

# CO-DESIGNING COMMUNITY-BASED SHARING OF SMARTHOME DEVICES FOR THE PURPOSE OF CO-MONITORING IN-HOME EMERGENCIES

## 01. BACKGROUND

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This paper was presented at the Proceedings of the 2023 CHI Conference on Human Factors in Computing and was published on 19th April 2023.



## 02. METHODOLOGY

50 participants were interviewed and were shown three (3) hypothetical scenarios in which potential emergency situations could arise. They were allowed to brainstorm potential mitigation strategies. Lastly, participants engaged in a think-aloud app interface co-design session. Scenarios 1, 2 and 3 are shown below as well as the design template.



## 03. RESULTS



- >> Potential for increased safety and peace of mind
- >> Potential for Reduction of property loss
- >> Privacy concerns
- >> Granular access control necessity
- >> Need for transparency and accountability

## 04. DISCUSSION

### IMPLICATIONS OF FINDINGS:

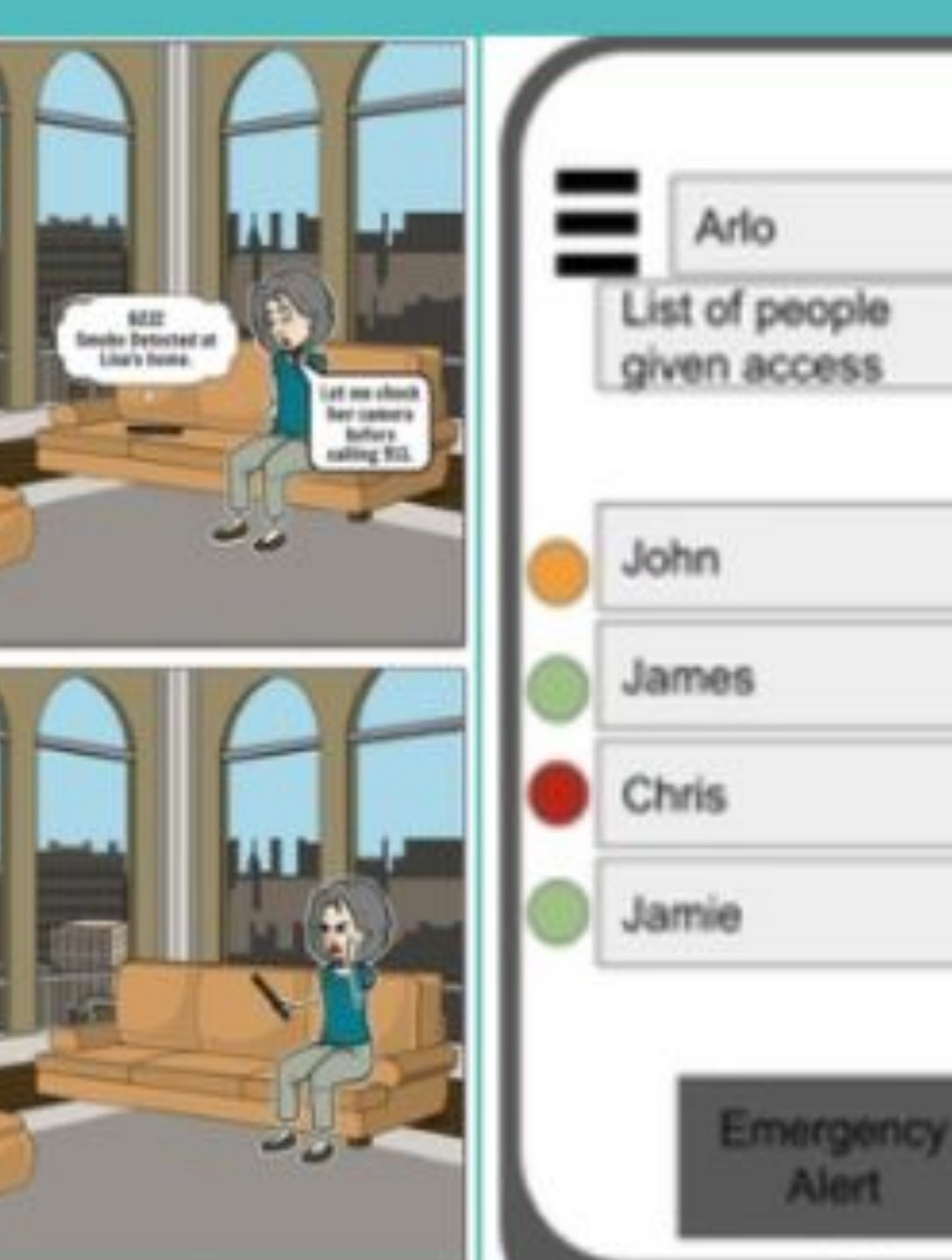
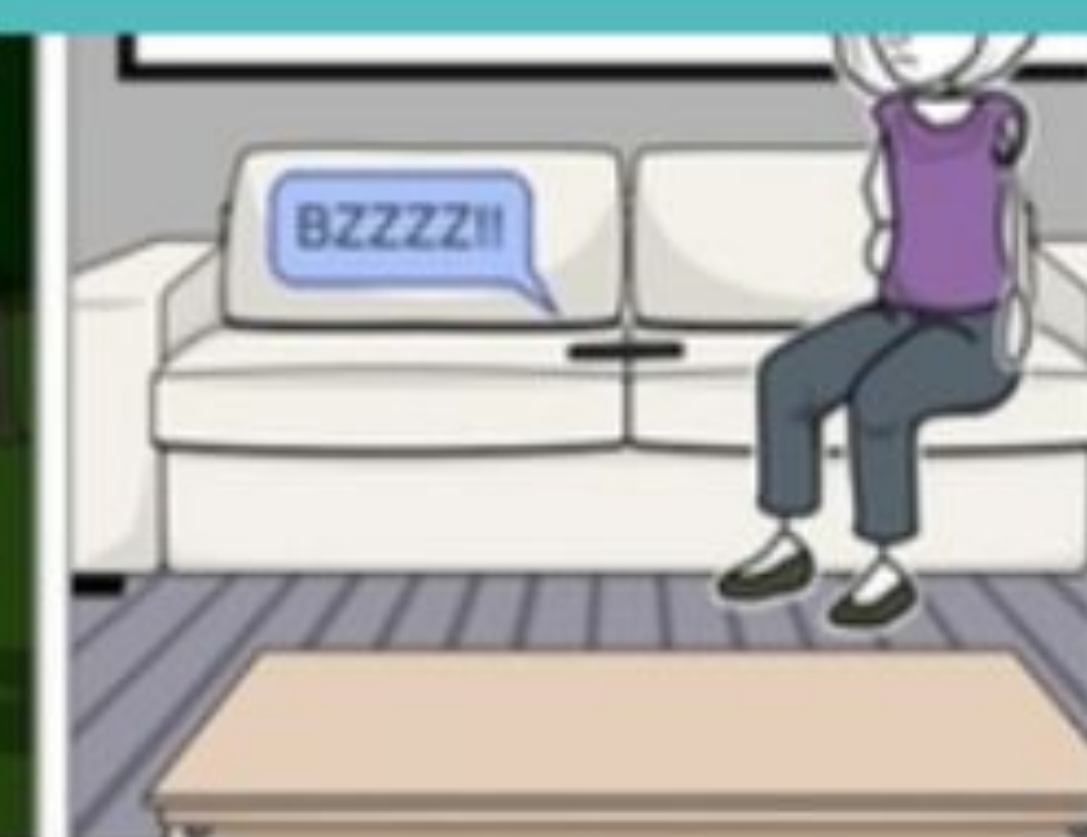
1. Smarthome device owners are motivated to protect their homes.
2. Privacy is a major barrier for smarthome co-monitoring.
3. Guidelines for designing a smarthome emergency co-monitoring system.

