

The main logo for SERVICE, featuring a stylized molecular structure with four colored spheres (green, blue, red, orange) connected by grey lines, followed by the word "SERVICE" in large blue capital letters.

Social and Emotional Resilience for the Vulnerable Impacted by the COVID-19 Emergency

The team here today:

Prof Blaine Price, Prof Clifford Stevenson, Dr Avelie Stuart, Dr Dmitri Katz, Dr Lydia Harkin, Dr Miriam Park, Ronnie Yan, Dr Catherine Talbot

Supported by:



Welcome to the launch of



SERVICE

<https://serviceproject.org.uk>

Workshop schedule:

What is the SERVICE project?

- Qualitative evidence of older adult loneliness needs during COVID-19
 - Development of our digital platform
 - Trial evidence of our wellbeing app
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- A discussion: the vision for the future

Background:

- COVID-19 isolation linked to loneliness, anxiety, depression especially amplifying loneliness amongst those already chronically lonely
- Older adults disproportionately affected by COVID-19 and restrictions (Campaign to End Loneliness, 2021; Office for National Statistics, 2020)
- Also burden on family, carers, support systems, incl. Social Prescribing

What is unique for older adults?

- Older adulthood accompanied by multiple interlinked identity transitions resulting in:
 - Shrinking social circles
 - Fewer economic resources
 - Increased medical vulnerabilities(e.g. Jetten & Pachana, 2012).
- Older adults have typically held good coping strategies for these transitions e.g.:
 - Changing status in their family role (grandparent responsibilities)
 - Volunteering

The pandemic cut physical contact with many of these identity resources

Technology was vital during the COVID-19 pandemic

➤ A particular lifeline for individuals living alone or housebound during the pandemic (e.g. adults over 75 years in the UK)

(Galea, Merchant, & Lurie, 2020)

➤ However, technology is often framed as unsuitable for older adults, and older adults report low confidence using technology

(Holaday et al., 2021)

➤ How can technology fulfil the unique social identity needs in older adulthood?

Qualitative investigation of the social impact of COVID-19 on older adults

Focus groups, recruited via Trent Ageing Panel

- *N*=33, 11 groups, selected for diversity of living situations
- Discussed the shared cultural experiences of COVID-19 lockdowns

Interviews, recruited by Age UK Exeter

- 9 medically vulnerable older adults interviewed at 3 time points (Late 2019, Mid 2020; Early 2021)
- Reviewing changes over the course of 14 months of the pandemic

COVID-19 exaggerates identity-related vulnerabilities to loneliness in older adults

- COVID-19 restrictions impacted undermined **fragile group memberships and relationships**, and this was often seen as a permanent rather than temporary change
- Categorisation of older people as medically vulnerable undermined **participation** and **usefulness**, intensifying identity threats of marginalisation and redundancy in later life
- Receiving support but being unable **reciprocate** fuels the identity threat of burdensomeness and creates loneliness
- Increased reliance on **technology** can create feelings of age difference and alienation

Resilience can be found in...

- Strengthening local community identities through support and participation
- Reassertion of usefulness through mutual support amongst friends, neighbours, family
- Pride in national identity or identity of older adults as 'war babies'
- Being a 'refuser of help' (incl. technology)
- Discussion around whether they were experiencing 'loneliness' - representing desire to be resilient

Challenges and opportunities in applying experiential evidence to app design

We had theoretical steer from Social Identity Theory and Groups4Health – identity mapping, reflection and strategies for maintaining and gaining identities

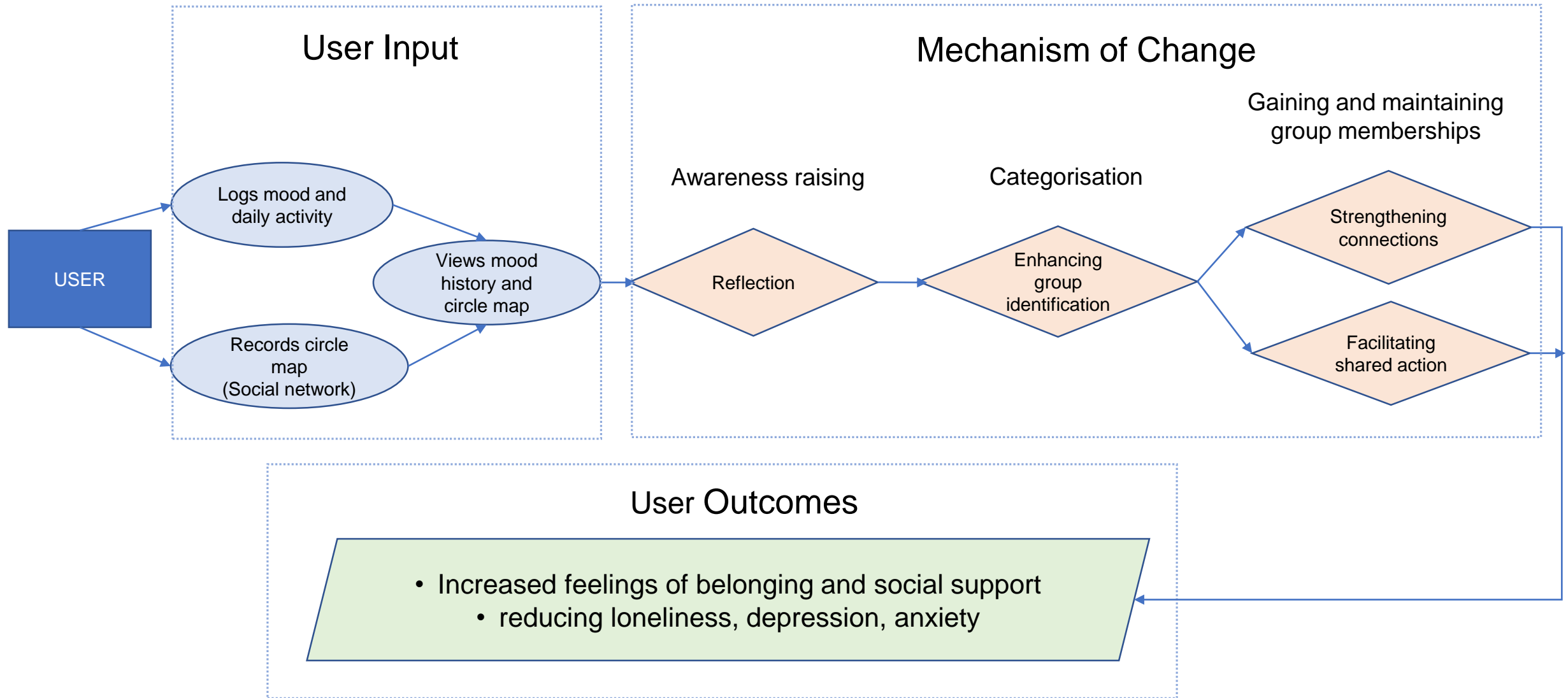
Digital technology affords opportunity to monitor the daily lives of older adults, facilitating data analysis, self-reflection and sharing of wellbeing data

