

## The Challenge

- As dementia numbers are projected to increase, how can we mitigate caregiver stress?
- Gain insight on how assistive technology can be used and or improved to relieve caregiver stress.
- Considerations of ethical gaps in existing research regarding dementia caregivers and technology.

## Abstract

- This study presents a quantitative and qualitative review which explores dementia caregivers' opinions on tracking devices for loved ones who wander.
- A survey posted on social media platforms garnered responses from dementia caregivers on tracking devices.
- 75.4% caregivers believed GPS tracking devices can be beneficial in assisting them in their routine
- 26.2% caregivers emphasized how tracking device function and design can be improved

## Introduction

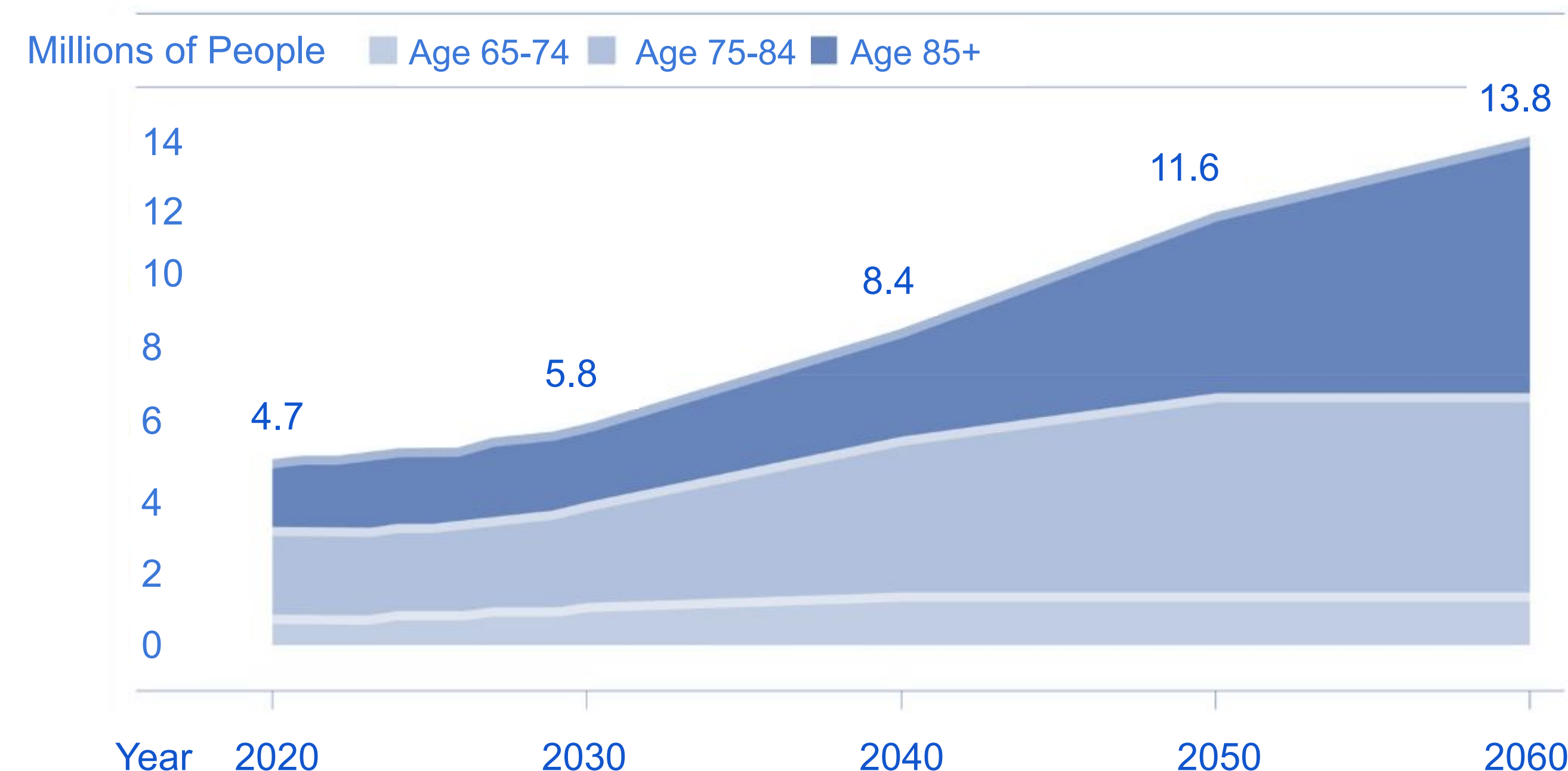


Figure 1: Line graph of the predicted increase of individuals diagnosed with Alzheimer's Disease from 2010 to 2050 <sup>2</sup>.