In the field of HCI, this study contributed by demonstrating that involving the users in the design process can be extremely beneficial.

This study paves the way for the actual design and development of a co-monitoring app, offering concrete insights into user needs and privacy considerations.

## 05. CONCLUSION

This study highlights the potential for community-based emergency monitoring using smarthome devices, while also stressing the importance of balancing privacy and security. The findings offer valuable insights for the future development of apps or systems that enable safe, shared co-monitoring. As smarthome devices become more widespread, incorporating user feedback early in the design process is crucial for creating effective, privacy-aware solutions.



(a)

(b)

Shakera Harold  
816032559  
HUMAN COMPUTER INTERACTION

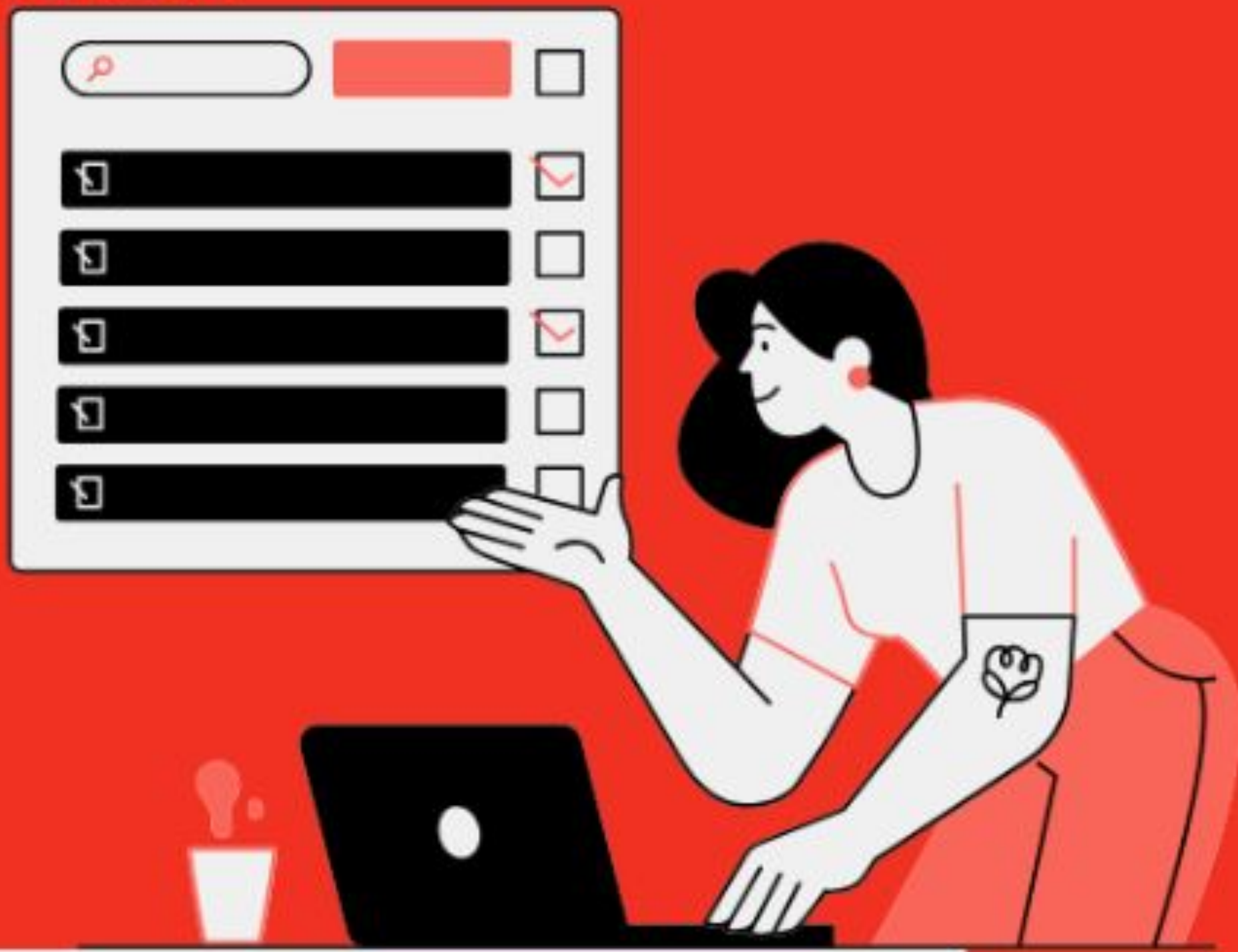




# A Longitudinal In-the-Wild Investigation of Design Frictions to Prevent Smartphone Overuse

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## BACKGROUND

Smartphone overuse is hyper-prevalent in society, and developing tools to prevent this overuse has become a focus of HCI. People are trying to find ways to better control how much they use their phones.

The OneSec app was created to help people reduce smartphone overuse. Data from 1,039 users over 4 months showed that the app was effective in decreasing the frequency of social media use by introducing small delays when opening these apps.



## METHODOLOGY

Data from 1,039 users over 4 months showed that the app was effective in decreasing the frequency of social media use by introducing small delays when opening these apps. Overall, the app helps manage smartphone use but also shows that users can revert to old habits with more controlled environments.

## DISCUSSION

### IMPLICATIONS AND RELEVANCE

Persons using the app claimed to be tired of Mindless Use. They further mentioned that they have a hard time stopping and would like to become more thoughtful of the time spent on the phone.

