, and enhancing social communications  
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[24, 42, 54, 74, 78]. Digital interventions focused on caregiver well-being range from common technologies like telephones, video conferencing, and web-based information to ubiquitous technologies like embedded sensors and monitors for remote monitoring in smart homes [26, 57]. Research shows that interactive web resources and real-time interactive communication (via videoconferencing) were mostly used by caregivers because these supported quick and easy access to necessary information [101]. Regardless, researchers report that these digital interventions have an overall positive effect on supporting caregivers and their well-being [26, 57, 101]. Specifically, these interventions have improved caregiver outcomes in the following aspects: psychological burdens (e.g., decreased anxiety, depression, stress, irritation, and isolation), self-efficacy (e.g., improved confidence, resiliency, and comfort), caregiving skills (e.g., enhanced communication with the patient and helped manage symptoms), social support (increased social connection), improved problem-solving skills, and helped with decision-making [101].

Despite being developed to support care relationships, research shows that technology-based interventions also present new challenges. For example, Huber et al. [42] reported that older adults resist technologies because they are primarily concerned about technologies possibly replacing their interactions with family caregivers. Proctor et al. [79] further pointed out the need for more affordances in the design of assisted-living technologies, preventing caregivers from adapting these technologies to the receivers' needs. They observed members of the informal networks playing the critical role of adapting the technological devices (e.g., covering some buttons on a remote control with tape to make them inoperable) that the care receivers rely on for their day-to-day security and well-being. Care receivers are also seen to over-rely on technology, leading to concerns regarding independence, safety, and privacy [28, 78, 81]. While independence, autonomy, and self-reliance are desirable values for designing effective technology-based interventions, critics caution against integrating digital technologies that may depersonalize care in intimate relationships, reduce emotional attachment, and threaten older adults' privacy and autonomy [13, 95, 97]. As such, we use this paper to investigate how AI-powered technologies can be utilized by caregivers and receivers to strengthen care relationships while maintaining autonomy and privacy.

To further address challenges highlighted previously, researchers emphasize respecting care routines, bridging asymmetries between care partners, and understanding how technologies are collaboratively appropriated [39, 43, 62, 82]. Chen et al. [24] reason that care-related technologies should focus on articulation, "work that gets things back 'on track' in the face of the unexpected and modifies action to accommodate unanticipated contingencies," as it has been established as an important component of collaborative care [88]. Similarly, researchers argue that articulation work should be managed at the behavioral and system levels, where caregivers and receivers can be encouraged to articulate the issues they face in maintaining their own well-being [63, 101, 103]. However, it is difficult for caregivers to make these reflections actionable amidst attention to other care duties [24, 73, 82]. Thus, we argue that researchers need to design technologies according to caregivers' and care receivers' routines, facilitate need-based, task-based, and emotional articulation, and investigate how reflections impact the caregiver-care receiver relationship.

### 2.3 Conversational Technology in Care

This paper describes how we design and evaluate a user-detached [21] voice-based tool that encourages care partner communication through guided reflection. Research suggests that older adults commonly find voice technologies convenient and valuable because they are easy to use, seamlessly integrate into ongoing tasks, mitigate dexterity challenges, and foster independence [5, 15, 19, 48, 96]. Including touchscreens or visual displays further improves information consumption and daily engagement through interactive visual feedback [22]. In the context of care, researchers report that voice-based systems ease caregivers' information management and health communication

261 tasks, such as supporting documentation and care coordination, and that multi-modal systems help facilitate social  
262 interactions [7, 87, 91]. Relatedly, Piau et al. [74] found voice-activated devices to be the most desired technology for  
263 supporting care activities based on a survey consisting of approximately 400 caregivers. Additionally, older adult care  
264 receivers emphasize the potential for integrating voice into home-based care systems to reduce loneliness, retrieve  
265 health information, encourage healthy behaviors, provide entertainment, and remind them about urgent tasks or  
266 medications [6, 14, 21, 76].  
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268 However, research also shows that voice-based systems pose challenges for older adults. For instance, the systems can  
269 interrupt older adults if they speak too slowly and do not provide efficient error recovery mechanisms [10, 21, 77, 102].  
270 Conversational interactions often involve code-switching, a process whereby racially marginalized older adults shorten  
271 their sentences, increase volume, and hyper-articulate for accurate system interpretation [40]. Older adults also find  
272 that multi-modal interactions can decrease the efficiency of voice input or limit use cases, as such voice systems are  
273 often confined to a single space [21, 93]. Moreover, caregivers and care receivers have mixed sentiments regarding  
274 privacy and security concerns [7, 21, 36, 90]. Research shows that an incomplete understanding of the privacy and  
275 security implications of these systems often leads to older adults abandoning them [1, 17, 52, 77, 93].  
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277 Researchers reason that care receiver’s adoption of voice-based systems is related to the scaffolding provided by the  
278 caregiving network [65, 81, 103]. The term “scaffolding” describes human or technology-provided support, prompts,  
279 or guidance that helps individuals accomplish a particular task. In their paper, Zubatyy et al. [103] identified useful  
280 scaffolding interactions as populating calendars, setting alarms, and scheduling reminders. Care partners who took  
281 the time to set up such scaffolding found the voice system to be incredibly useful and described it as having a second  
282 partner helping them meet the needs of their care receivers. Based on voice-based systems strengths in supporting  
283 self-disclosure between older adults and their families or friends [68], we extend this definition of scaffolding in our  
284 prior work to investigate “conversational scaffolding” [81] and design CareJournal, an Amazon Alexa skill, to support  
285 structured and intentional care-related communication using prompts with care partners. Through some early prototype  
286 testing, we highlight the potential for conversational agents to facilitate reciprocal interactions between caregivers  
287 and receivers. This research responds to calls for systems that deepen communication and understanding within  
288 shifting relations [71] (such as those between the caregiver and receiver) while limiting additional burden on caregivers  
289 [75, 102]. Researchers also argue for AI’s ability to streamline tasks and question the utility of AI-enabled technologies  
290 in supporting care-related communication demands [7, 41, 54, 99]. Thus, considering research advocating for reflective  
291 practices in improving communication and relationships and the potential for conversational scaffolding [24, 46], we  
292 evaluate CareJournal’s role in context and how it impacts care relationships.  
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### 299 3 Methods

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301 Based on prior work calling for better communication mechanisms in care relationships, we developed and evaluated  
302 CareJournal as a result of prototype testing and feedback from older adults and their care partners [81].  
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#### 304 3.1 System Design

305 CareJournal is an Amazon Alexa skill designed to encourage care conversations between older adult care receivers  
306 and family caregivers. This skill prompts family caregivers and older adult care receivers to provide feedback about  
307 care experiences to each other by responding to three daily reflection questions. The responses to these questions  
308 are used to generate a summary of care-related concerns and suggestions. In this study, we chose to provide two  
309 types of summaries, including one written by a human and one written by generative AI, to explore the boundaries  
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of AI-generated content for care partner relationships. Once summaries were generated, they were sent to the care partner’s Alexa device twice a week, allowing them to choose which summary they wished to share with their care partner. The care partner was not told whether the summary was generated by a human or by generative AI. Below, we describe the prompt engineering and summary generation processes in more detail.

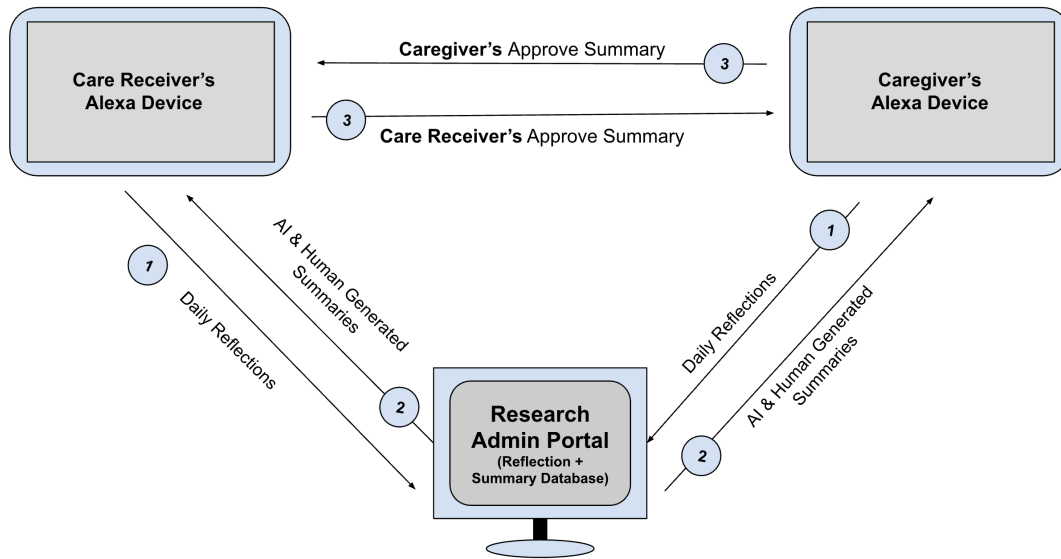


Fig. 1. Full System Flow Diagram: The image illustrates the communication flow within CareJournal, featuring three components: the care receiver’s Alexa device, the caregiver’s Alexa device, and the research admin portal which is the database that stores participant reflections and summaries). In Flow Stage One (denoted by a 1 in a blue circle), daily reflections are sent from the Alexa devices to the research admin portal. In Flow Stage Two, AI and human-generated summaries seeking approval are sent from the research admin portal to care partner Alexa devices. In Flow Stage Three, the approved summary is sent to the Alexa device of the other care partner.