Many older adults determined not to identify as lonely/in need of help, or be reliant on technology - so we had to provide clear value

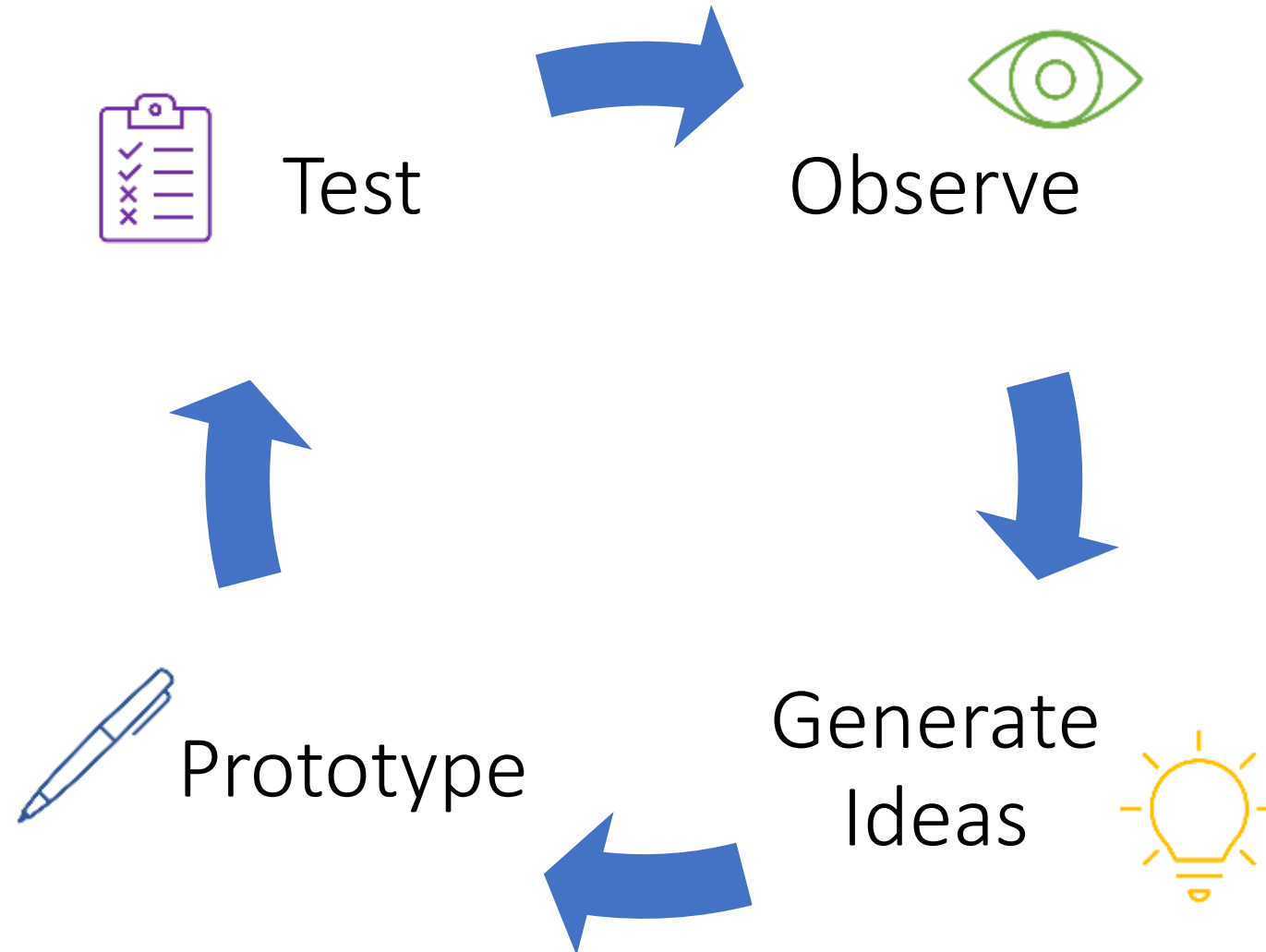


Our research question became: how do we accommodate older adults' identity needs into a theoretically based digital intervention?

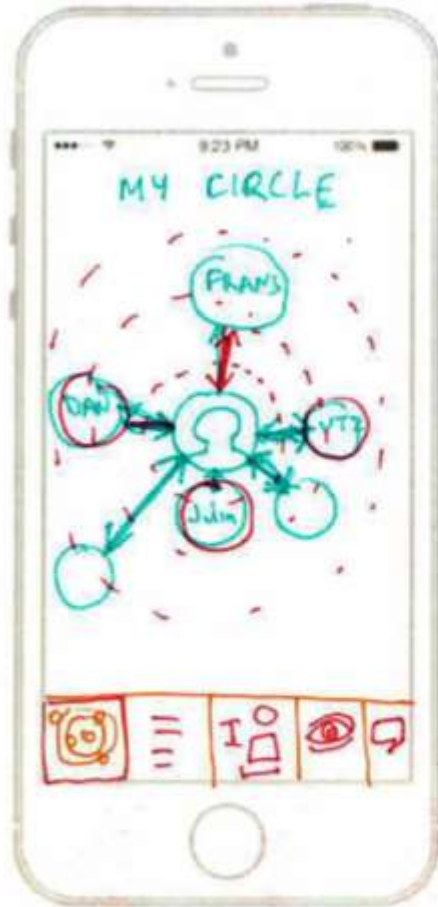
Social Identity Theory intervention mechanisms:



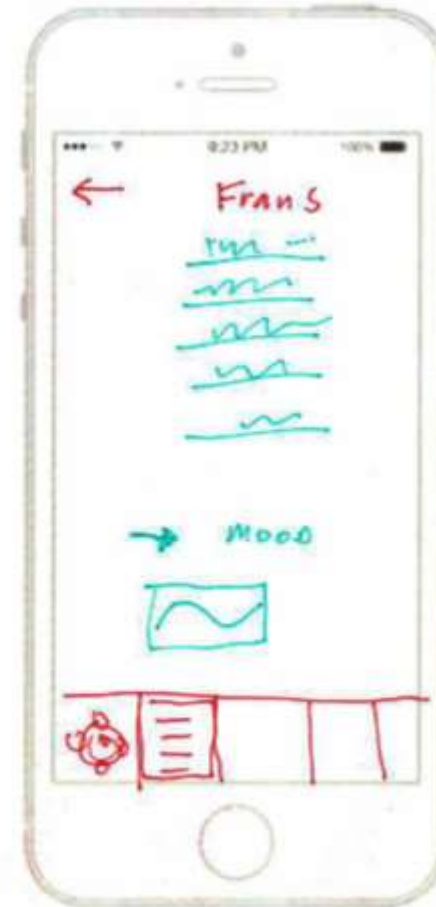
User-Centred Design of Circle App



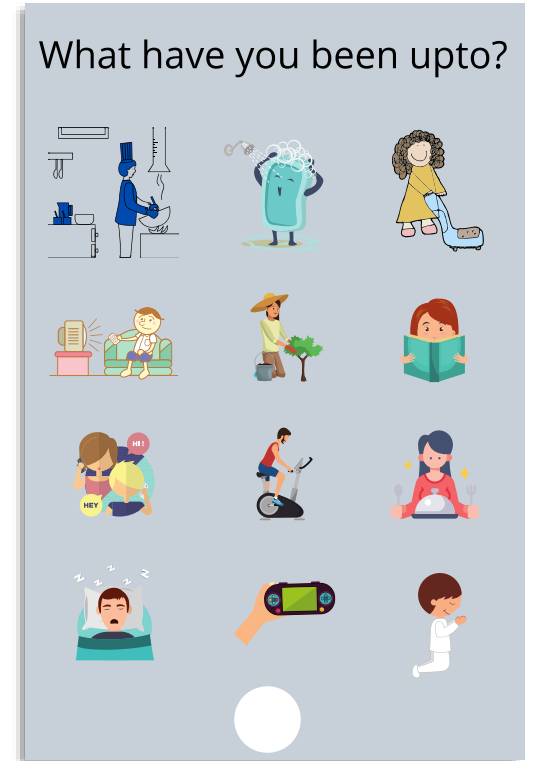
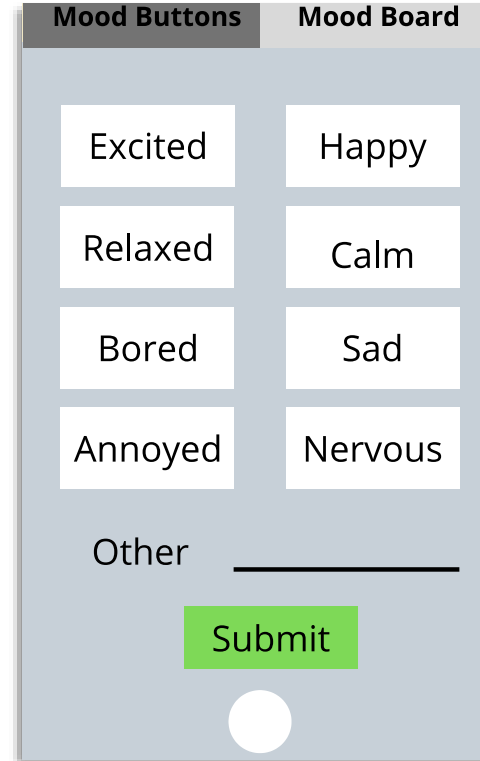
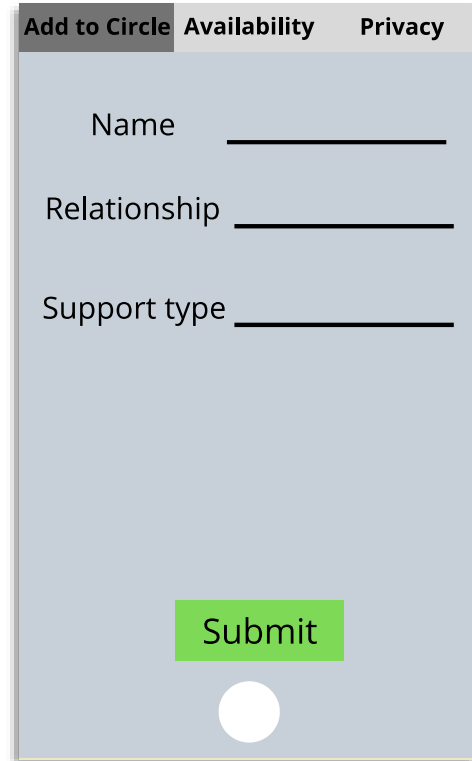
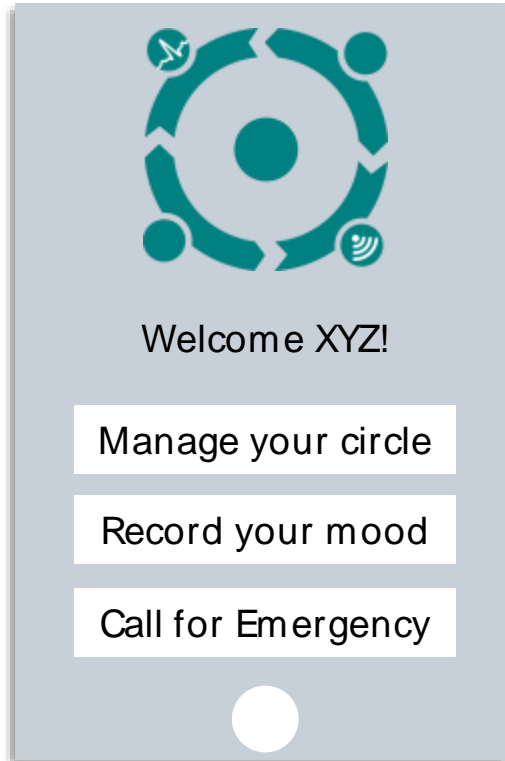
Early prototypes



