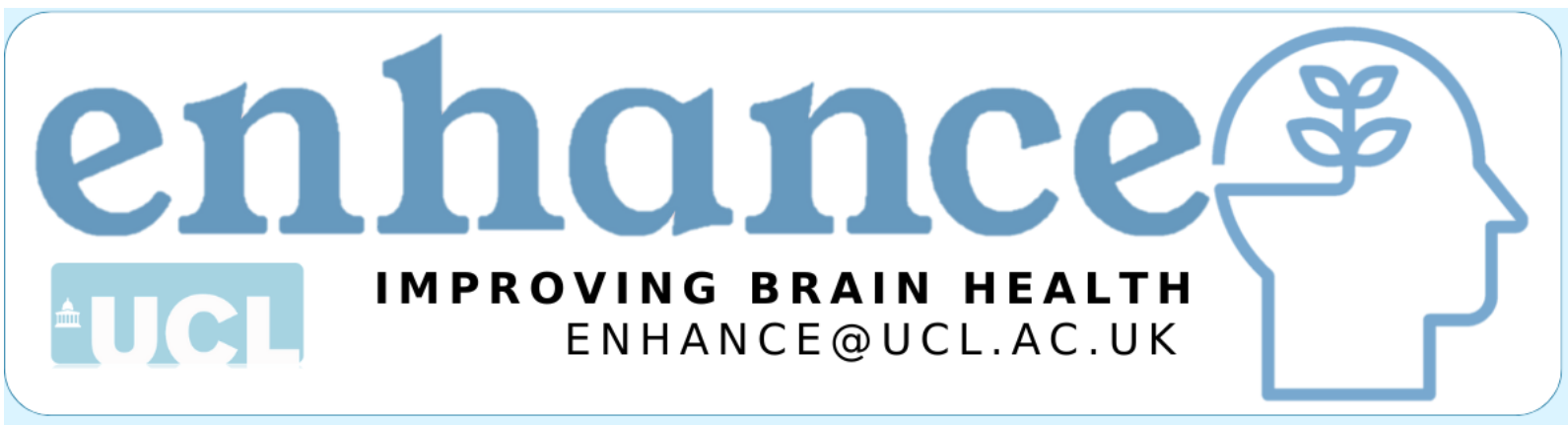




ENHANCE: Feasibility and acceptability trial of a coach-supported app to prevent dementia

Sergi Costafreda^{1,2}, James Jamison¹, Tsz Kiu Clare Yu¹, Louise Allan³, Richard Boczek⁴, Sue Boex, Youngjun Cho¹, Andrea Hilton⁴, Rachael Hunter¹, Fahima Khatun¹, Teresa Lee¹, Monica Manela¹, Louise Marston¹, Vrushti Mehta¹, Naaheed Mukadam¹, Hee Kyung Park¹, Greta Rait¹, Penny Rapaport^{1,2}, Joanne Reeve⁴, Anne Schilder¹, Aneesha Singh¹, Andrew Sommerlad^{1,2}, Elizabeth Steed⁵, Jing Yi Weng¹, Gill Livingston^{1,2}

1 University College London; 2 North London NHS Foundation Trust; 3 University of Exeter; 4 University of Hull; 5 Queen Mary University of London

Background

- Dementia risk may be reduced by addressing modifiable risk factors.
- These risks cluster in people with less education, lower socio-economic status and ethnic minority background. These groups are under-represented in prevention research.

The ENHANCE Intervention

- A blended eHealth intervention with coach plus app, delivering a personalised 3-month programme across risk factors assessed at baseline.
- Face-to-face onboarding; participants choose up to 3 risk factors, 6 weeks each.
- Weekly app content: brain-training games, videos and self-monitoring questionnaires
- Fortnightly meetings with a trained non-specialist coach

Risk Factors Targeted

High Blood Pressure (SYS/DIAS>140/90)	High Blood sugar (HbA1c ≥ 48 mmol/mol)
Obesity (BMI>30)	Physical inactivity (< 150 min/week)
Smoking (≥ 7 cigarettes in past week)	Alcohol (> 14 units/week)
Depression (PHQ-9 ≥ 9)	Hearing loss (HearWHO screen + no hearing aid)
Social isolation (LSNS-6 < 6)	Low Education (Left school ≤ 16 or no qualifications)

