User Experience and Compliance Rates of Remote Monitoring Technologies in Alzheimer's Disease: Preliminary Results of the RADAR-AD Study

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BACKGROUND

- Remote monitoring technologies (RMTs) can assess participants' function continuously and objectively during activities of daily living.
- Despite the potential of RMTs to assess function or assist early disease detection, there is skepticism that age or impairment may render participants unable or unwilling to comply with complex RMT protocols.
- The RADAR-AD study is in the unique position to assess this ability and willingness objectively.

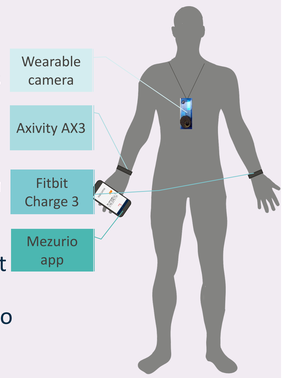
AIM OF THE STUDY

Investigate the compliance rates and participant feedback of participants in all Alzheimer's disease stages using active and passive remote monitoring technologies for 8 weeks.

STUDY DESIGN

During 8-weeks, participants from the RADAR-AD study

- Wear a wearable camera (optional) on 6 self-chosen days
- Wear 2 activity trackers (Axivity and Fitbit)
- Use twice daily an active smartphone app (Mezurio) with cognitive tasks
- Call bi-weekly with the researcher to discuss participant experience



Scan the QR code at the top right to learn more about the RADAR-AD study.

Outcomes

- Commitment: study duration completion percentage or wear time
- Compliance: task completion percentage
- User experience: bi-weekly semi-structured phone interviews

DATA & RESULTS

PARTICIPANTS IN RADAR-AD

INCLUSION CRITERIA

GROUP	AMYLOID	CDR	MMSE
Healthy control	Negative	0	>=28
Preclinical AD	Positive	0	>=27
Prodromal AD	Positive	0.5	24 - 26
Mild to moderate AD	Positive	>=1	18 - 23

DEMOGRAPHICS

N	Female n(%)	Age	Education years
63	34 (54%)	67 (8)	15 (4)
25	17 (68%)	69 (6)	15 (3)
35	13 (37%)	71 (8)	15 (4)
27	12 (44%)	69 (10)	13 (5)

COMMITMENT AND COMPLIANCE

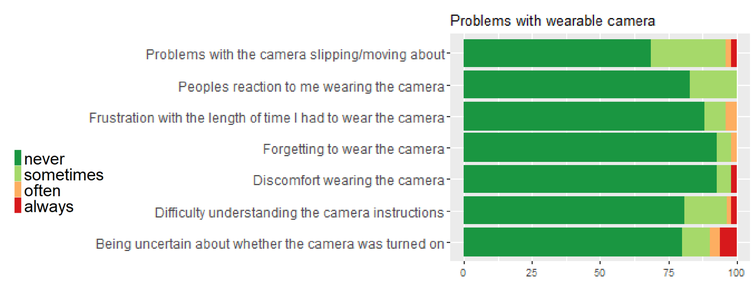
	Total	Healthy control	Preclinical AD	Prodromal AD	Mild-to-moderate AD
Wearable camera					
• N participants	• 53 (41%)	• 24 (43%)	• 12 (50%)	• 8 (30%)	• 9 (41%)
• N days used	• 7.4 (6-9)	• 6.5 (6-8)	• 7.9 (7-10)	• 9.6 (8-12)	• 7.0 (5-8)
• Hours used	• 15.5 (9.8-16.8)	• 15.6 (9.8-15.1)	• 18.4 (13.1-17.0)	• 16.2 (10.4-23.5)	• 10.7 (3.4-17.1)
Axivity					
• Commitment	• 75% (50-99%)	• 69% (49-97%)	• 83% (76-99%)	• 86% (74-100%)	• 63% (47-95%)
Fitbit					
• Commitment	• 82% (79-96%)	• 85% (87-96%)	• 85% (89-97%)	• 78% (73-94%)	• 73% (65-95%)
Mezurio					
• Commitment	• 88% (92-100%)	• 91% (92-100%)	• 90% (92-100%)	• 90% (94-100%)	• 80% (70-100%)
• Compliance	• 85%	• 85%	• 87%	• 80%	• 77%

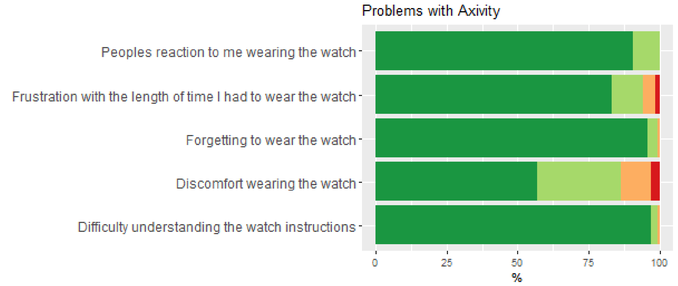
Numbers show mean (Q1-Q3). In total, only 129 participants were asked to use the wearable camera, due to local regulations.

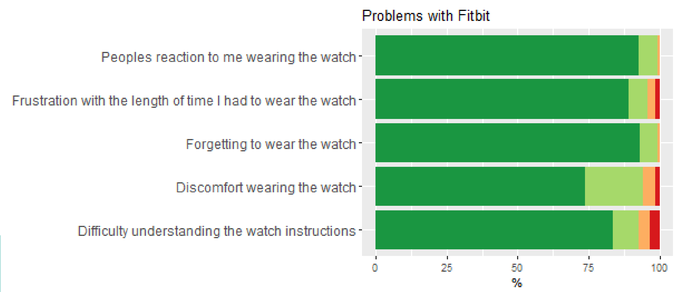
CONCLUSION

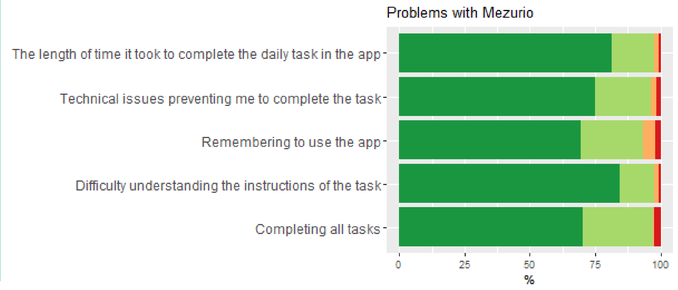
- This study shows that AD patients are able and willing to comply and engage with technology.
- Compliance and commitment seem to be lower in the mild-to-moderate AD group, but these differences are not significant and compliance rates are therefore independent of the disease stage.
- User experience is high with >80% of the participants experiencing no or only small problems with any of the devices.

USER EXPERIENCE AFTER 8 WEEKS









www.radar-ad.org

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