**3.1.1 AI Care Summary Prompt: Prompt Engineering.** We used ChatGPT 3.5 to generate AI care summaries. We applied an iterative prompt engineering process to find the GPT prompt that would create the AI Care Summary that was natural in a conversational tone, personalized to the care partner, and concise. This process involved refining the language, tone, and structure of the GPT prompt.

The initial prompts such as, “What could be improved between caregivers and care receiver based on care receiver’s answers,” often produced lengthy AI care summaries (more than 400 words) with an overly formal tone, which was not suitable for the study as the AI care summaries were to be presented as a note from one care partner to another as if they were communicating together, following similar guidelines as the human written summaries.

We used this final GPT prompt throughout our study:

“Limit the summary to 100 words. Make a short informal summary from [care partner1] to [care partner2] that addresses [care partner2] as “you” and summarizes this week’s experiences and shares what could be improved between the caregiver and the care receiver based on the answers:”

This refined GPT prompt more frequently generated AI care summaries that effectively expressed the care partners’ needs and experiences within a 100-word limit, balancing information with a conversational tone. If the generated AI

summary did not follow the guidelines defined in the prompt rules as described above, the research team re-generated the summary.

*3.1.2 Human Care Summary Guidelines.* The research team developed guidelines for creating human-written care summaries. These summaries served two purposes: to complement those generated by AI and to provide a baseline for comparison. Two research team members crafted these summaries using care partners' reflections as source material. To maintain consistency across all human-written summaries, these two team members reviewed each summary before sending it to care partners for structure consistency and adherence to the team-established guidelines described below:

- The word count should be 100 words or less
- The conversation should use language that demonstrates a conversation from one care partner to another by using first-person language.
- The tone of the conversations should be casual and informal
- The feedback should be structured by starting with something positive, then discussing any critiques, and ending with something else positive or things to do moving forward.

These guidelines mirror the generative AI approach mentioned above by highlighting conciseness, personalization, and balanced feedback structures.

Both AI and human summaries were reviewed a final time by the first author to ensure accuracy with care partner reflections. The AI summaries were only edited if the reflections logged captured an inaccurate name through voice recognition.

## 3.2 CareJournal Evaluation

Using the CareJournal skill, we conducted a pilot study, followed by a four-week field study to understand how AI tools can be designed to support articulation work in care partner relationships and the effects it may have on care partner relationships. To support participants who did not own an Amazon Alexa device, we purchased and sent Echo Show 8 systems to all participants who needed them. Unlike the Echo Dot, which is solely a voice interface, the Echo Show incorporates a visual display to complement its voice capabilities. Although the CareJournal skill did not leverage the visual display, the research team intentionally chose the Echo Show 8 because it could support users with varying accessibility needs (e.g., hearing disabilities). CareJournal is also compliant with other Alexa devices and the Amazon Alexa mobile application.

Once participants received their Alexa device, the research team provided setup instructions for the Echo Show 8, including setting up an Amazon account, enabling accessibility features (captions, adaptive listening, screenreader), and explaining feature locations (e.g., mute, volume, etc.). During week one, the research team invited participants to become more acclimated to the device. At the end of week one, the research team sent participants an email inviting them to become a beta user for CareJournal and provided instructions about how to set up the skill. The setup included instructions for accepting the Beta user invitation, registering care partners as users, and a list of voice commands and explanations that they could use during the study. We also gave participants a phone number, managed by the first author, to call or text throughout the study to resolve any technical challenges.

*3.2.1 Pilot Study.* During this phase, participants only logged daily reflections. The CareJournal pilot flow consisted of three components: the care receiver's Alexa device, the caregiver's Alexa device, and the research admin portal (also



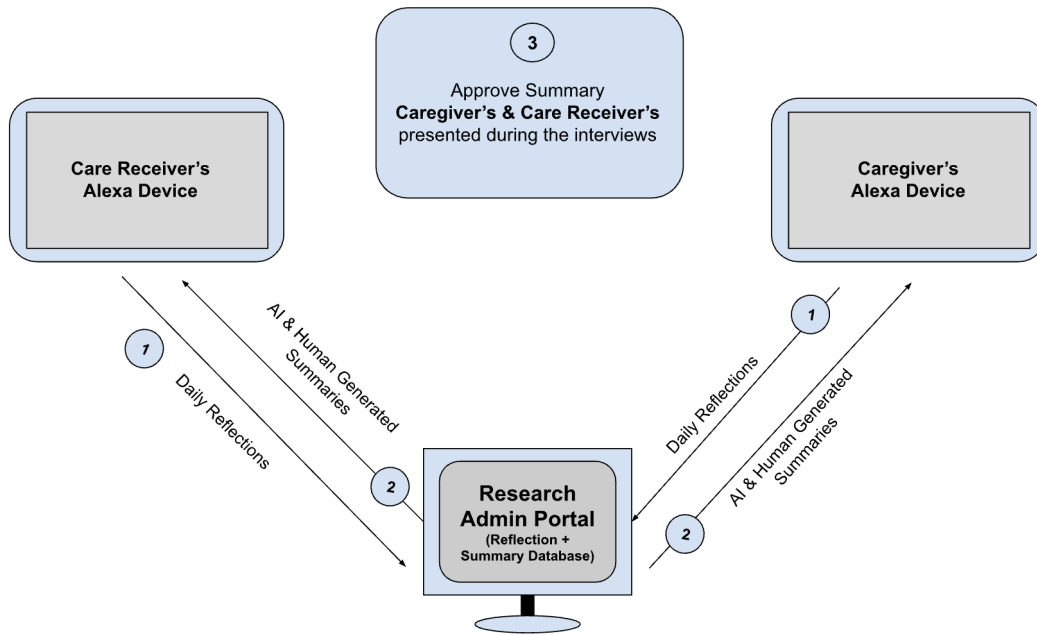


Fig. 2. Pilot Study: System Flow Diagram:

known as the summary and reflection database) see Figure 2. In Flow Stage One of communication, daily reflections were logged and sent from the Alexa device to the research admin portal (i.e., reflection and summary database).

As noted above, during week one, participants did not have access to the CareJournal skill. Instead, we asked them to get acclimated to their Alexa to mitigate the novelty effects of introducing a new device. In the following weeks (two through four), participants were instructed to complete daily reflections using the CareJournal skill, which consisted of the following three reflection questions: *Pilot Study Reflection Questions*:

- What did you like about the experiences that you had with your care partner today?
- Is there anything you wish you or your care partner had done differently today?
- Is there anything that you want to do the next time you see your partner?

Every Friday, Authors 1 and 3 gathered the reflections from the previous week to create the Human and AI summaries that were presented to participants during post-study interviews.

Building upon our concept testing phase [81], we retained the overall conversational flow and reflection prompts for the pilot study. The results of the pilot prompted us to update the daily reflection questions due to the high frequency of non-descriptive responses. Instead, we rephrased the reflection questions to be more open-ended in structure, allowing for more descriptive responses. We discuss these changes in detail in the Pilot Findings section.

**3.2.2 Field Study.** During the Field Study, we evaluated the full CareJournal system as presented in Figure 1. In this phase, participants logged daily reflections and were presented with two summaries, one human-written, and one AI-generated, to potentially send to their care partner. Participants were not informed of how either summary they

469 received was generated. Participants simply chose the summary they preferred to send to their care partner about  
470 their experiences over the past few days. Once summaries were selected, participants were also able to listen to the  
471 summaries they received from their care partner.  
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473 Similar to the pilot study, during week 1 care partners were instructed to use that week to get acclimation with  
474 their Alexa device, having no access to the CareJournal skill. During weeks two through four, participants logged daily  
475 reflections using the following three questions: *Field Study Questions*:  
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- 481 • What did you like about the experiences that you had with your care partner today?
- 482 • What would you have wanted to do differently today?
- 483 • What would you have wanted your care partner to do differently today?
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490 Every Tuesday and Thursday, Authors 1 and 3 collected reflections from the previous days and wrote human summaries  
491 following the established guidelines. They then reviewed each other's summaries for errors and quality. After completing  
492 the human summaries, Author 1 used the Research Portal to generate AI care summaries using ChatGPT 3.5 (see  
493 Table 1). This sequential process prevented AI-generated content from influencing the human-written summaries.  
494 Both summaries were created and then sent to participants through CareJournal at midnight (eastern timezone) on  
495 Wednesdays and Fridays, making them available on Alexa devices by morning. Participants listened to both versions  
496 and selected which summary to send to their care partner.  
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503 **3.2.3 Post-Study Interview.** At the end of the study, each care partner individually participated in a semi-structured  
504 Zoom interview. In an attempt to mitigate power imbalances, if care partners were co-located, we interviewed the older  
505 adult care receiver first and asked caregivers if they were comfortable stepping away. Once the care receiver completed  
506 their interview, we asked caregivers to return to the interview room. If care partners were not co-located, we used the  
507 Zoom breakout room feature as a waiting room for caregivers while the research team interviewed the older adult  
508 care receiver. Once the care receiver interview was complete, the research team invited the care receiver to leave the  
509 Zoom call to begin the caregiver interview. During some interviews, caregivers requested to stay either to help relay  
510 the question to the older adult care receiver due to a hearing disability or a language barrier.  
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512  
513 At the beginning of each interview, a research team member provided a structural overview of the interview,  
514 describing the type of questions that they could expect and addressing any questions. The post-interviews included  
515 questions about care partners' experiences using CareJournal, logging reflections, listening to summaries, and (if they  
516 participated in the pilot study) questions about their experiences that differed between the pilot and field studies.  
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Table 1. Daily Activity Calendar