- The number of people living with dementia globally is expected to double in the next 30 years, increasing the need for caregivers.
- Tracking devices can potentially reduce caregiver stress by providing the user's location.
- We strive to gain feedback on how tracking technology affects caregivers.
- We **hypothesize** that dementia caregivers believe tracking devices have the potential to benefit them in their everyday routine and prefer wearable devices

## Methods

- Qualitative and quantitative approaches for data collection.
- Formulated questions about daily caregiving, wandering of loved ones, tracking technologies, and ethics.
- Google Form survey distributed through Facebook.
- All participants were informed of the study goal before conducting interviews.
- Data collection took place through January and March of 2022.

## Results

	Loved one's who Wander	Loved one's who do not Wander	Total
Use Assistive Technology	4	5	9
Do Not Use Assistive Technology	13	38	51
Total	17	43	60

Figure 2: Table of survey results represents the number of loved one's who wander, do not wander, use assistive technology, and do not use assistive technology.

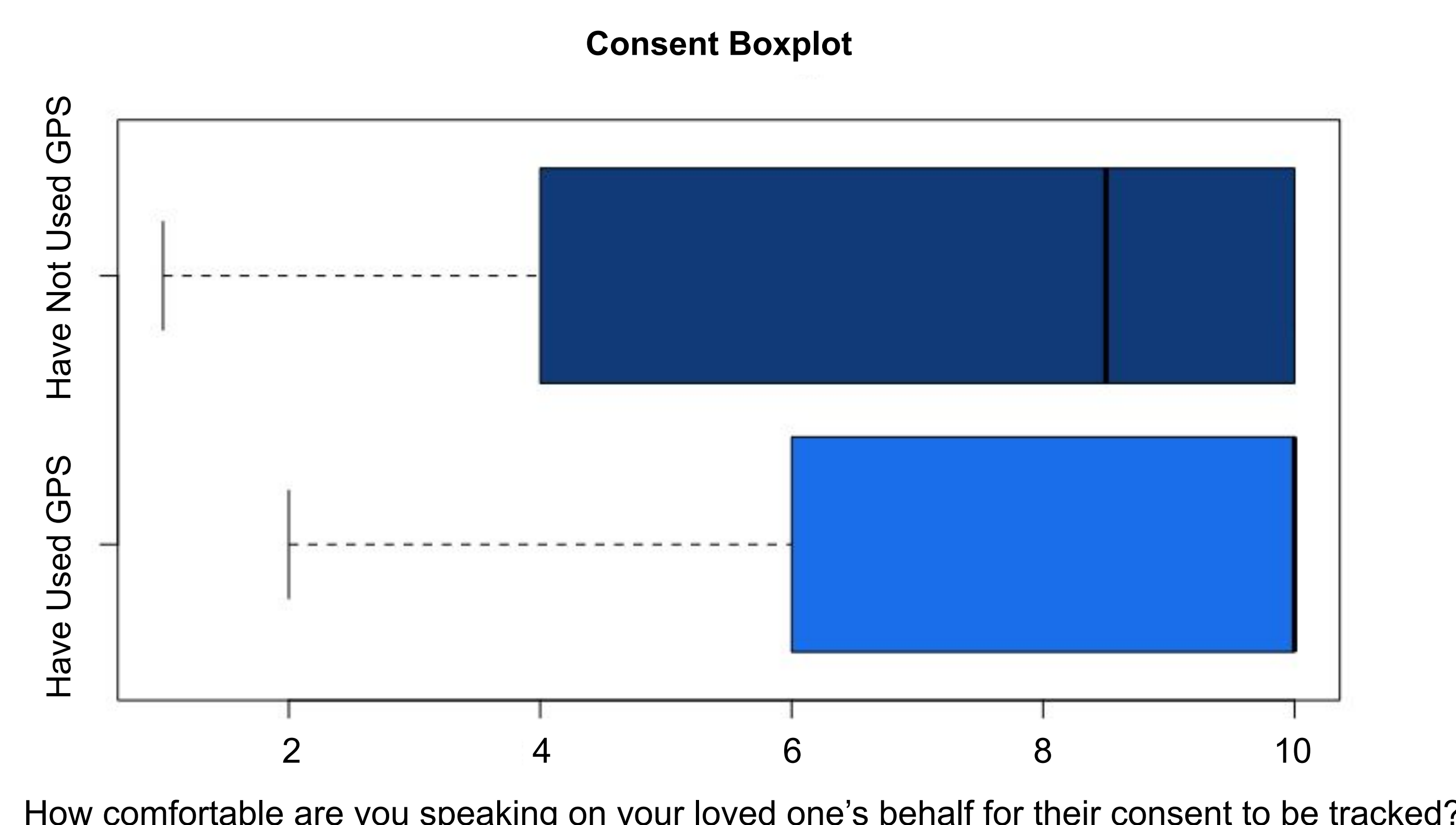


Figure 3: Consent boxplot of survey results display the score range based on how comfortable caregivers are with speaking on a loved one's behalf who have used GPS and have not used GPS for tracking their loved ones.