The ENHANCE App

Personalised coaching plus app content

Managing Blood Pressure module

Games and activity

Self-monitoring and app prompts

Rewards for weekly activities

Aims

- Determine feasibility of a full RCT of the ENHANCE intervention.
- Determine acceptability to participants and whether it is deliverable by staff.
- Estimate recruitment, uptake, engagement, adherence and retention at 3 months

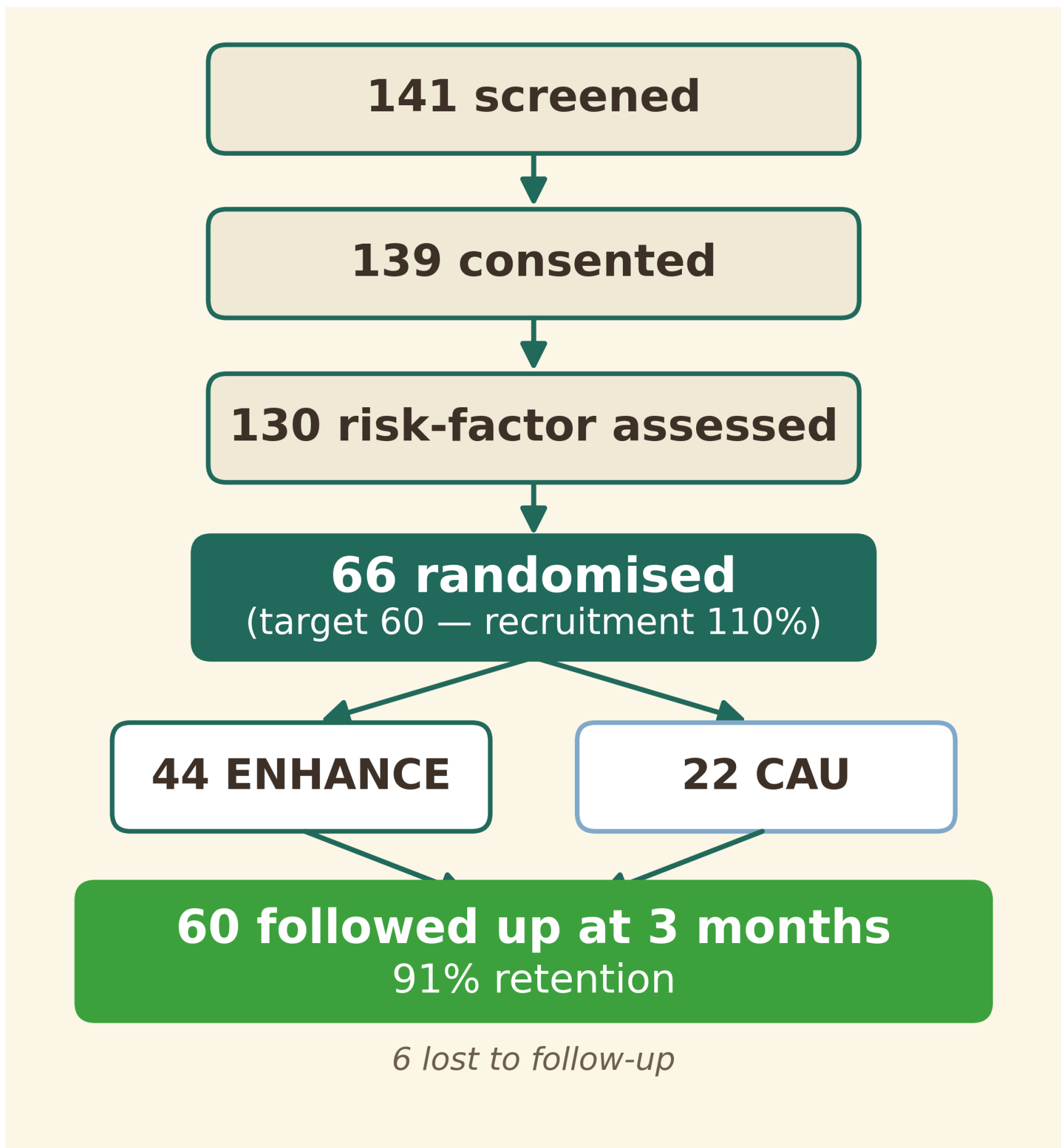
Methods

- Two-arm, individually randomised feasibility trial; 2:1 allocation: ENHANCE vs care as usual.
- Recruited through GP practices and community settings, with focus on people living in the 40% most deprived areas.
- Sites in London, North-East and North-West England, Cardiff and Southampton.
- Baseline and 3-month nurse assessments included behavioural, clinical and NIH Toolbox
- Assessors at 3 months: blinded to allocation; coaches and participants: not blinded.

Eligibility

- Aged 60-80, living in the community, without a dementia diagnosis
- Registered with a GP and able to consent.
- Having three or more of the 10 modifiable risk factors according to our baseline assessment.