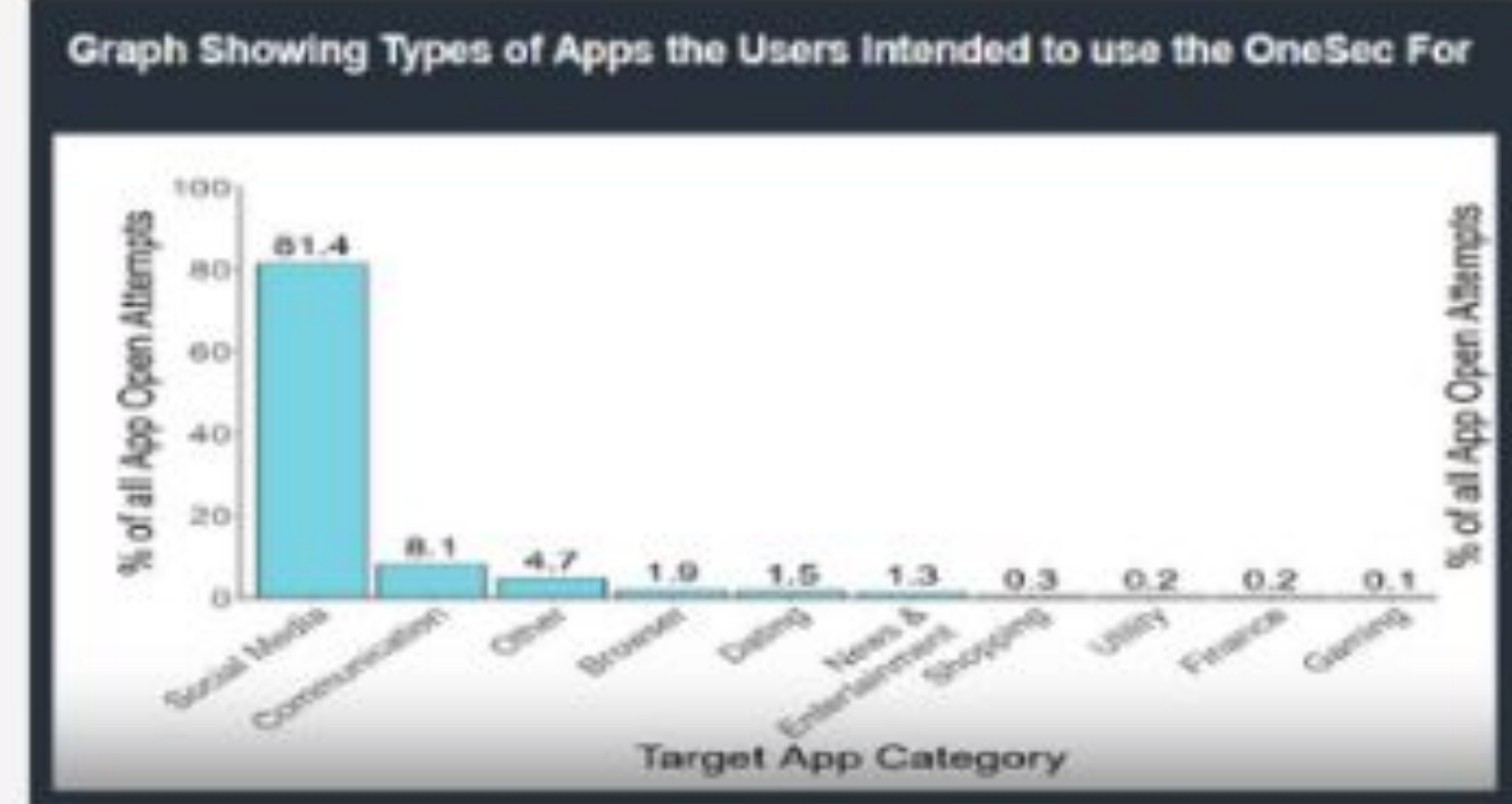
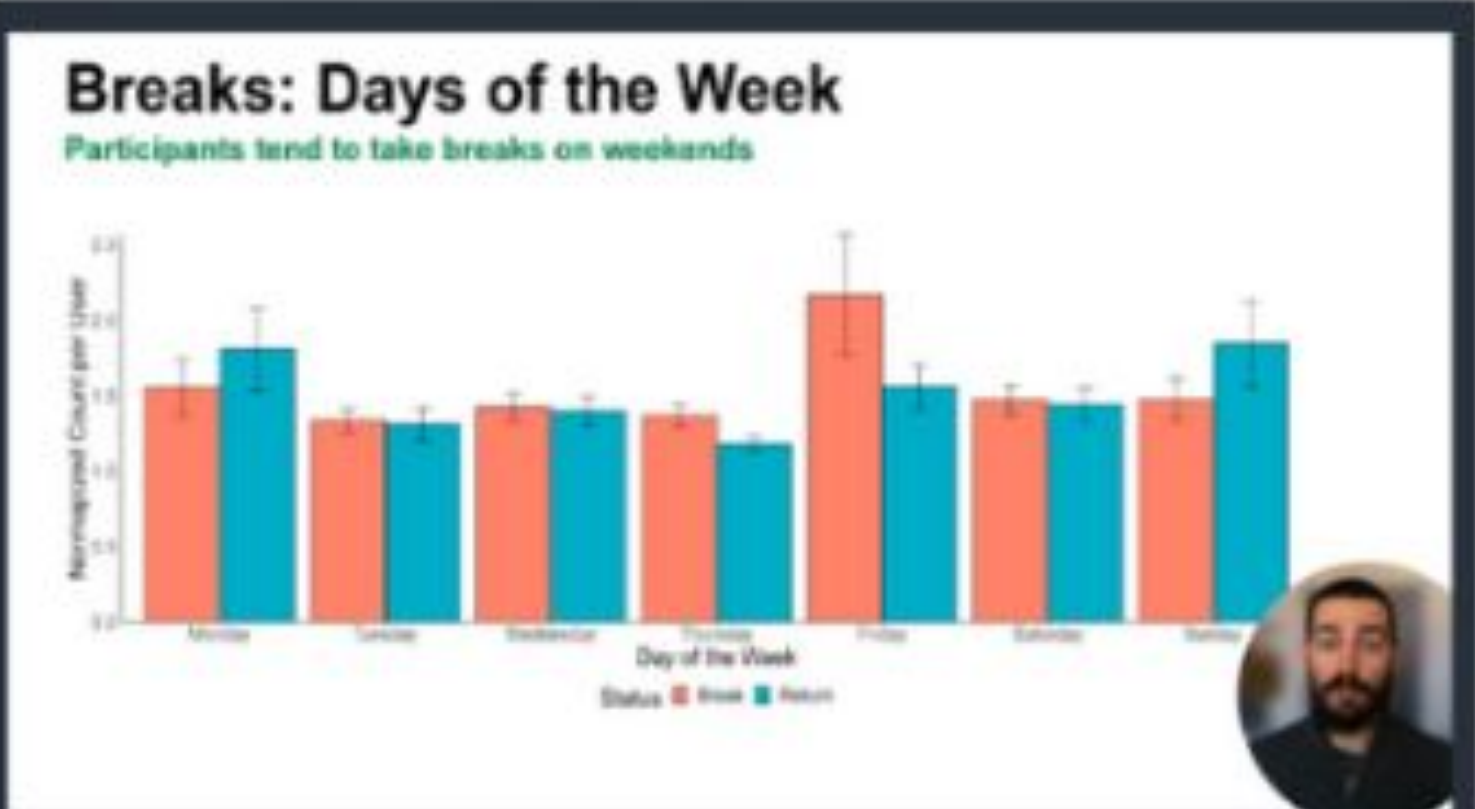
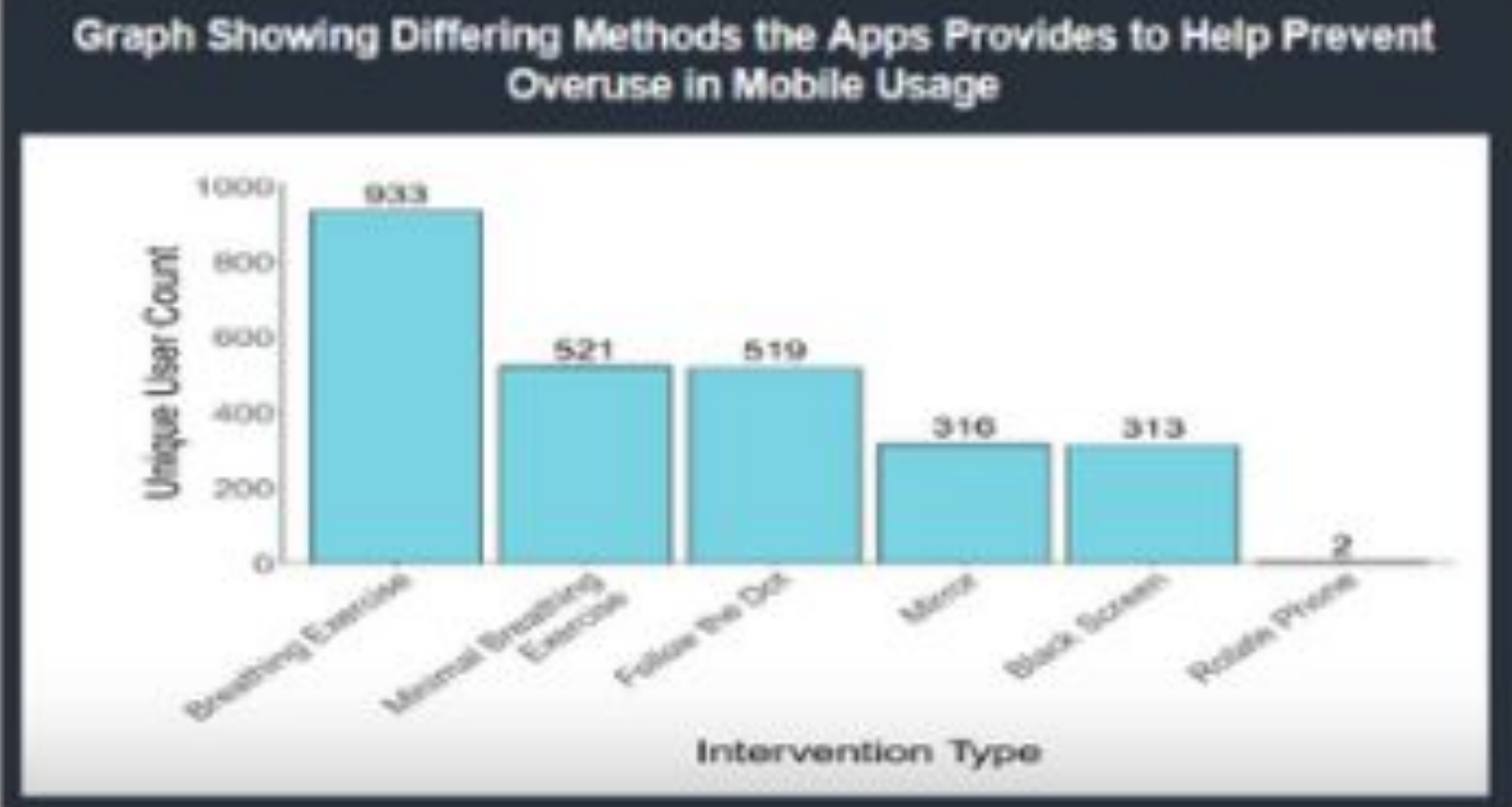