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<b>Participant Activity</b>	Daily Reflection	Daily Reflection	Daily Reflection	Daily Reflection Summary Selection	Daily Reflection	Daily Reflection	Daily Reflection Summary Selection
<b>Researcher Duties</b>			Human and AI summary creation using reflections Friday - Monday			Human and AI summary creation using reflections Tuesday - Thursday	

### 3.3 Participants

We recruited participants after receiving approval from our university’s ethics board. We contacted participants who participated in the initial prototype testing [81]. We also shared the study flyer through email to local organizations’ listservs that offer monthly caregiver support groups and to older adult care receivers through a university recruitment pool (Research Match). To be eligible to participate, the care receiver needed to be 65 years of age or older and receive care-related support from a family caregiver (e.g., spouse, adult child). For a caregiver to be eligible to participate, they needed to be at least 18 years or older and provide unpaid assistance with daily tasks with the older adult care receiver. Both older adult care receivers and caregivers had to be eligible to participate in the study together and complete the consent process. Participants must also be fluent in both spoken and written English. During the study two care partner pairs (15AB and 16AB) reported not being native English speakers and 15A-CG also described having a speech impediment, both resulted in Alexa being unable to properly process the words said due to accent, so throughout the study they accommodated by using the Alexa mobile application to text their reflections.

**3.3.1 Pilot Study.** In the Pilot Study, we initially recruited 21 care partner pairs. Of the sample, 14 care partner pairs (age range = 54-95; avg age = 70; women = 18; men = 10) participated in the study (see Table 2). Two of the 14 care partner pairs did not complete the final interview due to health concerns or changes to in-home accommodations. Of the 14 care partner pairs that participated in the Pilot Study, 13 care partner pairs previously participated in the concept testing presented in our previous work [81]. For participating in the study, participants received \$140 per person.

**3.3.2 Field Study.** During the Field Study, we employed the same recruiting techniques as described above. We recruited 16 care partner pairs (age range: 19 - 97; average age = 68; women = 25; men = 7), 8 were care partner dyads from the Pilot Study, and the other 8 were newly recruited participants. 7 care partner dyads were not co-located (i.e., did not live in the same home) at the time of study, one care partner dyad lived in the same house, but the older adult care receiver was reported as being bedridden, and the other 8 care partner dyads were co-located. One care partner did not complete a post-study interview. Of the 16 care partner pairs that participated in the Field Study, 9 of these care partner pairs previously participated in the concept testing presented in our previous work [81]. Participants were

573 compensated based on the number of activities completed, including daily reflections logged, choosing a summary,  
574 and completing the interview. Completion of all activities resulted in \$155 per person, which was sent to participants  
575 through a check or a gift card.  
576

577 3.3.3 *User Interaction Flow*. When participants were ready to interact with CareJournal for the day, they used the  
578 following command to trigger the skill "Open My CareJournal" (*pilot study*) or "Open Care Reflection" (*field study*)<sup>3</sup>.  
579 Based on the activity calendar (see Table 1), the user interaction flow differed by day. On Sunday, Monday, Tuesday,  
580 Thursday, and Friday, the flow was as follows:  
581

- 582 • CareJournal Alexa: Welcome to your CareJournal. Please say one if you are a caregiver, and say two if you are a  
583 care receiver.
- 584 • Participant: *\*responds to CareJournal with either one or two\**
- 585 • CareJournal Alexa: Hello *\*participant name\** Would you like to record your reflection?  
586
- 587 • Participant: *\*Participant responded yes or no\**
- 588 • CareJournal Alexa: What did you like about the experiences that you had with your care partner today?  
589
- 590 • Participant: *\*verbal response to Alexa device\**
- 591 • CareJournal Alexa: What would you have wanted to do differently today?  
592
- 593 • Participant: *\*verbal response to Alexa device\**
- 594 • CareJournal Alexa: What would you have wanted your care partner to do differently today?  
595
- 596 • Participant: *\*verbal response to Alexa device\**
- 597 • CareJournal Alexa: Would you like us to share a summary of your reflections with your caregiver? It would  
598 help them understand your experiences and expectations to improve care.
- 599 • Participant: *\*Participant responses yes or no\** If a participant responds no, the summary is saved in the database,  
600 but they are labeled not to include them in the summary.  
601

602 On Wednesdays and Saturdays, the above user flow is adjusted with Alexa beginning with "*<Name>, you have two*  
603 *summaries to review, would you like to review them?*". If the participant responds with "yes", then Alexa will say "*Which*  
604 *summary would you like to send to <care partner name>? Option 1: \*Alexa Reads AI or Human summary\* or Option 2:*  
605 *\*Alexa Reads AI or Human summary\*. Say 1 if you would like to send the first summary or two if you would like to send*  
606 *the second summary.*" The participant responds, then the system either directs them to listen to the summary from their  
607 care partner or continue to log their reflection for that day.  
608

609 Table 2. Participant Demographic  
610

611 ID	612 Sex (F/M)	613 Age	614 Study Participation	615 Relationship Dynamic	616 Living Together
617 2A-CG	F	65	Pilot	Adult Child	No
618 2B-CR	F	95	Pilot	Parent	No
619 3A-CG	F	66	Pilot	undetermined	Yes
620 3B-CR	M	74	Pilot	undetermined	Yes

621  
622 <sup>3</sup>We changed the skill comment during the field study because care partners had a hard time opening with the previous command. Many had to make  
623 distinct pauses or their command would open another unrelated skill.  
624

Table 2 continued from previous page

ID	Sex (F/M)	Age	Study Participation	Relationship Dynamic	Living Together
4A-CG	F	54	Pilot	undetermined	Yes, moved away after week 3
4B-CR	F	68	Pilot	undetermined	Yes
5A-CG	F	71	Pilot	Spouse	Yes
5B-CR	M	80	Pilot	Spouse	Yes
6A-CG	M	62	Pilot	Adult Child	Yes
6B-CR	M	88	Pilot	Parent	Yes
13A-CG	F	50	Pilot	Adult Child	No
13B-CR	F	77	Pilot	Parent	No
1A - CG	F	54	Pilot & Field Study	Adult Child	No
1B- CR	F	76	Pilot & Field Study	Parent	No
8A-CG	F	80	Pilot & Field Study	Spouse	Yes
8B-CR	M	82	Pilot & Field Study	Spouse	Yes
10A-CG	F	72	Pilot & Field Study	Spouse	Yes
10B-CR	M	75	Pilot & Field Study	Spouse	Yes
14A-CG	F	45	Pilot & Field Study	Adult Child	Yes
14B-CR	F	76	Pilot & Field Study	Parent	Yes
15A-CG	F	38	Pilot & Field Study	Adult Child	Yes
15B-CR	M	79	Pilot & Field Study	Parent	Yes
16A-CG	M	42	Pilot & Field Study	Adult Child	Yes
16B-CR	F	70	Pilot & Field Study	Parent	Yes
17A-CG	F	74	Pilot & Field Study	Spouse	Yes

Table 2 continued from previous page

ID	Sex (F/M)	Age	Study Participation	Relationship Dynamic	Living Together
17B-CR	M	84	Pilot & Field Study	Spouse	Yes
18A-CG	F	80	Pilot & Field Study	Spouse	Yes
18B-CR	M	83	Pilot & Field Study	Spouse	Yes
11A-CG	F	45	Field Study	Adult Child	No
11B-CR	F	75	Field Study	Parent	No
12A-CG	F	43	Field Study	Adult Child	No
12B-CR	F	72	Field Study	Parent	No
20A-CG	F	56	Field Study	Adult Child	No
20B-CR	F	85	Field Study	Parent	No
21A-CG	M	73	Field Study	Spouse	Yes
21B-CR	F	71	Field Study	Spouse	Yes
22A-CG	F	66	Field Study	Sibling	No
22B-CR	F	72	Field Study	Sibling	No
24A-CG	F	66	Field Study	Adult Child	No
24B-CR	F	97	Field Study	Parent	No
25A-CG	F	19	Field Study	Adult Grandchild	No
25B-CR	F	65	Field Study	Grandparent	No
27A-CG	F	59	Field Study	Adult Child	No
27B-CR	F	89	Field Study	Parent	No

### 3.4 Data Analysis

Our analysis approach consisted of qualitative methods to gain a comprehensive understanding of the impact CareJournal had on care partnerships.

**3.4.1 Reflections. Pilot Study:** Our analysis for the pilot study focused on the daily reflection responses logged by participants. A total of 653 descriptive reflections were logged, excluding one-word responses such as ‘yes’ or ‘no’. We conducted a thematic analysis [16] on participant reflections. We used Microsoft Excel to organize and categorize reflections. At the end of the study, Authors 1 and 3 independently read through the reflections to familiarize themselves with the data. Initial codes were provided for each reflection. We reviewed the reflections for aligning themes throughout the set of reflections and grouped related codes to form broader themes. Authors 1 and 3 met regularly to discuss and refine the codebook (see Table 3 and Table 4).