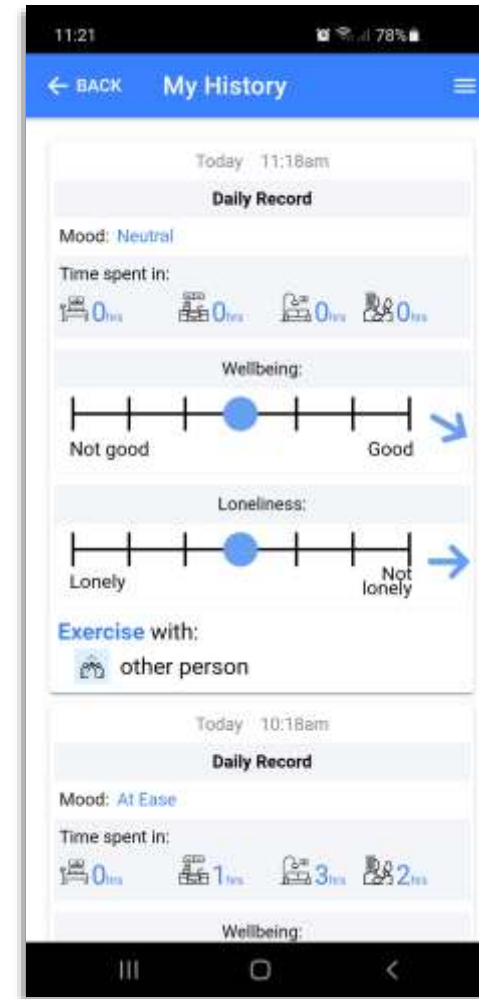
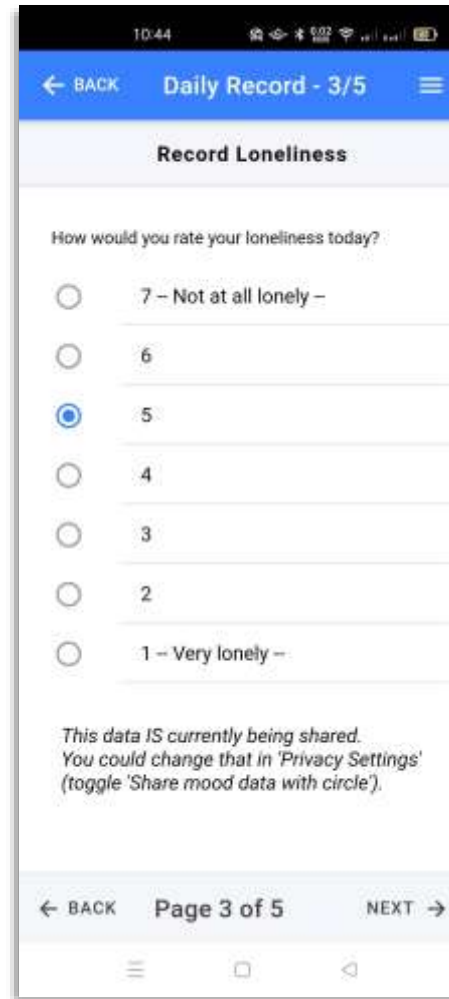
CoS Visualization



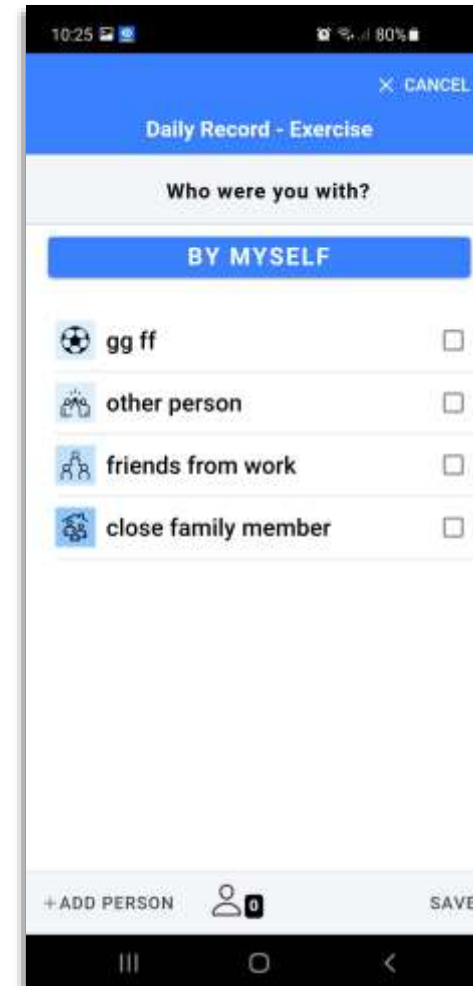
Next versions



Reflection:



Activities and social interactions



User Studies:

(Concept focus groups, N=33; Concept interviews, N=10; Prototype usability trial, N=12)

Study recruitment supported by our partners on the project – Wellmoor and Trent Aging Panel



Reflection on wellbeing,
connectedness, loneliness, and
group belonging



Facilitates shared activities and
mutual support



Concerns of increased risks of
compounding loneliness.

So how does this app perform as an intervention for wellbeing?

Jan-March 2022 : A four week trial of the app

Recruitment from older adult participant panels and partner organisations

Completed baseline surveys, and randomised into experimental and control conditions

Experimental group: onboarded, encouraged daily app use, surveyed at two and four weeks