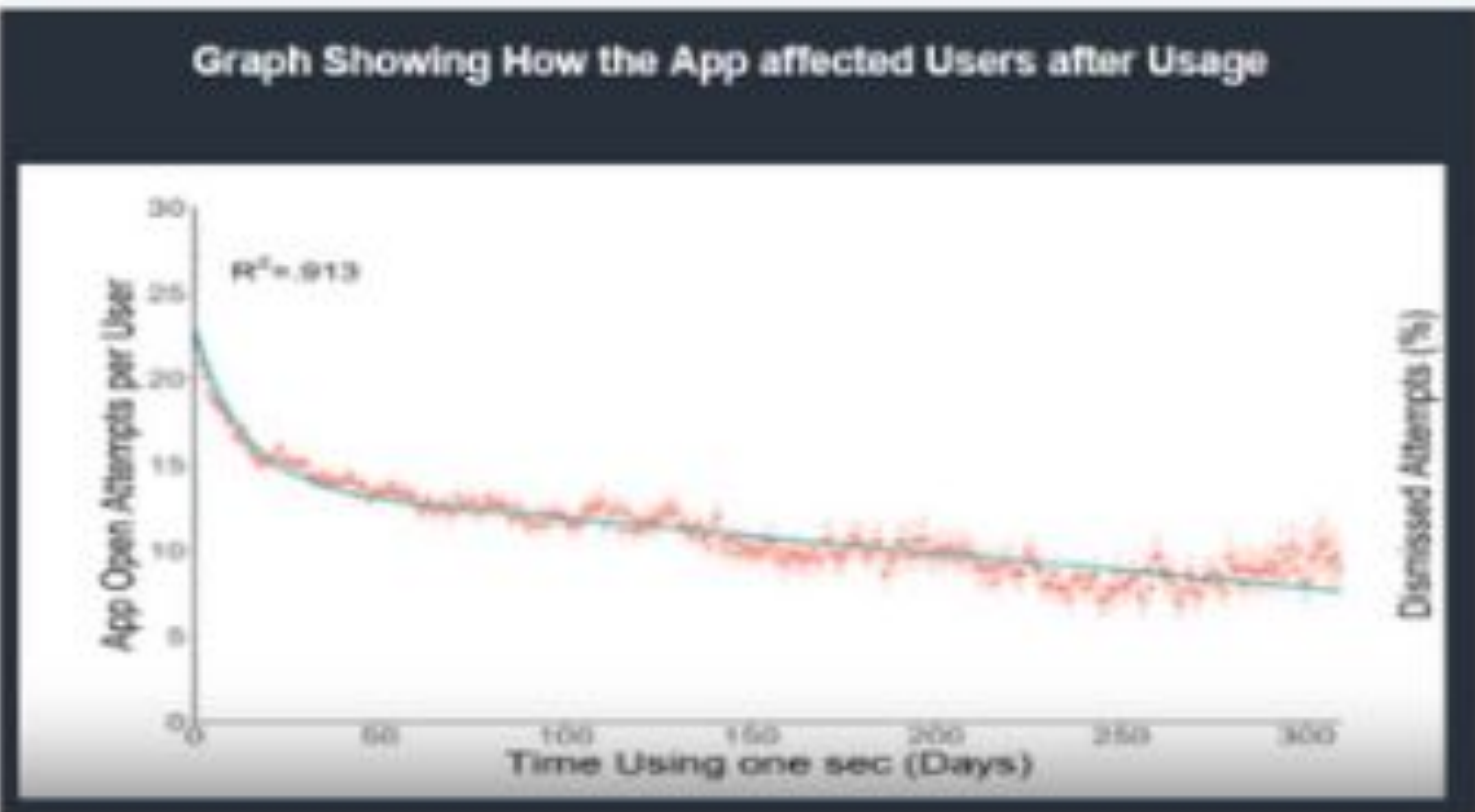
Persons can modify and customise their own experiences from the many differing frictions the app provides such as puzzle games, breathing exercises and many more.