**Field Study:** Our analysis of reflection in the Field Study built on the codes from the Pilot Study while remaining open to new insights. We collected 1259 descriptive reflections, again excluding one-word responses. We followed a similar thematic analysis [16] approach used in the Pilot study. Our approach combined inductive and deductive coding. Weekly we began the deductive process by applying the codes of the Pilot Study to the reflections logged in the Field Study. We then conducted inductive coding, which allowed us to remain attentive to the new themes from the Field Study. Authors 1 and 3 coded a subset of the reflections and met regularly to discuss and refine the codebook.

**3.4.2 Care Summaries - Field Study.** We analyzed the summaries descriptively. To do so, we quantified the total number of care summaries selected and categorized them by care partner choice (AI or human-generated) and summary choice by care partner type (older adult care receiver, caregiver). This allowed us to understand the distribution of care summaries across these themes.

**3.4.3 Interview.** We conducted a thematic analysis [16]. This allowed for a flexible examination of our data. We began the process by reading and re-reading the interview transcripts to gain familiarity with the content. Following this, we conducted open coding, where we identified and labeled important statements with the data. These initial codes were then organized into potential themes, where we constantly referred back to our RQ's to ensure relevance and focus. Throughout this process, we continuously referred back to transcripts to verify that themes accurately represented the participants' experiences and perspectives.

## 4 Findings: Pilot

During the Pilot Study, we evaluated how CareJournal encourages articulation through self-reflection and expression of needs. The following subsections describe the frequency and types of reflections logged in an attempt to articulate feelings and needs. Ultimately, suggesting improvements for CareJournal to elicit greater opportunities for articulation by improving the reflection questions.

### 4.1 Reflections

Care partners logged a total of 894 reflections, with older adult care receivers contributing 498 reflections (weekly average: 36) and caregivers contributing 396 reflections (weekly average: 28). However, 275 ( $N=166_{CG}$ ;  $N=109_{CR}$ ) of these reflections were one-word answers (i.e., "yes" or "no") and 619 of these reflections (332 from caregivers and 287 from older adult care receivers) were descriptive. We highlight the response type because we anticipated receiving primarily descriptive reflections, as these are more useful as input for AI-generated summaries to help communicate needs to care partners.

The types of reflections logged commonly articulated the need for more meaningful connections, and recalling mood, behaviors, weekly activities, and conversations.

**4.1.1 Articulating Connections.** A common theme from care partner reflections was a desire to increase connection and shared time with their loved ones (See Table 3 for example reflections). Care partners logged reflections that expressed a lack of connection ( $N=3_{CG}$ ,  $N=5_{CR}$ ) and quality time ( $N=13_{CG}$ ,  $14_{CR}$ ) due to busy schedules with work and medical appointments. Care partners expressed wanting to spend valuable time together.

Table 3. Reflection Theme: Need For Connection

Themes	Pilot Examples
<b>Lack of Connection</b>	CG: it would have been nice to spend more time with him I was away a lot of the day -17A-CG
	CR: I didn't get to see [14A] very much today because there was something important going on in the household -14B-CR
<b>Quality Time</b>	CG: just wanna have a good time together -8A-CG
	CR: wanna watch Netflix and enjoy her company -8B-CR
<b>Physical Touch</b>	CG: yeah snuggle up -17A-CG
	CR: give her a hug-13B-CR
<b>Through Conversation</b>	CG: yes I wanted to talk to her and understand what she wants for the day -16A-CG
	CR: I wish we could schedule time to talk in a non-rough manner-14B-CR

4.1.2 *Recalling Activities & Mood.* Caregivers and care receivers frequently reflected on personal activities such as previous conversations, events attended, shopping, and shows watched (N=44<sub>CG</sub>; N=27<sub>CR</sub> (see Table 4). Moods and behaviors were also commonly recalled, with caregivers often remarking on the positive or negative emotions or changes in the behavior of the older adult care receiver.

Table 4. Reflection Theme: Recalling Activities &amp; Moods

	Example
<b>Mood &amp; Behavior</b>	CG: mother was upbeat - G1-2A-W1
	CR: she was very helpful-G1-1B-W2
<b>Personal Activities</b>	CG: we were able to sleep in later and went out for a nice lunch - G2-8A-W2
	CR: it went real well he cooked me a steak we got a long good we went and visit my cousin the whole day was good-G1-6B-W3
<b>Medical/ Health Conditions</b>	CG: no because [3B] is sick right now - G2-3A-W1
	CR: he's sick today - G2-16B-W2
<b>Care Activities</b>	CG: mom and I went over some business affairs and came to a good decision-G1-2A-W2
	CR: well we went and I had some eye surgery and she was there to assist and help me remember the things that I needed to tell them also to help me get my prescriptions-G1-5B-W3



Table 4 continued from previous page

	Example
Positive Conversations	CG: I like that we chatted and visited and talked about our events yesterday-G2-8A-W1
	CR: I like that she said goodbye when she was leaving - G2-14B-W2

## 4.2 Summaries

When understanding the types of summaries (e.g., Human or AI-generated) that articulated the needs of care partners, we found that participants showed a preference for human-generated summaries (N=37). However, AI-generated summaries were also frequently selected (N=25) (see Figure 3). Additionally, there were eight instances where participants could not distinguish between the two, citing the similarities between the human-written and AI-generated care summaries.

Table 5 shows an example of the responses from an older adult care receiver and the summaries generated based on those weekly reflection responses. During the pilot study we observed that much of the reflection responses were one-word answers, which made it difficult to write in-depth Human summaries. For instance, in this example in Table 5, every day the older adult care receiver provided the response of "yes" to the question 'Is there anything that you want to do the next time you see your care partner?' Such brief responses limited the summaries the human writers could produce, while also not providing context to their care partners about desired activities or changes. These brief responses from care partners were the motivation for revising the questions in a way that probed for more in-depth and detailed responses. Table 7 gives a comparison to 5 of how the participants' reflection responses changed in the field study by producing more descriptive responses. We discuss this comparison further in section 5.1.2.

Table 5. Pilot Reflection Response Example

<b>Pilot Study – Week 2 - Participant 16B-CR</b>	
Participant 16B-CR	
Q1: What did you like about the experiences that you had with your care partner today?	
Day 1: excellent	
Day 2: good	
Day 3: very good	
Day 4: excellent	
Day 5: good	
Day 6: very good	
Q2: Is there anything you wish you or your care partner had done differently today?	
Day 1: dancing	
Day 2: you must happy today	
Day 3: try to understand	
Day 4: he's hiding	
Day 5: he's sick today	
Day 6: yes	
Q3: Is there anything that you want to do the next time you see your partner?	
Day 1: yes	
Day 2: yes	
Day 3: yes	
Day 4: yes	
Day 5: yes	
Day 6: yes	
<b>Human Generated Summary</b>	<b>AI Generated Summary</b>
<p><b><i>SELECTED TO SEND TO CAREGIVER</i></b></p> <p><b><i>This past week was very good. When we see each other again there are things that I would like to do with you.</i></b></p>	<p>&lt;16A-CG&gt;, this week's experiences were a mix. Some moments were excellent, very good, and good. However, there were also times when you seemed to be hiding or not understanding. I hope you're happy next time because you were sick today. Also, I'd love to dance with you next time. Looking forward to seeing you again! Yes, yes, yes!</p>

### 4.3 Pilot Study Reflection

The pilot study revealed both promising findings and areas for improvement in encouraging articulation through self-reflection and expression of needs among care partners. While participants logged many reflections (N=894) demonstrating engagement with the tool, the abundance of one-word responses, rather than descriptive responses, negatively impacted the summary response quality, highlighting the need for more thought-provoking reflection prompts. Further, emerging themes focused on wanting to seek deeper connection and quality time showed the importance of addressing emotional needs in care partner relationships. Additionally, there was a slight preference for human-generated content (see Figure 3). These insights informed the field study, where we aimed to address the identified limitations in reflection questions. By expanding the research for the field study, we sought to gain further understanding of how CareJournal could effectively support need articulation and communication between care partners, while also exploring the broader question of: What effects do AI-based articulation tools have on care partners' relationships?

## 5 Findings: Field Study

### 5.1 CareJournal Usage

**5.1.1 Reflections.** In our evaluation, we gathered log data of participants' CareJournal use, which included daily reflections between older adult care receivers and their caregivers and summaries shared with care partners. During the Field Study, we made improvements to the system based on data from the Pilot study and increased the number of care partner dyads. As described in the methods section, care reflection questions were changed in the field study to promote more descriptive answers. These changes led to an increase in usage, with care partners logging a total of 1,413 reflections. Older adult care receivers created 660 (weekly average: 41) reflections, while caregivers created 753 (weekly average: 47) reflections (see Table 6). Additionally, by modifying the reflection prompts, we observed a decrease in non-descriptive responses, with only 176 (12.46%) falling into this category, compared to 275 (31%) in the pilot study. For example, during the pilot study, older adult care receiver 16B-CR's responses were brief, commonly less than three words (as seen in Table 5). In contrast, during the field study, 16B-CR's responses offered more detailed responses that provided rich insights into their experiences and desired changes (Table 7). Instead of one-word responses, 16B-CR began sharing specific feedback, such as *"would have been helpful to know beforehand how long that we would be exploring so that I could have been more organized about food preparation."* This type of detailed response allowed caregivers to receive valuable insights into how to better maintain routines and allowed the older adult care receiver the ability to express their needs in detail. Care partners like 24A even described the helpfulness of having open-ended care reflection questions:

*"Yeah, I thought they were open-ended enough where you could get detailed, but open enough that you could just be a little general about things. I thought the questions was good."*—24A-CG

This shift highlights the importance of thoughtful prompt design in eliciting more substantive and detailed responses.