## References

- "ADI - Dementia Statistics - Dementia Statistics," [accessed May 15, 2022], <https://www.alzint.org/about/dementia-facts-figures/dementia-statistics/>.
- "2020 Alzheimer's Disease Facts and Figures," *Alzheimer's & Dementia* 16, no. 3 (2020): 391-460, <https://alz-journals.onlinelibrary.wiley.com/doi/full/10.1002/alz.12068>.

## Conclusion

- Only 28.3% of caregivers reported that their loved one wandered, which was lower than our expected value of 60%<sup>1</sup>. However 66.7% of those responses said their loved one wandered daily.
- From our survey results, 75.4% of participants reported that GPS tracking devices are beneficial in assisting them with their loved one's daily routine.
- 39.3% of caregivers showed preference for tracking devices that were not a watch or phone
- We found that caregivers have a moderate to high comfort level of speaking on their loved ones behalf to be tracked (scale of increasing comfortability from 1-10, average was 6.97 and median was 9)

## Future Work

- Sample a larger and more inclusive sample size.
- Publish our findings.
- Shape ethical requirements for assistive technology devices used in Dementia care.
- Dive further into ethical research surrounding assistive technology outside of dementia.

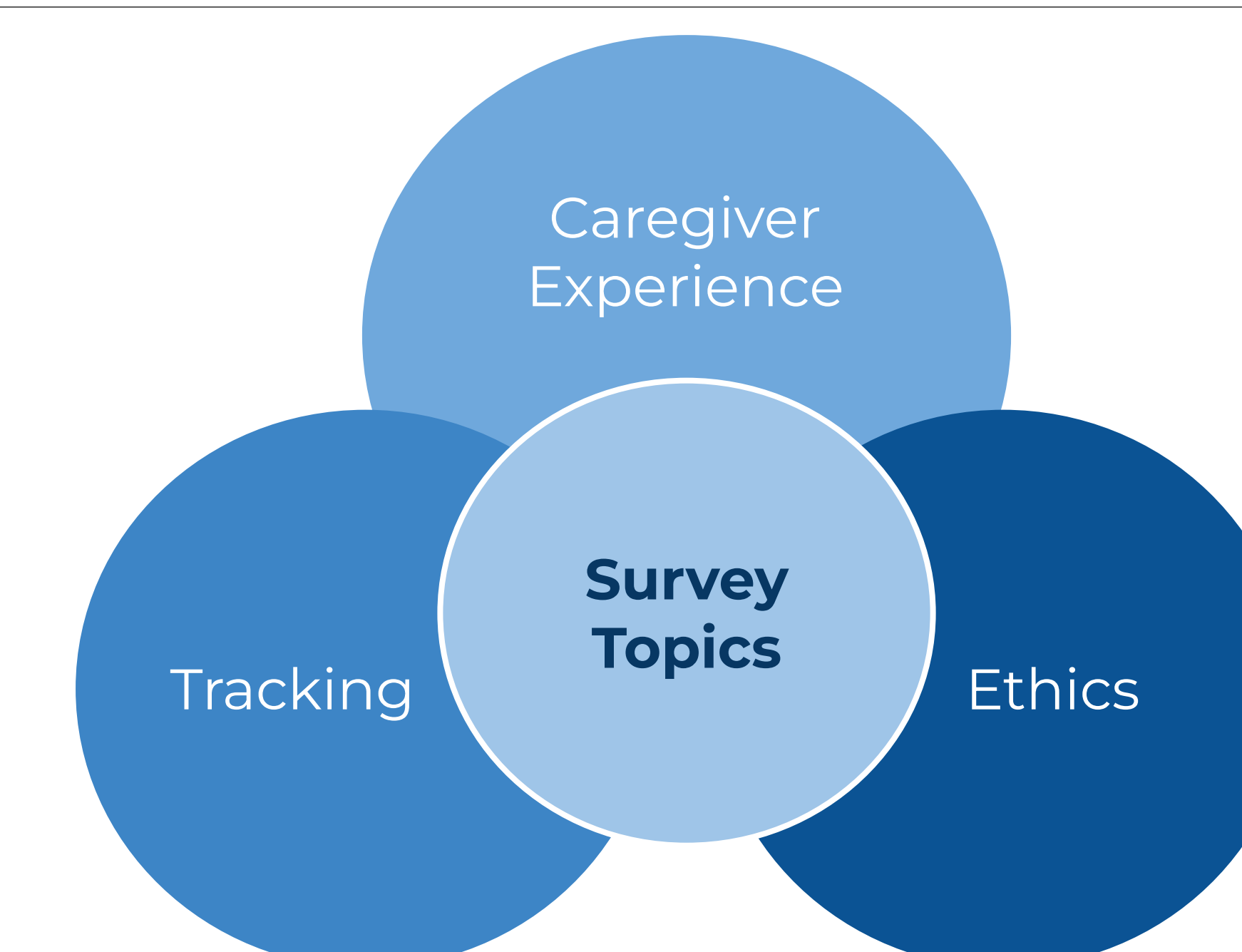


Figure 4: The key elements explored in our survey questions.

## Acknowledgements

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