Persons who used the app love the Break feature implemented. This feature allows users to temporarily turn off and on the app during times of holidays or weekends.

Users have decreased mindless usage of mobile devices tremendously. They have reported to use apps more objectively and hence have been able to be more productive in everyday life.

Others have reported that they have discovered how much time is usually wasted on mobile devices and have been able to find more peace with the simpler things in life and also get more things done.

## RESULTS



## CONCLUSION

- Design frictions result in less frequent, more intentional use over time.
- Users take breaks but recover quickly after relax periods.
- Users have reported to be more productive and conscious of what they do with time.





# Designing for Everyday Sounds at Home with People with Dementia and their Partners

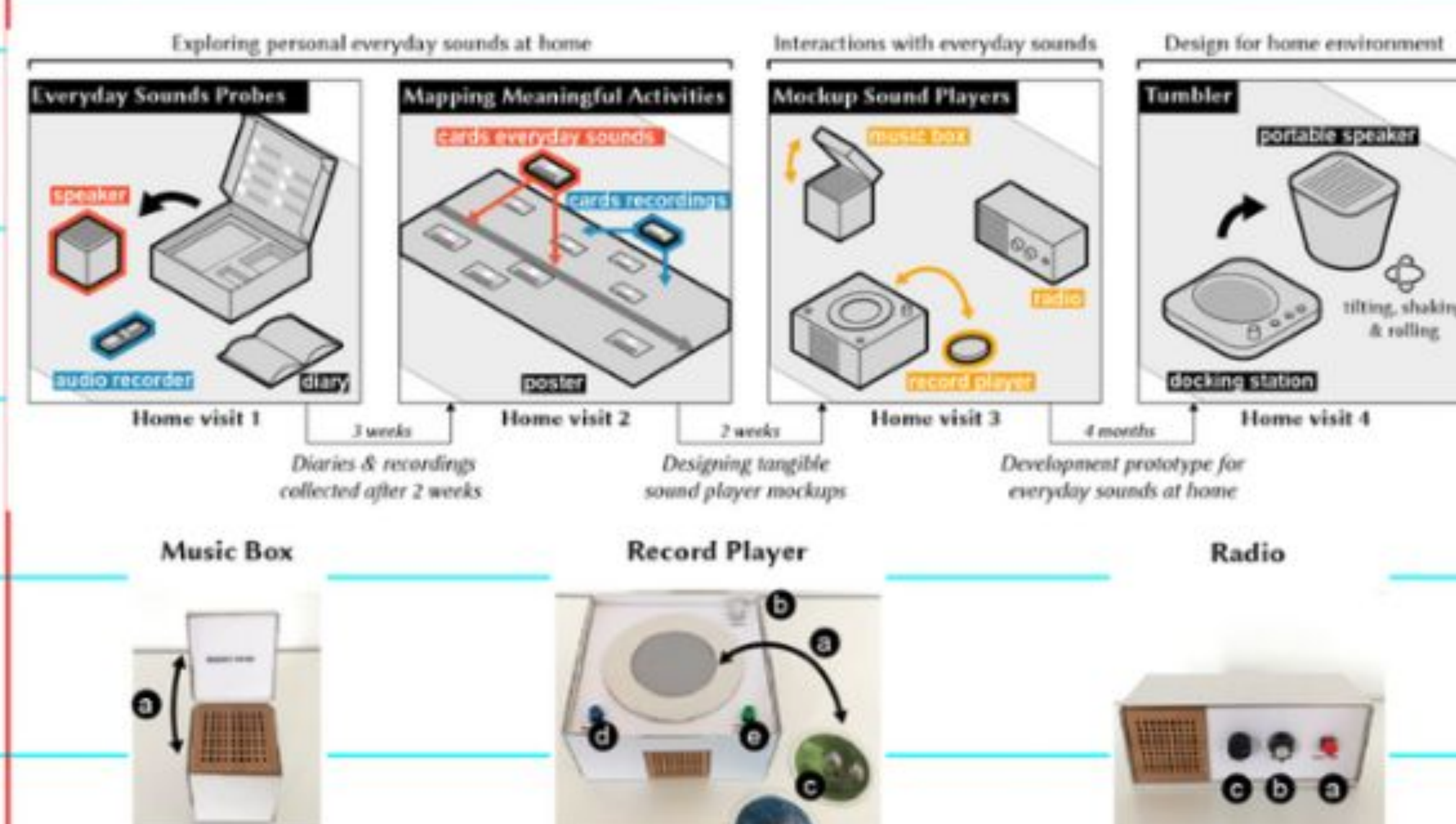
By Eysah Ali (The IT Crowd)