Table 6. Reflection Frequency by Care Partner Type

	Total Reflections	Reflections from Care Receivers	Reflections from Caregivers
<b>Field Study</b>	1413	660	753

Table 7. Field Study Reflections &amp; Summary Examples

Field Study – Week 2 - Participant 16B-CR
Q1: What did you like about the experiences that you had with your care partner today?
Day 1: it was a good day today with loving memories
Day 2: I loved the live concert experience
Day 3: I am thankful he drove me to my friend’s death anniversary
Day 4: we relaxed
Q2: What would you have wanted to do differently today?
Day 1: to be more organized about food
Day 2: I would have liked to do some home chores and plan for the week but also enjoyed the outing though
Day 3: wish I had more time at the place
Day 4: it’s good to have a relaxing day with a busy week
Q3: What would you have wanted your care partner to do differently today?
Day 1: would have been helpful to know beforehand how long that we would be exploring so that I could have been more organized about food preparation
Day 2: have a combination of the outing and also chores
Day 3: if it didn’t rain so we didn’t have to take a long time to drive
Day 4: to not be always busy but to have a holiday once in a while

5.1.2 *Care Summaries.* In our prior work, older adults [81] expressed skepticism of AI’s ability to create a good summary. However, we found that there were no observable differences between participants choosing the human-generated care summary (N=60) over the AI-generated care summary (N=62) (as seen in Figure 3). These findings challenge the previously expressed skepticism by showing the quality of AI-generated content has the potential to meet the needs of older adult care receivers and their care partners.

We found that participants favored care summaries that contained detailed content relevant to their shared experiences, had a conversational flow, accurately represented care partners’ words and meanings, and were written in an emotional tone that resonated with their feelings and communication styles.

**Detailed Content:** Older adult care receivers primarily described selecting summaries to send to their caregivers that included more detail and relevance to their shared experiences with their care partner. Care receivers valued comprehensiveness in the summaries. For instance, 22B-CR explained:

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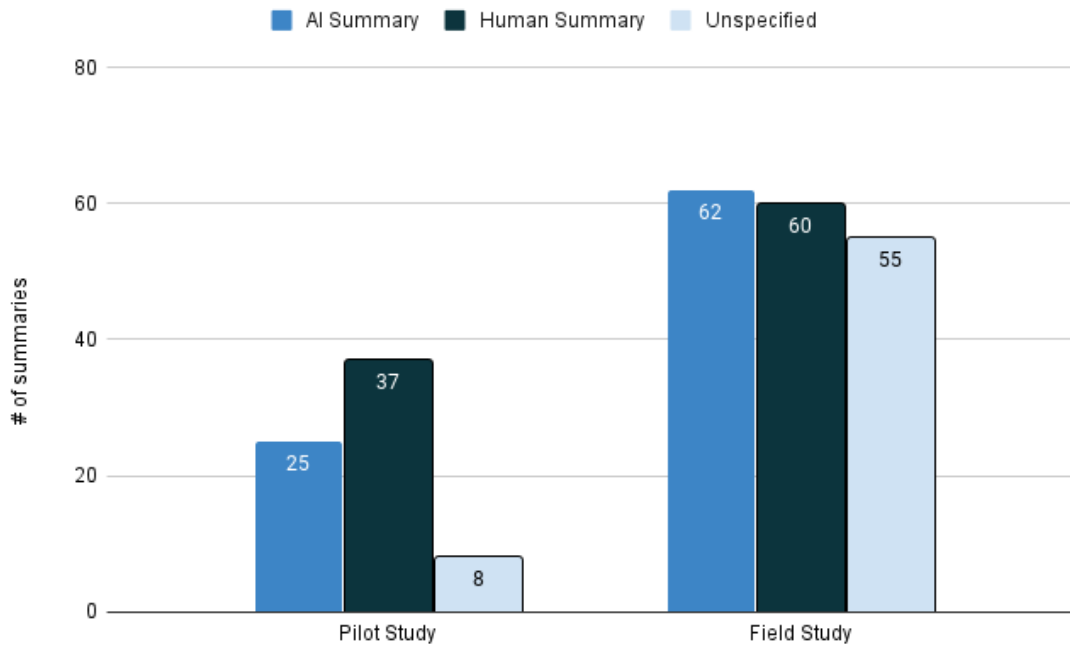


Fig. 3. Care Partner preferences between AI-Generated and Human-Written summaries. Summaries were categorized as unspecified when participants did not choose a summary for that week or requested that their summary not be shared with their care partner

*'On a couple of occasions, maybe two or three. The summary that I did not choose was because it did not state everything that the other summary did. So, if one summary was more conclusive of what we had talked about, that would be the one that I would choose.'*—22B-CR

When given the choice between two summaries, 22B-CR chose the content that provided more detail about things she discussed with her care partner. Table 8 presents the human-written and AI-generated care summary that 22B-CR chose to send to her caregiver during week two of the Field Study. Despite the similarities in content between the two care summaries, 22B-CR selected the AI-generated care summary for her caregiver. The AI-generated summary showed more expressions of gratitude and satisfaction, such as "Today was perfect, and I appreciate the information you shared and the resources you gave me.", which was not fully expressed in the human-written summary.

Table 8. Detailed Content Example

Participant 22B-CR	
Human Generated Summary	AI Generated Summary

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<p>These past few days I liked the article you suggested on how to prevent being a victim of scams. I also enjoyed the discussion we had on food and good and bad cholesterol. I wish I had a little more time to read other articles about scams, but I really appreciated the resource you gave me. You listened and gave me good suggestions. Our days together were good and the information we shared was timely.</p>	<p><b>SELECTED TO SEND TO CAREGIVER</b></p> <p><i>Hi 22A-CG, I really enjoyed today's experiences with you. I liked learning about scam artists and discussing good and bad cholesterol. The article you suggested on preventing scams was helpful. I wouldn't have done anything differently today; it was such a beautiful day and I wish I had more time to read other articles. Overall, you did a good job listening and giving suggestions. Today was perfect, and I appreciate the information you shared and the resources you gave me. Thanks, 22B_CR</i></p>
--	--

**Flow & Accuracy:** Participants also favored summaries that felt natural and accurately reflected their intended messages conveyed through their self-reflection. For instance, one caregiver describes,

*'it's more with the flow and making sure that it's expressing really what I wanted to say. That's a big thing. So you want to make sure that what you really said is not lost when it's been compiled.'*—10A-CG

However, there were instances where the AI tool generated inaccurate care summaries, which participants found frustrating and misleading. For example, 20A-CG described how one of the summaries she had to choose from included more information than she wrote in her reflection:

*'There were times when I would listen to my summary and it was talking about things I didn't even do. One was wound care or something. I wrote it down, but it's at home. But stuff like that, it did get a few of those things wrong. So it must just be the way that it's perceiving our voice or the way we're talking.'*—20A-CG

Table 9 shows the summaries she chose, but the AI-generated summary was the summary she described in the previous quote. When we compared the details of the AI summary to the reflections logged there was no instance of 20A-CG mentioning a need for a 'wound nurse to come.' This presents a flaw in AI generation, causing AI hallucinations, where the AI gives persuasive, yet inaccurate or misleading responses [2, 9]. This emphasizes the need to continue to incorporate humans in the loop when designing AI-powered reflection tools. We discuss this further in the Discussion section.

Table 9. Flow &amp; Accuracy Example

Participant 20A-CG	
Human Generated Summary	AI Generated Summary
<p><b>SELECTED TO SEND TO OLDER ADULT CARE RECEIVER</b></p> <p><i>&lt;20B-CR&gt;these past few days it was great to that we were about to get outside and get a lot of house tours done. I would like to continue to spend a little more time outside. I also need to get the medications in order. &lt;20B-CR&gt;let's work on you getting a little more exercise in by taking a walk outside.</i></p>	<p>Today was a great day with &lt;20A-CG&gt;. We were able to go outside, she was engaged with the nurses, and seemed happy and healthy. We also got a lot of house tours done. One thing I would have wanted to do differently is to spend more time outside and play with the echo device. I also wanted the wound nurse to come and for the medications to be in order. As for &lt;20B-CR&gt;, I would have liked her to do a little more exercise and be more responsive to the nurses. A little more activity would be good.</p>

**Emotional Tone:** Summaries with an emotional or personal tone were often preferred over more formal summaries. Participants valued directness in the summaries, as it aligned with their typical conversational communication styles. The summary's tone influenced their choices based on how well it resonated with their feelings at the time. Some participants considered how a summary might make the older adult care receiver feel, opting for a more positive framing if they thought a particular phrasing could elicit a negative response. For example, 15A-CG mentioned how many of her daily reflections may have been negative, but she mentioned that she ultimately wanted the summary to be positive, which we show in Table 10:

*'I had so much negativity going on when I was giving my reflections. But I wanted something positive to be heard from my dad, from me. So I think that's what I was looking for in picking those type of summary'*–15A-CG

In this example, the human summary, which participant 15A-CG sent to their care partner, shows more consideration for the older adult care receiver's feelings and takes a more proactive stance in finding solutions. While the AI summary conveyed similar information, it did so in a more detached and less emotionally sensitive manner.