Control group: waitlist, surveyed at two and four weeks

Evaluation Trial

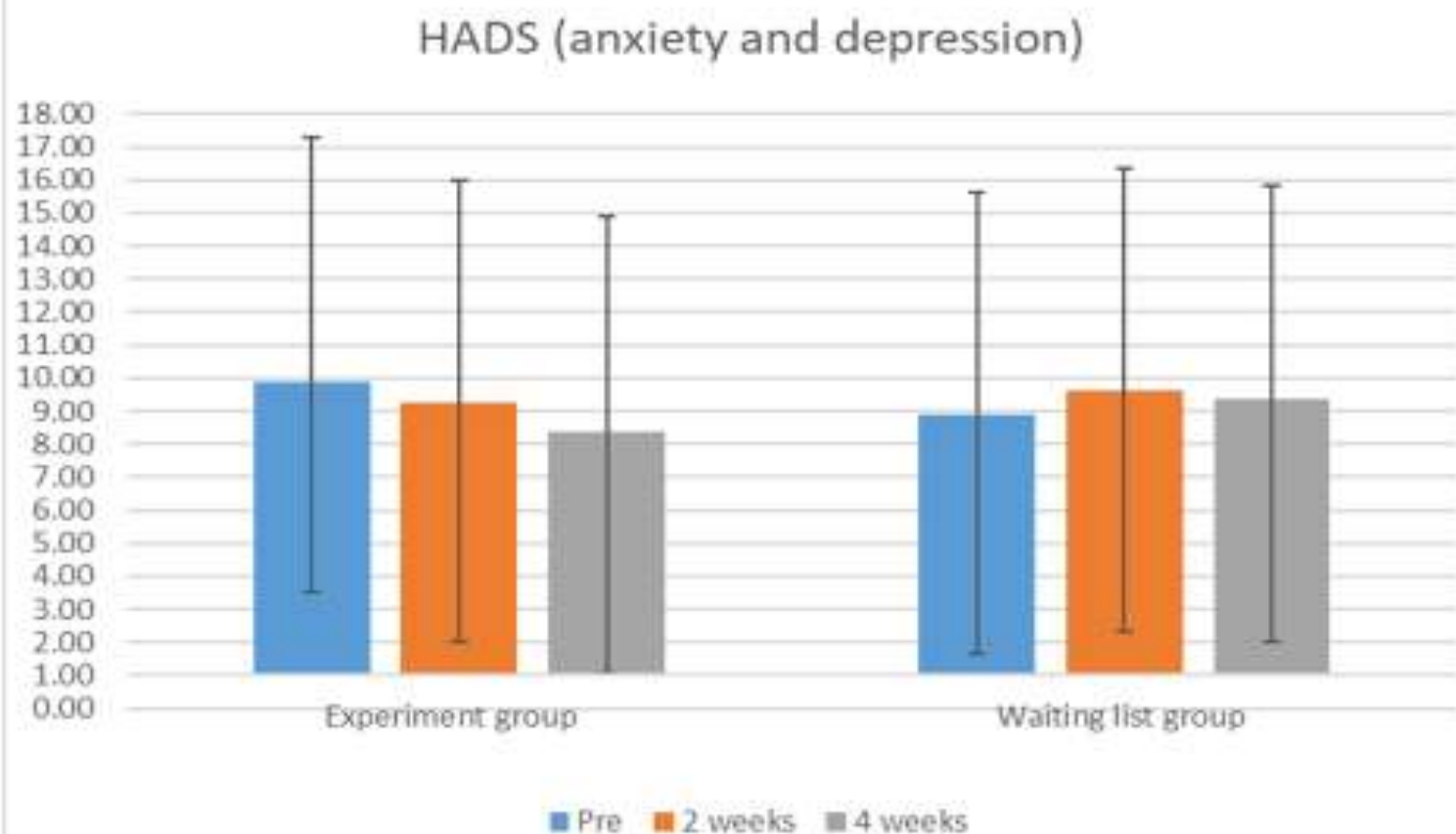
- The purpose of the quantitative data collection was to gauge participants' anxiety and depression levels at the three time points
- Recruitment was via the Nottingham Trent Ageing Panel, for UK based people 50+ who had a smartphone

	N	Age
Experimental Group (App users)	44	68.4 (SD=8.23)
Control Group (on waiting list)	55	67.49 (SD=9.77)

Evaluation Trial

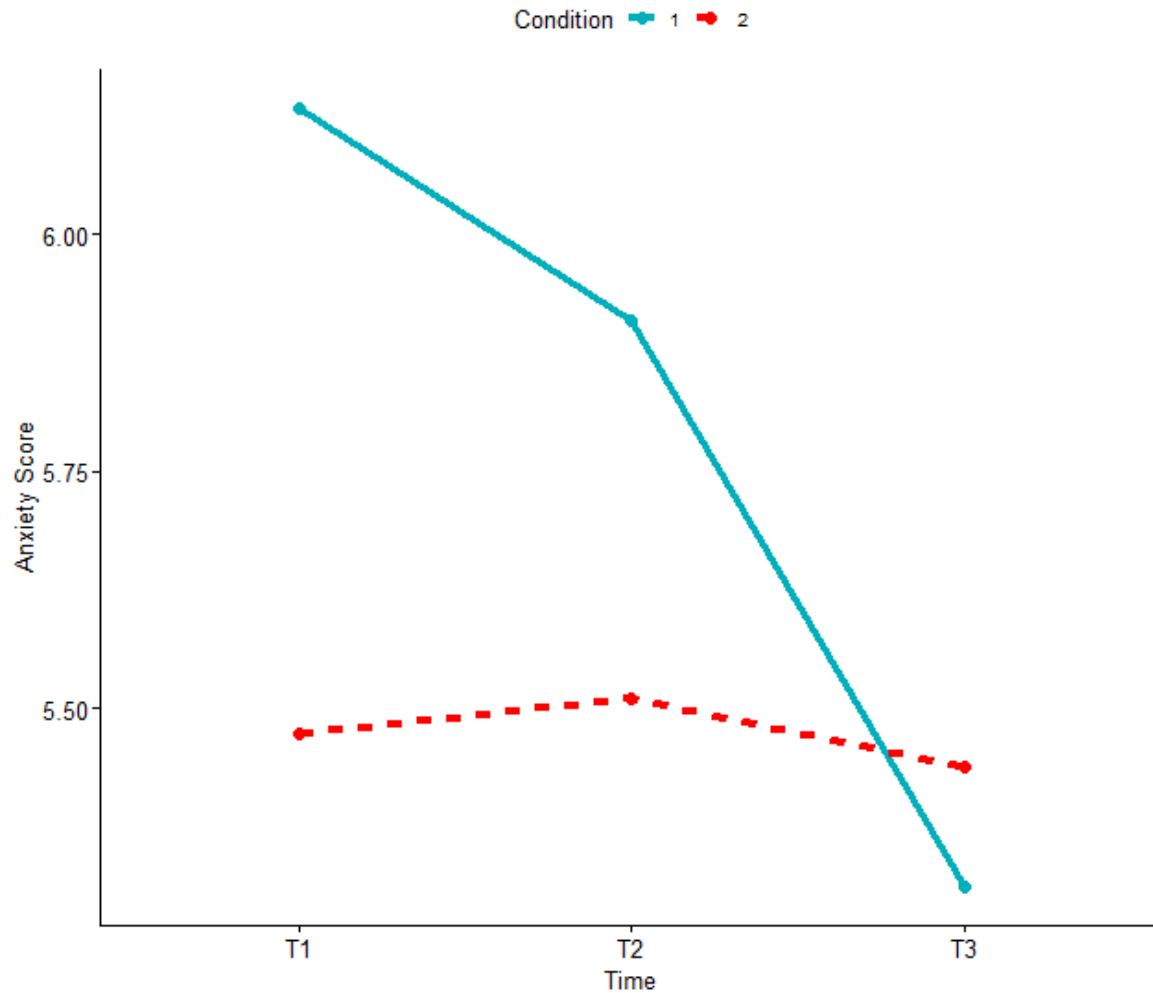
- A repeated measures ANCOVA was conducted to determine statistically significant differences across the timepoints between the groups (APP users versus those in the control group) on anxiety and depression controlling for age and gender
- There was a significant interaction effect of HADS and group condition ($F(2, 92) = 3.205, p = .043, \eta^2 = .033$). Post-hoc tests using Bonferroni method demonstrated that there were no significant differences between groups across the timepoints
- Interaction effects of HADS and age and HADS and gender were not significant. Age was a significant predictor of HADS ($F(1, 186) = 12.785, p = .001, \eta^2 = .121$)
- There was, however, no main effect of time points on HADS ($F(2, 186) = 1.31, p > .05, \eta^2 = .014$)
- The significant interaction effect between time points and group condition held for depression ($F(2, 92) = 3.343, p = .037, \eta^2 = .035$) when scored separately from anxiety