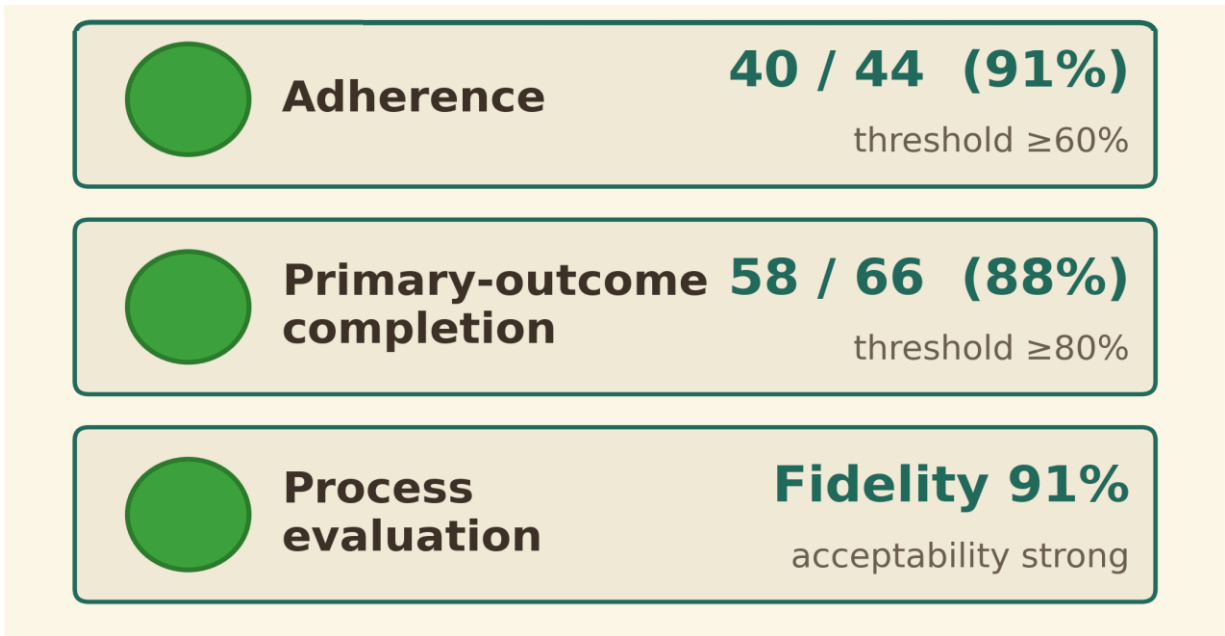
Participant Flow



Recruitment and Reach

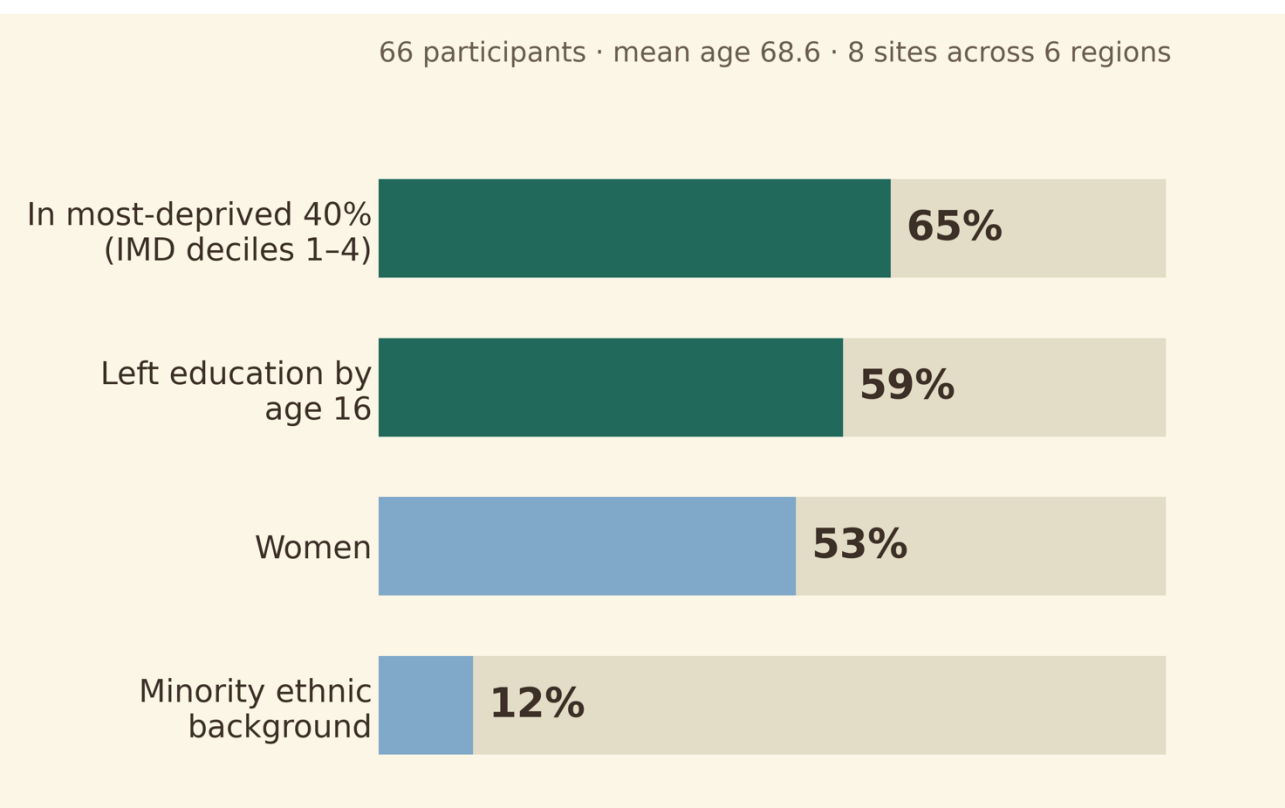
- Exceeded target: 66 randomised (target 60), 110%, across 8 sites in 6 regions.
- Recruitment accelerated from 0.8 to 4.9 participants/week after a Sept 2025 eligibility amendment and the addition of community recruitment.
- Last patient last visit for 3-month follow-up was 28 May 2026.