Table 10. Emotional Example

Human Generated Summary	AI Generated Summary
<p><b>SELECTED TO SEND TO OLDER ADULT CARE RECEIVER</b></p> <p><i>A few day this week you were in a good mood, I would not have wanted anything to go differently on those days. However, on other days you were acting silly. It would be helpful if you were less agitated and instead happier. I will try to find ways to make you calmer. I will try playing some Sri lanken music.</i></p>	<p>Hey 20B-CR, this week’s experiences were not the best. You were acting silly and not cooperating. I would have liked to make you calmer, maybe by playing some Sri Lankan music. Overall, I wouldn’t want much to be different, except for you to be less agitated and happier.</p>

## 5.2 CareJournal Areas of Impact

In the previous section, we described care partner reflection content and summary choices. In this section, we delve deeper into *how* these types of reflections impacted care partner *relationships* through strengthening connections and creating space for recollection and articulating needs.

**5.2.1 Strengthening Care Partner Connection.** Our analysis of interviews and daily reflections revealed that CareJournal enabled care partners to express their desire for stronger connections, fostered more focused and intentional communication, and enhanced the awareness of each other’s needs by facilitating the articulation of wants and needs.

**Need for Connection through Quality Time & Meaningful Interactions:** Through analysis of reflections, we found that care partners consistently expressed a desire to increase connection and share time with their loved ones. They frequently logged reflections about lacking connection on a specific day (N=16<sub>CG</sub>, N=7<sub>CR</sub>) and quality time due (N= 12<sub>CG</sub>; N=29<sub>CR</sub>) to busy schedules with work and medical appointments. Overall, care partners expressed wanting to spend valuable time together. Some care partners, primarily older adult care receivers, also expressed ways they wanted to strengthen connections through physical touch (e.g., kisses and hugs) (N=0<sub>CG</sub>; N=5<sub>CR</sub>). Others emphasized conversations (N=8<sub>CG</sub>; N=7<sub>CR</sub>), describing their wish to tell their care partner they love them, ask questions, and share information about each other’s day and needs (Table 11). These reflections highlight the need to provide caregivers with tools and support systems that facilitate meaningful engagement, communication, and togetherness with their loved ones. This shows that CareJournal served as a communication tool that helped older adult care receivers articulate emotional and relational needs that may have otherwise gone unspoken, given that they expressed higher numbers of expressions about a need for quality time and physical connection than caregivers.



Table 11. Reflection Theme: Connections

<u>Themes</u>	<u>Examples</u>
<b>Lack of Connection</b>	CG: I didn't see much of [8B-CR] today because he had dialysis I missed him –8A-CG
	CR: well they were limited because we're both very busy and I was out in about –18B-CR
<b>Quality Time</b>	CG: yes to spend more time to understand the thoughts and feelings of him –15A-CG
	CR: spend less time with sleep and more time with [17A] –17B-CR
<b>Physical Touch</b>	CR: physical affection I miss it –21B-CR
<b>Through Conversation</b>	CG: I would have like to talk to you more–14A-CG
	CR: I would have wanted to have more time with her and talk over my health care–1B-CR

**Focused Connection:** During separate interviews, 22A-CG and 22B-CR shared how logging reflections daily using CareJournal allowed them to focus their conversations and be more intentional with their relationship.

*‘I think it made us, as I mentioned before, focus on things that were more important and prioritize and look at it in an intentional fashion.’– 22B-CR*

While this dyad maintained frequent conversations prior to using CareJournal, with 22B-CR noting that they ‘talk about so many different things.’ However, there was an imbalance in their communication as 22B-CR described herself as more talkative than her caregiver. CareJournal brought a balance to their interactions, with 22B-CR noting that she felt like she was, ‘limiting her <22A-CG> because I am the talker and she’s the listener. So, it balanced it out a little bit for me.’ Through CareJournal’s reflective design, 22A-CG and 22B-CR found new ways to deepen their relationship. It enabled them to document and revisit important conversations that previously often got buried in one conversation, while it helped them dive deeper into topics that matter to the care receiver. CareJournal changed their frequent casual conversations into opportunities for deeper understanding and connection.

**Improved Awareness of Needs:** CareJournal contributed to the awareness of needs between older adult care receivers and caregivers. For example, care receivers were able to inform their caregiver of when they wanted to buy items or complete tasks within their home. For example, 25A-CG mentioned how using CareJournal with her grandmother made her aware of other tasks that her grandmother needed that 25A-CG commonly overlooked, but 25B-CR described needing support with:

*“25B-CR needed help in the back of her patio. I don’t usually go out there ... That was nice to know that she needed help organizing. Last week I was able to throw away an old bookshelf she had put out there. So stuff like that, things that I overlook”–25A-CG*

This heightened awareness was also observed through reflections and confirmed through interviews with care partners. Throughout the study, 14A-CG made reflections requesting 14B-CR to be respectful of her work schedule, while 14B-CR asked that 14A-CG notify her when leaving the house and to spend time together. 14A-CG mentioned:

1301 *I do feel like communications have been calmer ... I think that communication has been a little easier. And*  
1302 *I've noticed things like before, I might get an email or I might get a phone call with a voicemail followed up*  
1303 *by a text, followed up by an email, and I really haven't seen as much of that over this past month.'*–14A-CG  
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1311 14B-CR expressed how this awareness of need resulted in improvement in communication, which positively impacted  
1312 her because she felt listened to and felt that her feelings had value.:

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1319 *'So 14A-CG is very, very, very busy. She has a lot of responsibilities, and I'm stuck in bed. When some of the*  
1320 *summaries pointed out specific things that I had done or held back from doing and how she appreciated*  
1321 *that, that made me feel really good. I feel this has helped a lot with our communication.'* –14B-CR.  
1322

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1329 CareJournal served as an 'intermediary' that highlighted potential changes in the care relationship and positively  
1330 impacted routine communication between care partners. This was impactful for older adult care receivers, as it provided  
1331 them with a structured way to voice their needs and feel validated in their care relationship.  
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1338 **5.2.2 Recalling Activities & Moods.** Another prominent theme from reflections was articulation, where care partners  
1339 documented various conversations, activities, moods, and behaviors of their care partner.

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1345 In the field study, we saw there was a great emphasis on recalling personal activities (N=76<sub>CG</sub>; N=71<sub>CR</sub>) and moods  
1346 or behaviors (N=40<sub>CG</sub>; N=26<sub>CR</sub>). In this study, personal activity reflections logged by caregivers were more focused on  
1347 task completion, leisure activities, and enjoyment in supporting their care receiver. Older adult care receivers' reflections  
1348 recalled personal activities related to preparing for events, food, shopping, and exercising. Care partners also logged  
1349 care-related tasks like going to or preparing for medical appointments and caregiving assistance (N=37<sub>CG</sub>; N=20<sub>CR</sub>).  
1350 Reflections also highlighted positive conversations and the joy of sharing information between partners (N=36<sub>CG</sub>;  
1351 N=22<sub>CR</sub>) (see Table 12).

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1351  
1352

Table 12. Reflection Theme: Recalling

	<b>Field Study</b>
<b>Mood &amp; Behavior</b>	CG: we had some good chats today mom was a little sad about death of someone from church I'm glad I was able to get her more info about what happened - 11A-CG
	CR: she did everything perfect today-20B-CR
<b>Personal Activities</b>	CG: 22B-CR and I went on several errands and we were just both noticing the technology that is used and all our everyday errands that we do-22A-CG
	CR: I was very fortunate to be able to take her to church this morning and be with her last evening at the Andrea Bocelli concert I was very fortunate to be able to share that experience with her-27B-CR
<b>Medical/ Health Conditions</b>	CG: he went to physical therapy and got more clarification and what will make him better -18A-CG
	CR: I probably should have taken a second antidepressant but I didn't-21B-CR
<b>Care Activities</b>	CG: today we were able to do some more meal prep which is great therapy for my mom we were also able to pay some bills get outside and take a walk and do some PT inside -20A-CG
	CR: I like that she was able to come in and change me at good times -14B-CR
<b>Positive Conversations</b>	CG: I enjoy sharing information that I think would be very useful to her and the you know now and in the future it's been very useful to me so I like to see her use instacart and I think she would like it -22A-CG
	CR: very good 27A was very understanding we discussed a lot of things and I was very pleased-27B-CR

**Impact of Recalling:** Participants describe the positive impact of reflecting on their day. They find value in articulating ways to improve their care experiences, identifying tasks and actions they need to take, and simply reminiscing about the conversations and experiences of that day. For example, 15A-CG describes using CareJournal to help her recall her own actions of the day and how she treated her father:

*'I do think it's just really helpful for me as a caregiver, just kind of like therapy is. Reflecting on my own, of how I acted, how I treated, how I felt during my caregiving experience with my dad. So, I thought that was very important to me, and also it helps me a bit to be more present and to always look at the positive thing.'*-15A-CG

Beyond reflecting on one's personal actions, care partners also highlighted how CareJournal helped them treasure daily moments and create more meaningful reflections. Amongst many participants, recalling was described as a time to treasure the moments of the day because moments can pass quickly. Having a dedicated time to reflect on the day's interactions and activities helped to create their daily reflection.