Evaluation Trial

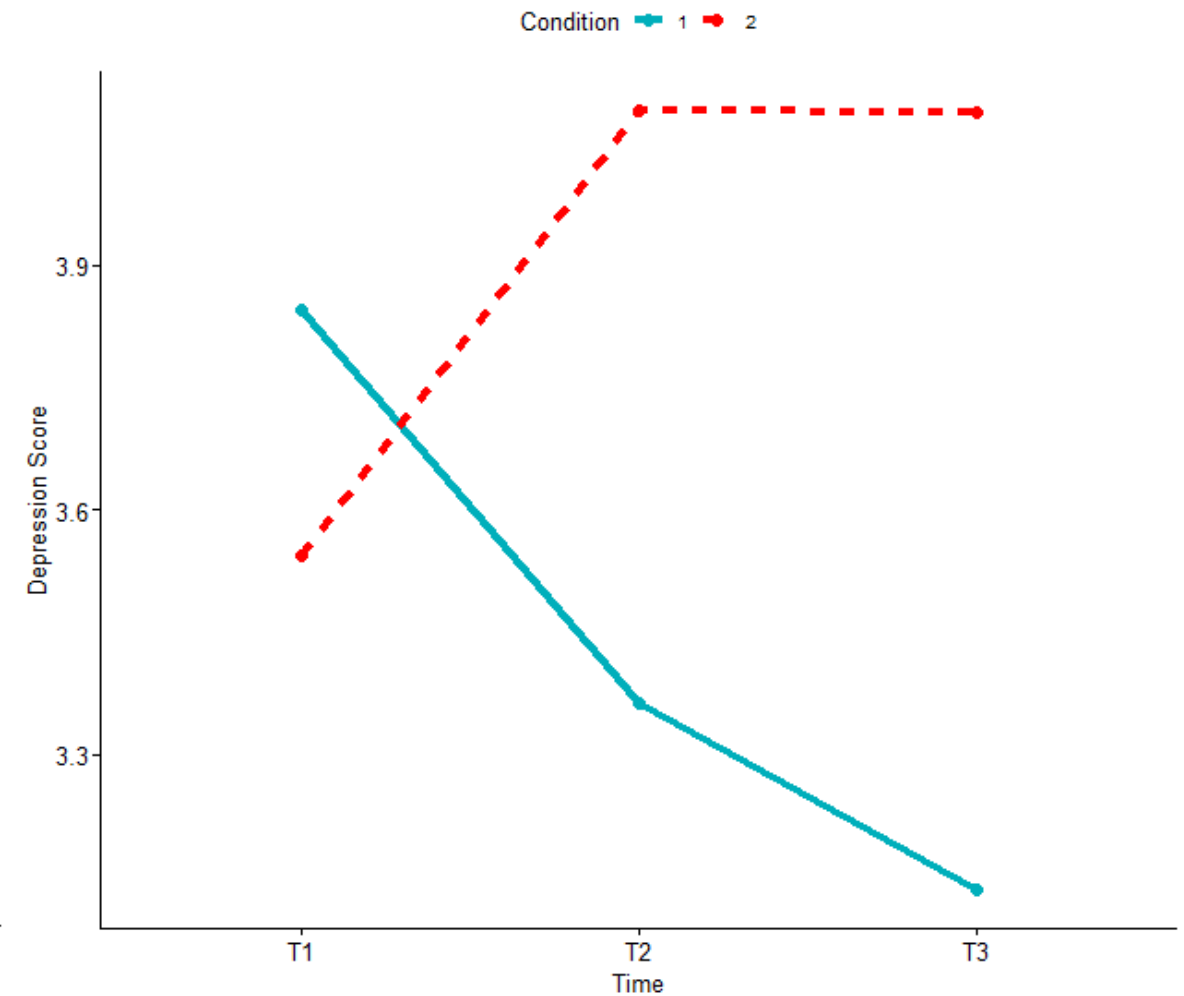


- Group condition X timepoints interaction is significant (with age and gender controlled)
- For the experimental group, the difference between T1 (pre-) and T3 (4 weeks) was significant

