



Participant Perspectives on Alzheimer’s Disease Digital Health Research: Findings from Two Cohort Studies



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INTRODUCTION

- There is an interest in identifying novel digital measures for Alzheimer’s disease to improve early disease detection based on real-world behavior.
- Metrics from smartphones and wearable devices have been linked with cognitive function and dementia status.
- **To leverage real-world behavioral data from digital devices, there is a need to understand participant perspectives on the feasibility and perceived value of using such technologies in research.**

METHODS

- **Sample:** participants in the Framingham Heart Study or Boston University Alzheimer’s Disease Research Center (**Table 1**)
- **Assessments – FHS:** completed smartphone-based cognitive tests and post-test surveys to assess usability
- **Assessments – BU:** used various digital technologies (e.g., smartphone apps, wearable devices, in-home sensors) followed by qualitative interview about experiences in study, which were transcribed and thematically coded
- **Statistical Analysis:** calculated prevalence of usability and participant perspectives across cohorts

RESULTS

Table 1. Sample Characteristics Overall and Across Cohorts

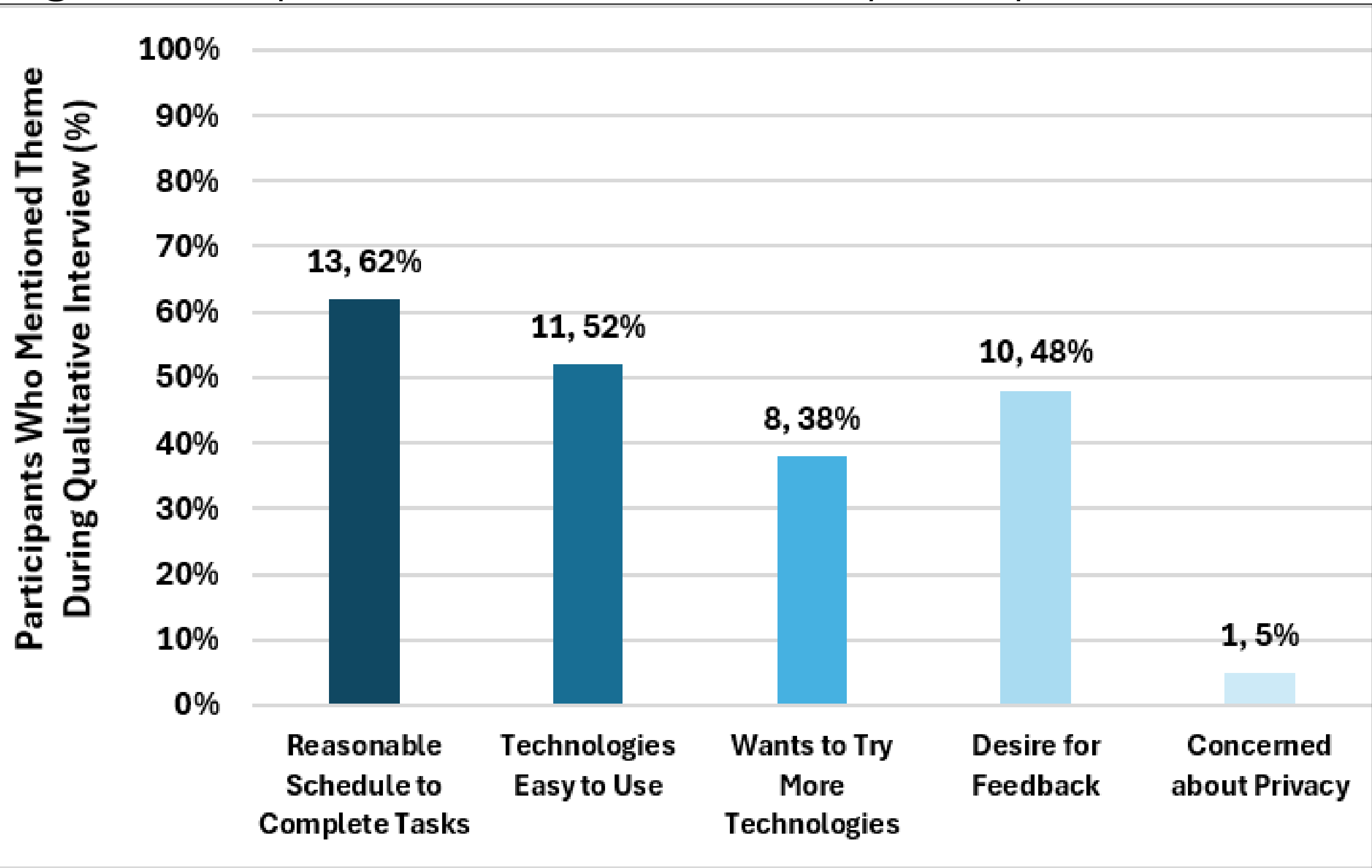
	Framingham Heart Study Cohorts		Boston University Cohort (N=21) ^c
	Gen 2 + Omni 1 (N=82) ^{a,b}	Gen 3 + Omni 2 + Spouse (N=455) ^{a,b}	
Age (years), mean (SD)	74.2 (5.8)	60.8 (8.2)	68.0 (9.6)
Female, N (%)	45 (55%)	269 (59%)	10 (59%)
White race, N (%)	70 (85%)	405 (89%)	13 (76%)
College graduate, N (%)	56 (69%)	311 (68%)	17 (100%)

a. Children or grandchildren of original FHS participants enrolled to form Gen 2 or Gen 3 cohorts; b. FHS enrollment expanded to include individuals from more racially/ethnically diverse populations to form Omni 1 and Omni 2 cohorts; c. N=4 missing demographic data

Table 2. Perspectives from Framingham Heart Study Participants

	Gen 2 + Omni 1	Gen 3 + Omni 2 + Spouse
Familiarity with Technology		
Use smartphone ≥ 5 years	72 (88%)	424 (93%)
Use smartphone ≥ 10 hours/week	42 (51%)	281 (62%)
Can figure out new products	45 (55%)	299 (66%)
Ease of Using Smartphone		
Easy to use	59 (72%)	382 (84%)
Confident using device	62 (76%)	385 (85%)
Can use without support	68 (83%)	388 (85%)
Ease of Using Cognitive App		
Easy to use	65 (79%)	382 (84%)
Confident using app	60 (73%)	369 (81%)
Can use without support	75 (91%)	401 (88%)
Good Schedule to Complete Tasks	74 (90%)	398 (87%)
Concerned about Privacy	6 (7%)	35 (8%)

Figure 1. Perspectives from Boston University Participants



CONCLUSIONS

- Middle aged and older adults were confident in using digital technologies, did not commonly endorse privacy concerns, and expressed a desire for feedback to better understand their individual results and contributions to research through the study.
- This study supports the feasibility of using digital technologies in Alzheimer’s disease research and highlights potential methods for sustaining longitudinal adherence.

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