*"That makes you think about the situation and sort of evaluate yourself what it is that's really happening. Then you kind of put that into your sentence or your reflection to share that."*–10A-CG

However, the act of recalling was not an entirely positive experience for everyone. For instance, 8B-CR described how he found the repetitive daily reflection question to be a sobering reminder of the limitations imposed by his current living circumstances.

*"Well, my life is kind of limited to being inside a lot, not dealing with many people, We have friends, but my daily reflections to me were very repetitive. And that was disappointing to me because that showed me the limited life living,"*–8B-CR

Throughout the interview, 8B-CR continuously described how he was disappointed because the questions were repetitive, but the repeating nature also presented him with his reality. Revisiting the routines and constraints of their day-to-day life through the reflections proved daunting, highlighting how the simple act of recounting one's experiences can surface complex emotions in older adult care receivers, depending on an individual's situation.

Despite this perspective, the reflections provided participants with an opportunity to be introspective, identify areas for improvement within their care receiver-caregiver dynamics, and cultivate a greater sense of mindfulness about the moments they shared. Using CareJournal fostered gratitude, accountability, and connection, while also gently unveiling the harsh realities some faced in managing difficult life transitions.

**5.2.3 CareJournal Constraints and User Frustrations. *Speech Input Time:*** The CareJournal skill was designed as a tool that allowed older adult care receivers and caregivers to openly express their needs, thoughts, and feelings. However, our analysis revealed some limitations that hindered this goal. Specifically, 13 care partners, primarily caregivers, described being frustrated with the skill because of the Alexa device's tendency to advance to the next question prematurely, hindering the participant's ability to fully log their answers to the daily reflection questions. With participants commonly expressing challenges similar to 22A-CG:

*"I felt it didn't give me enough time to share my reflection. I was still talking and it would say, "Great," and then go on to the next thing. And I went to say, "But I'm not finished. I still have more to say."*–22A-CG

This challenge commonly occurred when participants would pause to think or when their response exceeded the system's expected response duration. Despite efforts to mitigate these issues through instructing participants to enable the 'Adaptive Listening' accessibility feature, the system still struggled to accommodate natural pauses in the speech that occur when participants were formulating their thoughts or for participants who have speech impairments due to health conditions (e.g., stroke, mild cognitive impairments).

In response, care partners created workarounds that ultimately limited Alexa from interrupting. For instance, participants pre-planned responses before they began the reflection process with CareJournal or care partners altered their intended message in an effort not to be cut off. While these workarounds allowed Care partners to navigate the system's constraints, doing so may have potentially compromised the depth and authenticity of reflections shared. Specifically, 14A-CG mentioned

1457 *"I felt like it didn't give me enough time to speak, so I tried to come in more prepared... because I knew it*  
1458 *was going to cut me off, I might have just said, 'nothing' -because> I don't want to get into that <and get*  
1459 *cut off>. So in that aspect, sometimes maybe it wasn't as helpful to 14B-CR because I didn't go into enough*  
1460 *detail."* – 14A-CR  
1461

1462 This shows the need for more flexible and adaptive voice recognition systems that can better accommodate varying  
1463 rhythms, pauses of human speech, and completion of thought, particularly when users are engaging in reflective and  
1464 emotionally charged communications.  
1465

1466 **Recognition of Speech Beyond Standard American English:** Our research echoed previous literature [49, 60, 98],  
1467 on the challenges of automated speech recognition in diverse communities. We observed difficulties in recognizing  
1468 non-standard English names and accents, impacting user experience and data accuracy.  
1469

1470 *Name recognition* issues came about during the setup of CareJournal skill, forcing participants with non-standard  
1471 American names to use nicknames. This caused confusion when 24A-CG opened CareJournal to listen to a summary  
1472 from her care partner she logged the reflection: "Who is <insert older adult care receiver selected nickname>." In this  
1473 case, the RA contacted the care partners to confirm the name. Similarly, 18B-CG noted, in reflections and during the  
1474 interview, Alexa's consistent mispronunciation of his care partner's name.  
1475

1476 *Accent recognition* also presented challenges, particularly amongst participants who were South Asian (N=4) and had  
1477 a speech impairment. During the Pilot Study, care partner pair 15 was instructed to log daily reflection responses via  
1478 text using CareJournal via the Alexa mobile application because the system was unable to recognize 15A-CG speech,  
1479 due to her speech impairment. During the Field Study, care partner pair 16 experienced frequent misunderstandings:  
1480

1481 *"This time I <had> trouble... Didn't recognize <my> voice"*–16B-CR  
1482

1483 These issues led to repeated questions and prompts, potentially hindering the quality of shared reflections logged and  
1484 summaries shared.  
1485

1486 For a skill like CareJournal, this can be very difficult because the speech that is recognized by Alexa is what is  
1487 relayed to the care partner. These observations highlight the need for reflection tools that are inclusive of cultural  
1488 differences, in this case, more inclusive speech recognition to text technology in care-oriented spaces, where accurate  
1489 communication is essential. While voice assistant limitations like premature speech cutoff and name recognition  
1490 issues are well-documented in the literature, their impact in caregiving contexts reveals a more serious concern when  
1491 interacting with a reflection tool like CareJournal. These technical constraints can hinder care relationships more. For  
1492 instance, the caregiver's decision to respond with "nothing" rather than risk being cut off (as mentioned by 14A-CR)  
1493 represents a breakdown in care communication, which goes against the goal of CareJournal. This censorship to not be  
1494 cut off has the potential to compromise care quality by limiting vital health updates for the older adult care receiver,  
1495 emotional support, and daily observations that could potentially improve the care relationship between care partners.  
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### 1499 5.3 Care Partners' Envisioned Use for CareJournal

1500 5.3.1 *CareJournal for Care Teams.* Care partners highlighted the potential benefit of CareJournal for external paid  
1501 caregivers and those in special care situations (e.g., bedridden, those with cognitive decline). This insight suggests that  
1502 while CareJournal may not be universally beneficial in improving communication for all care partnerships, it has the  
1503 potential in specific care contexts. For instance, participants saw value in facilitating communication with multiple  
1504 caregivers, particularly in cases where the care partnership extends beyond one older adult care receiver and one unpaid  
1505 family caregiver to include a network of paid caregivers. As 21A-CG noted,  
1506  
1507  
1508

1509 *"If somebody had a caregiver service and it wasn't the same caregiver every day, this would make more*  
 1510 *sense because that way if you're having summaries, the person that needs the care would be able to inform*  
 1511 *multiple caregivers."* – 21A-CG  
 1512

1513 In this scenario, CareJournal is positioned as a centralized communication tool within a care network, where summaries  
 1514 are used as a way to update all caregivers and the older adult care receiver on progress, needs, and opportunities for  
 1515 improved care.  
 1516

1517 Although the system was not initially designed for multiple care partners, other participants recognized CareJournal's  
 1518 potential for broader use. For example, one participant also envisioned using the tool for facilitating feedback and  
 1519 updates between families and paid caregivers. 24A-CG suggested the tools to use with in-home nurses:  
 1520

1521 *'I also thought it would be a good device for me to use with the nurses when they come in, instead of them*  
 1522 *texting me about something, they could just put it in the CareJournal and update me on what's going on*  
 1523 *and what they're doing.'*–24A-CG  
 1524

1525 These insights open up new avenues for the application of reflection tools in more complex caregiver–care receiver  
 1526 dynamics, particularly in situations where traditional face-to-face communication may be limited or challenging. These  
 1527 findings show that CareJournal has the potential to empower older adult care receivers to continue to actively participate  
 1528 in their care management across diverse care partner dynamics.  
 1529  
 1530

1531 **5.3.2 Review & Editing.** Caregivers expressed interest in features allowing them to review and edit responses before  
 1532 submissions, indicating a desire for greater user control. As mentioned in prior work [22], the speech-to-text sometimes  
 1533 resulted in inaccuracies in care partner reflections and summaries (see Table 9). This was sometimes caused by not  
 1534 being able to complete a thought due to speech time and speech recognition. However, reviewing and editing were  
 1535 described as a way to fix errors that may appear in the reflections, caregiver 20A-CG suggested,  
 1536

1537 *"If I could read what I said on the screen before I sent it. Or just edit it, like I said, because when it cuts*  
 1538 *you off, like, 'Hey, would you like to rerecord that?' And then you say yes, and you are able to rerecord it."*  
 1539 *–20A-CG*  
 1540  
 1541

1542 Caregiver 16A-CG, had similar sentiments, but in reference to the summaries that were generated by AI and human  
 1543 researchers. Although care partners did have the ability to review and choose a summary to send to their care partner,  
 1544 having the ability to edit summaries was noted:  
 1545

1546 *'I'm sending something and if I can review myself what I'm sending before it's sent, and then I can just at*  
 1547 *least correct Alexa on that before.'*–16A-CG  
 1548

1549 Such features could address the challenges with premature cut-offs and enable more thoughtful, complete reflections  
 1550 and summaries.  
 1551