Symptoms of Anxiety Over Time



Symptoms of Depression Over Time

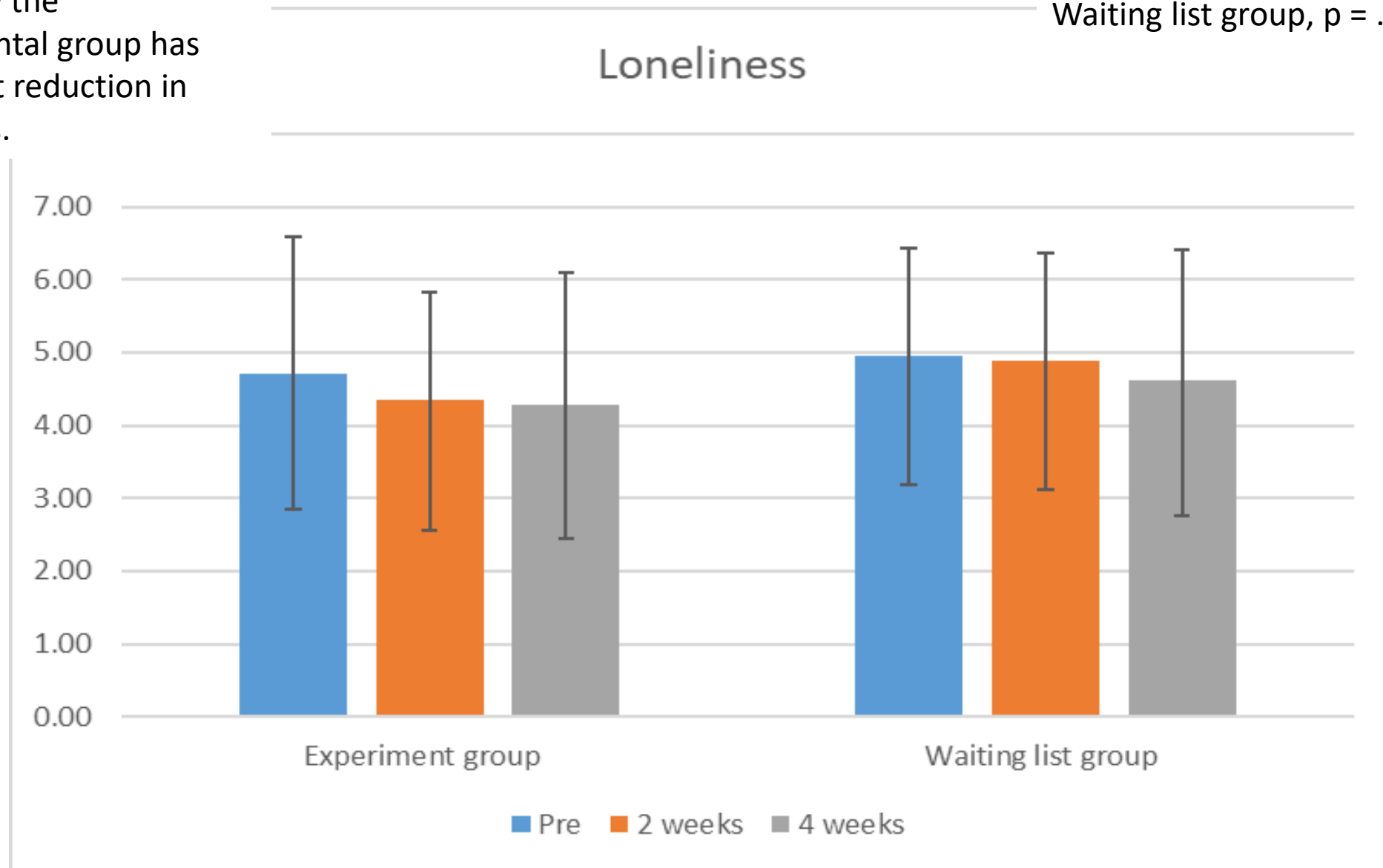


- The interaction between condition and anxiety, and condition and depression is significant
- Post hoc t-tests reveal that depression and anxiety scores are significantly reduced for the experimental group between T1 and 3, differences do not reach significance levels for the control group

Loneliness reduced over time in both groups

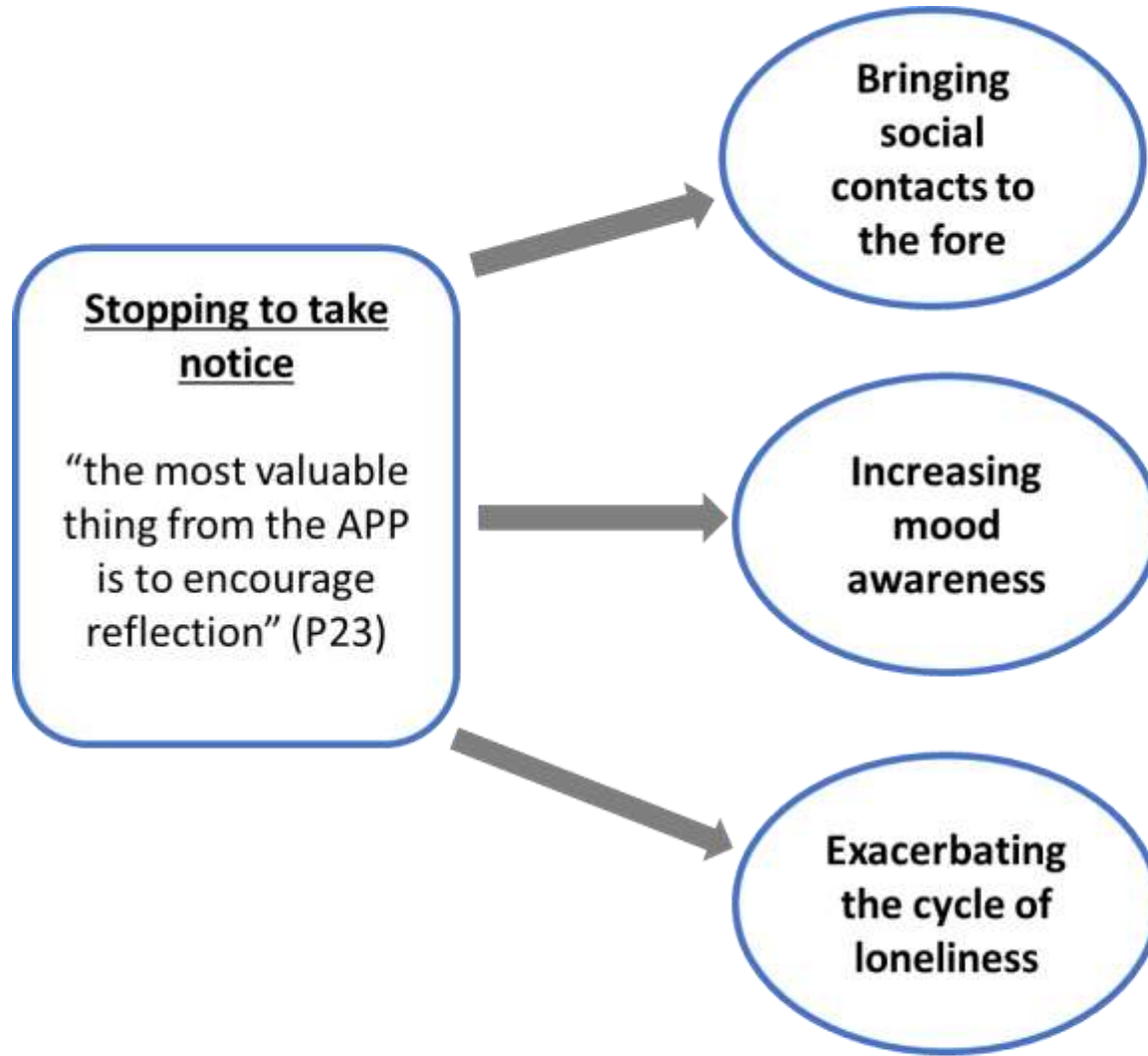
At T2 only the experimental group has significant reduction in loneliness.

