What do older people actually want from their robots?

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Introduction & Related Work
Related Work

- 3 major areas of research:
  - Physical healthcare – activity trackers, health monitoring, fall tracking
  - Cognitive support – card matching games, bingo
  - Social Interaction – robot companions, tele-presence robots
- Comparison of virtual vs physical robots
- Acceptance of robots by older people
Motivation

- A lot of research focuses heavily on the design of the robots
- Some research includes older people but may be superficial or stereotypic
- There is lack of research on what type or medium of robot is best for older people
- The motivation for this study is therefore to take a user-centric approach to robots for older people
- Taking a step back, to investigate what older people want, and what types of robots they prefer
Method
Method

• A semi-structured interview with an emphasis on blue-sky thinking
• “If you had a robot in your home, what would you want it to do”
• Following this, participants were shown 5 different types of robots with 2 variations of each type
• Interviews analysed using thematic analysis
Method – Robots Shown

- Humanoid Robots
- Voice Agents
- Tabletop Robots
- Robot Pets
- Virtual Avatars
Method - Participants

- 24 participants. Mean age: 71 years
- Ranging from 66 to 82 years old.
- 50% were women and 50% were men
- Many participants were familiar with publicly available voice agents
- None were familiar with the other types
Results
Results – Forgetting things

One of the most common issues, mentioned by 50% of participants

**P01**: I leave the gas on... or forget to lock the door and ... burning the toast ... I do that more often than anything. I burn toast. I also burn pans. You know, you are in the middle of cooking and you go to the computer or something and it all goes wrong
Results – Dexterity issues

Dexterity issues and help with mobility, mentioned by 55% of participants

P08: I think they could help me with mobility. Getting out of bed, just something to lean on, if you could get it to come and get up with it. I know people with walkers and it’s big and clumsy. So something with intelligence might be better.
Results – Cooking and household tasks

Mentioned by 36% of participants

P04: ... if it could tell me recipes while I was cooking. If it was just speaking to me, I would have it say the list of ingredients and keep saying that until I've got it all in place.
Results – Security

Mentioned by 23% of participants

**P05**: I think it [security system] certainly would be useful for mother. Purely, because we don't really want her opening the door. She got burgled just after my father died, deception burglary.
Results – Other (interesting) themes

• A robot to reset the boiler
• A robot to help with shopping for clothes
• A “spider-man” robot to clean the windows
• A golf-caddy robot
Results – Existing robot functions

• 91% of participants acknowledged the usefulness of physical healthcare robots but did not particularly comment or discuss about robots for their healthcare

• 73% of participants expressed feeling wary of interacting with a robot
  • “It would be good for older friends but I would find it a bit odd”

• Cognitive stimulation was discussed by 27% of participants mostly about playing games with others rather than the robot
Results – Robot type preference

• 27% preferred the robot pets
• 41% did not want to use the humanoid robots
  • P08: I think I would be a bit nervous of Robovie, it looks like it would exterminate you!
• 32% said they did not have a preference on what type of robot they would use
Discussion & Conclusions
Discussion & Conclusions 1

• There is some overlap with existing robotic functions
• Older people prefer to focus on day-to-day tasks and aging at home.
• There are areas such as help with cooking, security and social contact that could be explored further
• Apps that do facilitate requested functions may not be available to or designed for older people
Discussion & Conclusions 2

- Pet robots have conflicting opinions. 5/6 of the participants who preferred the pet robots were female.
- A possible gender bias that requires further investigation.
- Humanoid robots are seen as scary but more importantly impractical, being too large for home use.
- 83% of participants had a least preferred robot that they would not use. Apart from this most would use any robot that met their needs rather than judge based on aesthetics.
Questions?