1552 **5.3.3 Patterns of Use: Frequency and Situational. Frequency of Use:** During the Field Study interviews, care partners  
 1553 were asked if they would continue using CareJournal if given the opportunity. Caregivers responded positively, but  
 1554 suggested adjusting the frequency where care partners logged summaries to better fit their care routine. For example,  
 1555 20A-CG noted:  
 1556

1557 *'Well, not daily, but I think if you can establish a rhythm, in terms of what's going to work for you, what*  
 1558 *you find to be the most productive, that would be a good thing, yeah.'*–18A-CG  
 1559  
 1560

1561 Another caregiver mentioned the repetitiveness of the questions (i.e., having the same reflection questions every day)  
1562 caused her to want to change the frequency of use:  
1563

1564 *'I certainly would, I just don't know if I would use it every single day. Because I think the questions*  
1565 *are repetitive. I think there needs to be different questions and I think there needs to be some editing*  
1566 *choices.'*—20A-CG  
1567

1568 While this shows CareJournal's potential, this suggests the need for users to be able to choose how often they want to  
1569 log reflections according to their care routines.  
1570

1571 **Situational Use:** Beyond the frequency of use, care partners also mentioned they would only continue using  
1572 CareJournal in specific situations. For instance, during the study, 1B-CR noted:  
1573

1574 *'I don't know that I would <use CareJournal if I did not have a surgery coming up or a specific appointment*  
1575 *that I needed to talk about> because it's easier to text.'*—1B-CR  
1576

1577 Other care partners agreed with this sentiment, noting that they would use it if there was a breakdown in communication  
1578 or in their usual care routine. 17A-CG explained,  
1579

1580 *'Maybe if something changed about our communication, or maybe if 17B-CR got worse <MCI DIAGNOSIS>*  
1581 *but right now, no.'*—17A-CG  
1582

1583 These examples mentioned by care partners highlight a need to allow for more personalized usage patterns, which  
1584 could lead to better adoption and more sustainable use in various caregiving contexts.  
1585

1586 These insights from care partners highlight the potential broader usage of CareJournal beyond its initial design.  
1587 The feedback suggests that future iterations of such tools should prioritize customizable features, adjustable usage  
1588 frequencies, and the ability to cater to complex care networks, thereby enhancing their utility across a wider range of  
1589 caregiving contexts and needs.  
1590

## 1591 6 Discussion

1592

1593 Our findings highlight how AI tools can support reflection and communication between care partners. In addressing our  
1594 research questions, we describe how design features such as daily open-ended prompts contributed towards care partner  
1595 need articulation (RQ1) and describe how CareJournal, an AI articulation tool, has positive effects on care relationships  
1596 simply by encouraging routine reflection (RQ2). We use this section to articulate opportunities for generative AI to  
1597 support older adults' care relationships, recommending adaptive articulation approaches that vary based on care partner  
1598 dynamics, recommending adaptive articulation approaches that vary based on care partner  
1599 dynamics.  
1600

### 1601 6.1 AI in Care Articulation

1602

1603 We observed how changes in reflection prompts affected care partners' preferences for human vs. AI summaries from  
1604 the Pilot Study to the Field Study. We extend research highlighting prompt engineering's role in ML [31] to care contexts.  
1605 Specifically, we found that yes/no questions were quicker and perhaps easier for participants to respond to but did  
1606 not produce rich enough reflection responses to generate meaningful AI summaries, which limited their care partners  
1607 aligning. This insight aligns with guidance for prompt specificity and clarity [31]. It also suggests that the effectiveness  
1608 of AI in this context is not only about the capabilities of AI's capabilities, but how we design human-AI interactions to  
1609 elicit rich and meaningful interactions.  
1610  
1611  
1612

1613 While aging, HCI, and robotics scholars have debated AI's role in replacing older adults' human interactions (e.g.,  
1614 social robotics, "creepy" anthropomorphism) [35, 66, 76, 83, 85, 93], our research shows that AI can play a role in  
1615 supporting human-human relationships and communication. This aligns with prior work in that shows human-AI  
1616 collaboration can support human-to-human relationships and interaction by improving English communication skills  
1617 for people with intellectual disabilities [32], engaging in conversations with Native speaker [30], and relationship  
1618 development amongst high school students [50] Our findings showed how participants often preferred AI-generated  
1619 summaries over human-generated summaries. Our findings suggest that generative AI can summarize complex, everyday  
1620 care experiences into relevant, succinct summaries. Future work could explore how AI can identify long-term trends  
1621 and patterns in care relationships.  
1622

1623  
1624 There is a growing body of literature describing concern over AI for emotion and disability detection (e.g., [12,  
1625 34, 80, 94]). In contrast to AI being used to detect, which promotes an approach that problematizes aging, we push  
1626 researchers and technologists to consider **articulation-driven AI**. In doing so, we argue that it is critical to develop  
1627 approaches to evaluate AI's effectiveness over time and investigate how it enhances rather than replaces meaningful  
1628 human interaction in care relationships. At the end of our four-week field study, participants described how CareJournal  
1629 helped them focus and be more intentional in communicating (or articulating) care-related needs. We attribute this  
1630 impact to CareJournal serving in an intermediary role in moments of conflict. However, we also acknowledge that  
1631 beyond mediation, the act of prompting participants to reflect on their care could trigger an emotional response due to  
1632 its conversational nature, which could invoke parasocial effects [56]. Nevertheless, we find that AI can be useful in  
1633 supporting meaningful articulation work between care partners.  
1634  
1635  
1636

## 1637 6.2 Adaptive AI Reflection by Care Dynamic 1638

1639 Although CareJournal was not useful for all care partner relationship types, care partners were able to see CareJournal's  
1640 potential for multiple care partners within a network. In contrast to our initial prototype testing study where care  
1641 partners articulated potential differences in CareJournal use by informal care partner role [81], care partners in the  
1642 field study discussed how CareJournal might connect with formal health care ecosystems. As shared in Section 5.3.1,  
1643 participants described how such an articulation and reflection tool could be helpful to more easily and regularly  
1644 communicate with nurses or medical providers. We argue for designing flexible reflection tools that can adapt to specific  
1645 care relationships, living arrangements, and communication preferences. Such adaptability could particularly benefit  
1646 older adults receiving care, who often have limited opportunities to share their thoughts with their wider support  
1647 network.  
1648  
1649

1650 To enable the ability to adapt reflective tools to dynamic care networks, future reflection tools should adapt to the  
1651 diverse needs of different care relationships (e.g., spouses, adult children, nurses) through personalized reflection prompts  
1652 that address the unique dynamics and challenges of various care partnerships. For example, reflection prompts for  
1653 spousal caregivers might focus on maintaining intimacy and balancing the roles of partner and caregiver, while prompts  
1654 for adult children caring for parents could address role reversal and preserving the parent's dignity. Professional  
1655 caregivers might receive prompts emphasizing the maintenance of professional boundaries while still providing  
1656 compassionate care. To further enhance personalization, these tools could leverage advancements in generative AI to  
1657 analyze care partners' communication patterns gathered through their responses to reflective questions. By considering  
1658 factors such as response patterns, emotional tone, time of day preferences, and language complexity, the AI-driven tool  
1659 could dynamically adjust prompts and check-in frequency and tailor summaries to match each care partner's unique  
1660 communication style and needs. This approach would allow reflection tools to offer more relevant and effective support  
1661  
1662  
1663  
1664



1665 across a wide range of caregiving scenarios, ultimately enhancing the care experience for both caregivers and care  
1666 receivers.

1667 These personalized approaches align well with the principles of accessible computing, as they allow the tool to adapt  
1668 to users' individual needs and capabilities, rather than requiring users to adapt to the tool [100]. This adaptive approach  
1669 could benefit care partners with varying cognitive abilities, language proficiencies, or those who experience fluctuating  
1670 energy levels. However, such feature implementations should continue to focus on ethical considerations, privacy, data  
1671 use, and the balance between AI-supportive assistance and human agency in reflection.  
1672  
1673

## 1674 7 Limitations

1675 There are some limitations to the generalizability of our findings. First, we note that we evaluated a conversational  
1676 scaffolding tool with one type of voice assistant - the Amazon Alexa Show, which is a standalone device with a screen.  
1677 However, voice assistants can take different forms and findings may be different depending on the voice assistant brand  
1678 and screen presence. Some outcomes, such as voice capture timeout length, may also differ depending on the device.  
1679 Additionally, the relatively small sample size limits our ability to capture the full scope of participants' needs and lived  
1680 experiences, potentially affecting the generalizability of our findings.  
1681  
1682

## 1683 8 Conclusion

1684 Our four-week CareJournal pilot and field studies demonstrate the potential for AI-powered tools to support reflections  
1685 and need articulation within care partner relationships. Findings emphasize technology's ability to capture reflections  
1686 and act as an intermediary in supporting care partners through challenging communication points in their relationships.  
1687 The study also reveals the importance of designing flexible reflection tools that adapt to specific care dynamics, living  
1688 arrangements, and communication preferences, particularly amongst older adult care receivers. Future research should  
1689 delve deeper into personalized prompts and AI-driven customization that can enhance the relevance and effectiveness  
1690 of such tools, ultimately improving the care experiences for both the older adult care receiver and the caregiver.  
1691  
1692

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