Progression criteria- All GREEN

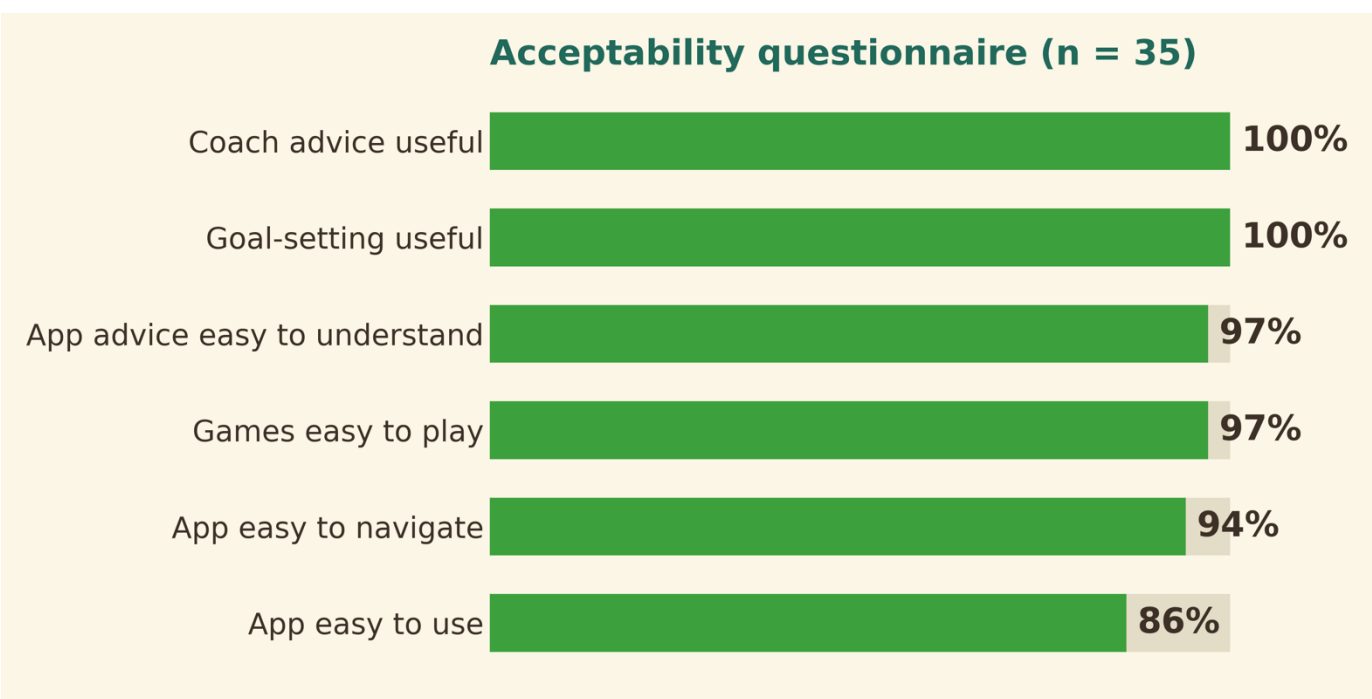


- Adherence: engaged outside coaching at least fortnightly over two-thirds of intervention window.
- Primary outcome: NIH Toolbox cognition battery collected.
- Process evaluation: 42 dual-rated coaching sessions across 25 participants, 17 coaches and 7 sites. Acceptability questionnaire, interviews.

Reaching the underserved



Acceptability questionnaire (n=35)



More reserved views on in-app messaging (69%) and videos (77%); both are targeted in the planned app update before main RCT.

Qualitative follow up interviews

"I really liked the games... I really enjoyed those."

Participant 1-003

"I think she was actually the key to the whole system working."

Participant 1-005

"I think it [coaching] helped me to be a better practitioner."

Coach, site 5

Conclusions on Feasibility and Acceptability: ENHANCE met all pre-specified progression criteria, reached underserved groups, and was acceptable to participants and delivery staff

66 Randomised

Target 60; recruited across 8 sites in 6 regions

91% Retained

60/66 followed up at 3 months

65% Living in 40% most deprived areas

Index of Multiple Deprivation - deciles 1-4

100% Coach advice useful; goal-setting useful

Acceptability questionnaire, n=35

What is being refined before the main RCT

- Coaching support and tracker-informed feedback, keeping the coach-app loop central.
- In-app messaging and videos

Why this matters

- The feasibility trial tested whether ENHANCE can be delivered in real services.
- Recruitment through GP practices and community settings improved reach.
- The main RCT can now test whether sustained multidomain support changes cognition.

Main RCT pathway

- Planned sample: 588 participants UK-wide.
- Planned intervention: 12-month app with coaching support.