

Can recipe boxes improve dietary quality and food agency?

A pilot and feasibility randomised controlled trial in households with school-aged children

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The objective

Recipe boxes may enable families to prepare healthier meals at home, improve dietary quality and food agency. In this pilot randomised controlled trial we tested the acceptability of participant recruitment and enrollment, and the recipe box subscription model. Results will inform a future larger-scale effectiveness trial.



The intervention

The trial utilised a commercial recipe box platform to provide families with structured, yet flexible, meal components:

Subscription model: The intervention group received a 6-week subscription discounted by 60% in week 1 and 50% for weeks 2–6. A further 20% discount was offered for an optional 4-week extension.

Choice and flexibility: Participants chose from over 200 weekly recipes, typically ordering 2 to 5 recipes per week (2 to 5 portions each).

Principle of food agency: By providing fresh, pre-measured ingredients and step-by-step instructions, the intervention aimed to reduce the stress of meal sourcing and preparation in busy households.

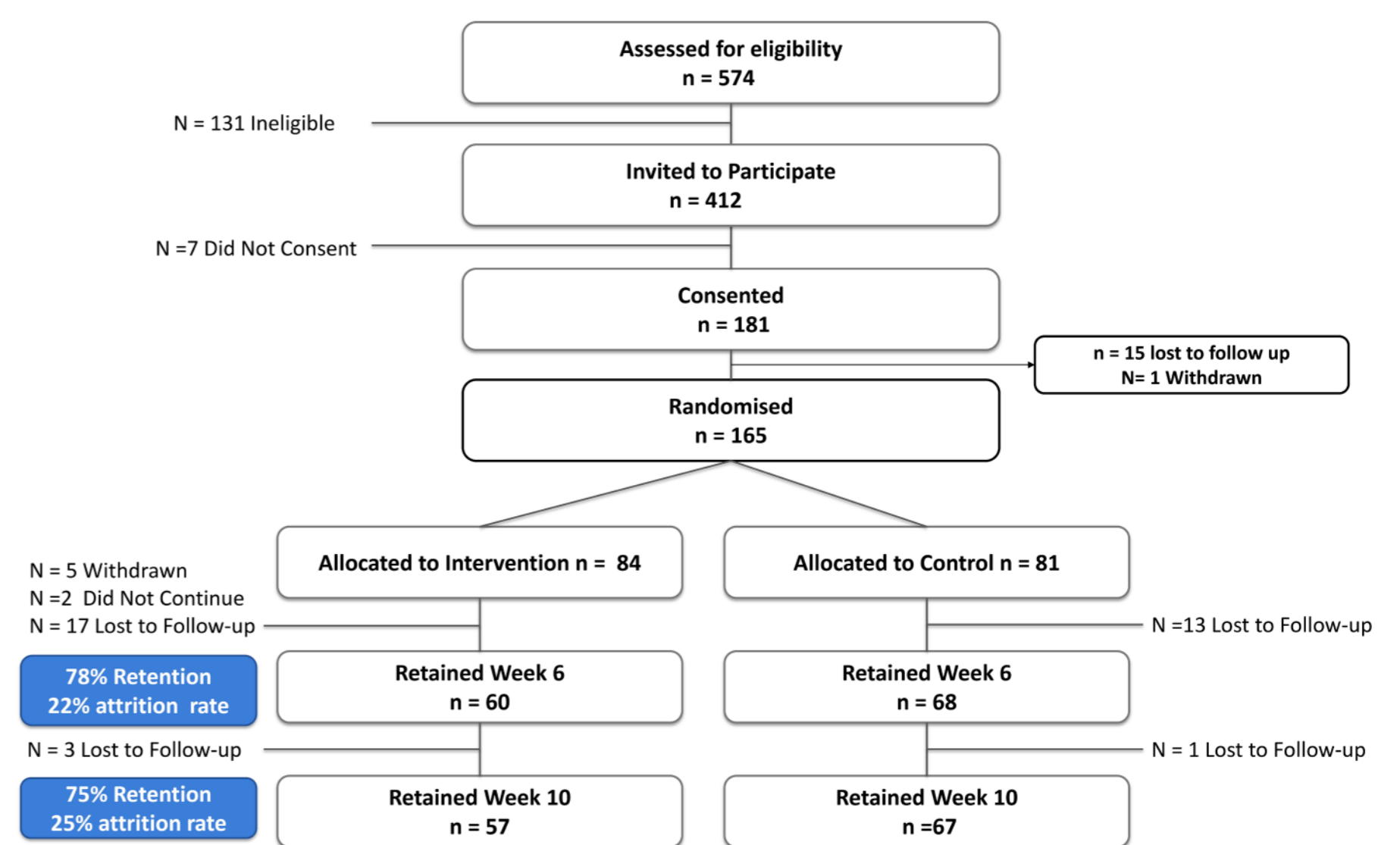
Study design & methods

- **Location:** Birmingham and the surrounding West Midlands.
- **Target population:** Families with school-aged children and access to a kitchen and the internet.
- **Design:** Parallel group, unblinded randomised pilot and feasibility trial with 1:1 allocation to the intervention or a waitlist control group.
- **Recruitment:** Via social media, employers and community organisations.
- **Main outcomes:** Dietary quality (Alternative Healthy Eating Index), Food agency, feasibility and acceptability.
- **Data sources:** Questionnaires at baseline, week 6, and week 10 collected data on demographics, cooking skills, food agency and dietary patterns. Dietary patterns were measured via two 24-hour dietary recalls using Intake24. Semi-structured interviews at baseline and weeks 7 and 9 explored feasibility and acceptability.
- **Timeframe:** Recruitment and data collection took place between April and October 2025, with analysis ongoing.

The study was approved by Humanities and Social Sciences Research Ethics Committee at the University of Cambridge [25.397] and registered with ISRCTN [45164711]

Key findings

Trial recruitment and retention



All progression criteria for an effectiveness trial were met:

Metric	Target	Outcome
1. Sample size	~ 100% of target	165 randomised
2. Retention rate: week 6	~ 60% overall (50% in both groups)	78%
3. Retention rate: week 10	~ 50% overall (40% in both groups)	75%
4. Recipe box ordering rate	~ 70% order two or more boxes/week	82% ordered > 1 box/week Average: 0.70 boxes/week
5. Intake24 questionnaire completion rate	70% complete all four measures	95% at baseline 77% at week 6 91% at week 10
6. Acceptability of questionnaires & interviews (qualitative)	Moderate	High acceptability with few concerns
7. Acceptability of intervention & waitlist (qualitative)	Moderate	High acceptability Some concerns about cost

Scientific & policy implications

Feasibility and scalability: The first study to evaluate a commercial recipe box as a public health intervention. Demonstrates its scalability for social prescribing. Further research is needed to assess cost-effectiveness and environmental impact.

Food agency: The trial explored impacts on the ability to plan and prepare meals. Next, we can examine whether these behavioural changes lead to health outcomes, such as changes in body weight.

Future trial design: The study provides the data to estimate the sample size for an effectiveness trial and insights into the perceived benefits (e.g., reduced stress, family cohesion) and barriers to participation in a population sample.

Demographic considerations: A key scientific limitation is the overrepresentation of women and those with higher educational/occupational status. Future research will aim to replicate findings in disadvantaged populations and men to ensure equitable health outcomes.

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