Paired samples t-test from T1 to T3: Experimental group $p = .03^*$, $d = .3$; Waiting list group, $p = .05$, $d = .26$.



How did trial participants experience the app?

N= 44, mAge = 68.44 years,
Semi-structured interviews lasting between 45 - 90 mins
Thematic analysis



“The fact that **there are people who want to be in contact with me**. It's your **self confidence** and your **self worth** is enhanced by that’ (P13 F, 84 years)



“I suppose it does make me feel a bit you realize that **things aren't as bad as you think** perhaps you know you don't get, **you don't start spiralling down**’ (P53 F, 60 years)



“If I had been lonely and had been forced to record it, it might have made me worse. Because I think sometimes, **you can feel more lonely by having to acknowledge it**. There's no distraction” (P18 F, 69 years)



Re-appraising loneliness

- Participants explained that the app targeted loneliness through the presentation of conflicting evidence
- The visual representation of their circle did not align with the concept of a 'lonely person'

Expectations



Reality



"I mean there are days when you're very down like back in January, I was very down because the village sort of shuts off nobody goes out, nobody wants to socialize so you do feel very lonely and then, when you actually start to key in how many people you've seen that day and how many people texted that day you realize that actually you're not lonely" (P53 F, 60 years)

Acting as analysts

- Some participants felt the app could encourage users to analyse their data to identify factors that exacerbate loneliness and low mood.
- Through the process of *making associations*, participants felt users may be encouraged to identify loneliness solutions and take action.
- Some mentioned that it would be helpful to discuss their data with professionals to identify loneliness solutions

It also made me think some days oh you haven't actually spoken to anybody or you haven't done anything other than watch the TV with the cat, or exercise on your own. So it was interesting and very much from a reflection point of view, I felt to understand and sort of start to look at trends from myself as to what I was doing and what I wasn't doing. (P55, F, 50 yrs)

In summary

- The pandemic undermined:
 - social participation,
 - perceived usefulness, and
 - reciprocal connections between older adults and their networks
- We have co-developed a platform that centres on **social reflection**, and thereby enhance group identification through **encouraging shared activities** and **strengthening existing connections**. These theoretically derived processes aim to protect wellbeing by drawing on identities and groups as resources.
- Our trial finds promising evidence that our app can have positive implications for feelings of anxiety, depression, and loneliness

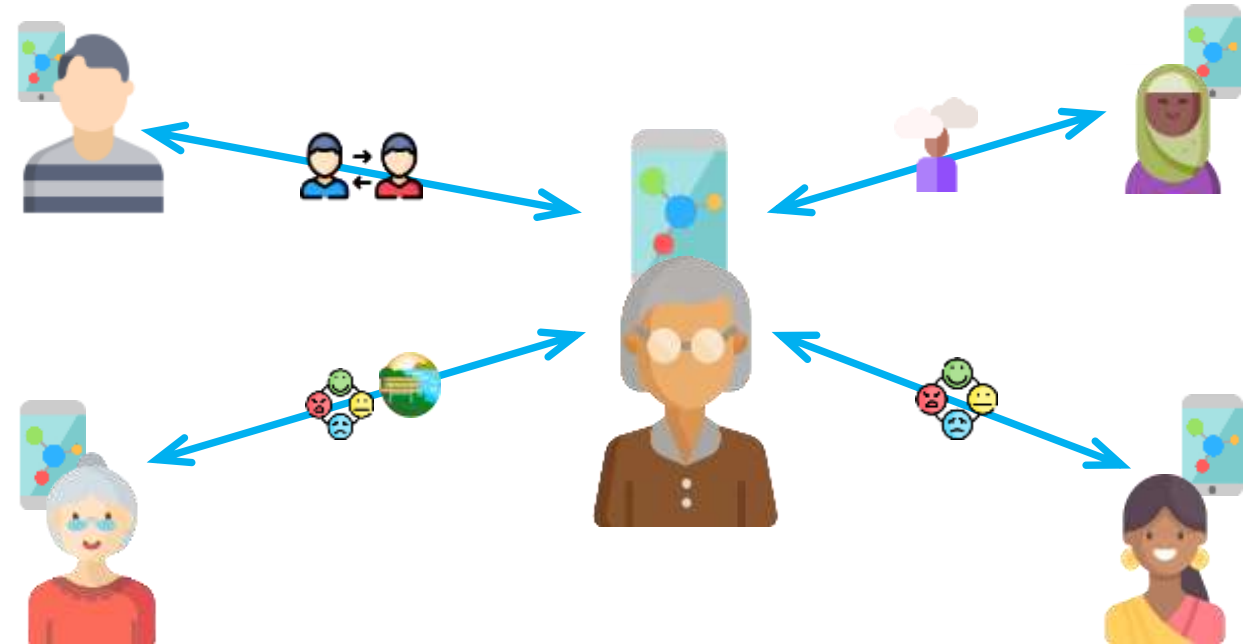
Future Plans

To provide meaningful technological solutions, we must work towards a person-centred digital support network that integrates identity and health needs

We hope to build

- a **reciprocal** support network
- Use adaptive software engineering and machine learning to enable more smart features such as **personalised** activity suggestions, community based groups to join, as well as **prediction of wellbeing decline**
- Dashboards and **decision support** for caregivers/professional healthcare staff

Janet decides what to share...



Thank you

To our researchers, designers, engineers, partners, and participants

Our advisory panel:

Jess Cohen – Age UK Exeter

Maria Willis – Head of Social Prescribing PCN Development

Dr Maria Panourgia - Consultant Geriatrician, Milton Keynes Uni Hospital NHS Fdn Trust

Dr Rowena Hill – Associate Professor & member of the C19 National Foresight Group

Prof Suvo Mitra - Professor & Lead for TAP

Prof Bashar Nuseibeh – Professor @ The Open University

Prof Arosha Bandara – Professor @ The Open University

Partners organisations:

Wellmoor, Age UK Exeter, Wrochester County Council

And thank you for listening !