## 1 Background

This paper was authored by Maarten Houben, Rens Brankaert, Gail Kenning, Inge Bonger and Berry Eggen and published on 29th April 2022 towards the CHI '22: Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems. They all have been in major research with Empirical Studies in HCI and studies in Dementia.

## 2 Abstract

People with dementia and their caregivers have expressed a need for social, emotional, and recreational support at home. Everyday sounds can trigger memories and support social interactions. However, research on integrating these experiences into home settings is limited. This paper presents insights from a co-design study with three people with dementia and their partners, focusing on developing an interactive sound player for home use.



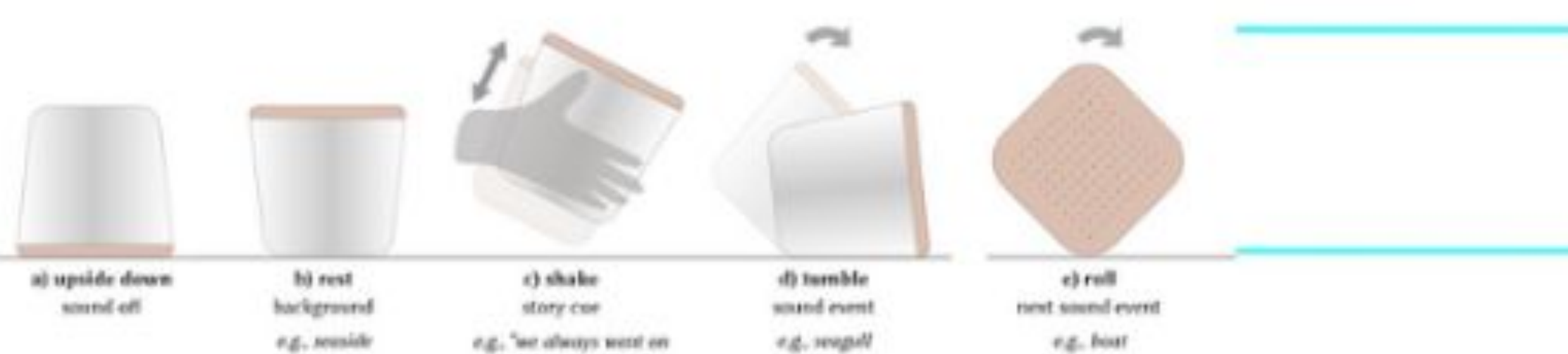
## Methodology

3

The method of research used were an experiment that involved three people with dementia and their partner and having 4 home visits to record and recognize all the sounds, understand meaning of sounds to the users, create prototypes and allow user testing and finally establish a final product design.

## 4 Results

They have collected up to 12.5 hours of audio and video recordings. The final design they created is The Tumbler. This allows many human-friendly features to all the patient to control the device.



## 6 Conclusions

This paper introduces a new way to support couples living with dementia by offering personal sounds at home. By using sounds that evoke past experiences or positive associations, we can trigger conversations and emotional responses. We developed a prototype, the Tumbler, which helps people with dementia and their partners engage in meaningful activities at home. This highlights the need for enriching home activities and aims to inspire future design research that focuses on capturing and enhancing everyday experiences for people with dementia.

## 5 Discussion

The probes used in stage 1 revealed opportunities for personal everyday sounds to support meaningful activities at home by evoking conversations with significant others or emotional experiences through sensory engagement with sound. This greatly studies human emotional interaction through sound which led to offering meaning features in assisting dementia patients.

Literature in HCI has addressed the role of sound to enrich everyday life in the context of people's homes. This paper explored how this potential could benefit people with dementia at home. The act of listening to everyday sounds requires a preparedness to perceive sounds surpassing in time and space that in many cases remain unnoticed. Therefore, listening to everyday sounds results in a focus on the 'here and now' that transforms everyday into meaningful and mindful experiences. As such, we highlight how everyday sounds can cue small but unexpected, light-hearted, and playful gestures in everyday experiences of living with dementia.