Evaluating the observable impact of urban green space on older adults' physical activity and wellbeing

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Objective

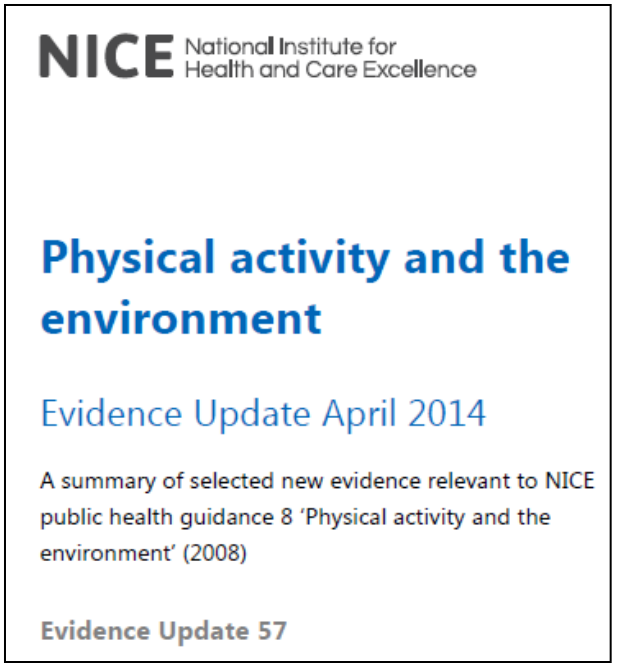
To provide a robust evaluation of the effect of planned "greening" on physical, social and mental wellbeing, compared to matched unimproved areas

Why do this?

- Much evidence that amount of "green or blue infrastructure" is associated with physical activity and wellbeing
- Does not show that environment causes more physical activity and improved wellbeing
- Could be "third variables" e.g. income that is explaining both

Does greening influence wellbeing?

- Difficult to study causal effects of changing the environment on wellbeing
- Natural experiments: 'real world' events that cannot be manipulated by a researcher
- Designing and conducting studies around natural experiments is difficult – and often poorly done
- Most research in USA and Australia
- Very little with older people



GHIA natural experiment

- Four green spaces (intervention sites) improved by Southway Housing Trust
- Small-scale interventions, e.g. planting new trees, putting tree socks on trees
- MINIMAL interventions
- 8 comparison sites were matched for area characteristics, e.g. social deprivation

JS Benton, J Anderson, S Cotterill, M Dennis, SJ Lindley, & DP French (2018). Evaluating the impact of improvements in urban green space on older adults' physical activity and wellbeing: protocol for a natural experimental study. *BMC Public Health* **18**; 923.

Recommendations

- Better quality natural experiments should:

1. Better matched control sites;
2. Use of multiple control sites;
3. Controlling for **confounding** domains;
4. Publishing **study protocols** with a priori analyses;
5. Use of **adequate outcome measurements**;
6. Better reporting of samples and interventions;
7. Sample size calculations, and;
8. Measuring exposure to the intervention at individual level.

JS Benton, J Anderson, RF Hunter, & DP French (2016). The effect of changing the built environment on physical activity: a quantitative review of the risk of bias in natural experiments. *International Journal of Behavioral Nutrition and Physical Activity* **13**: 107.

Intervention sites

Burton Road (Site 1)

Parbold Avenue (Site 2)

Dennison Avenue (Site 3)

Alford Avenue (Site 4)

When did we collect data?

4 intervention sites vs 8 similar comparison sites

Qualitative interviews

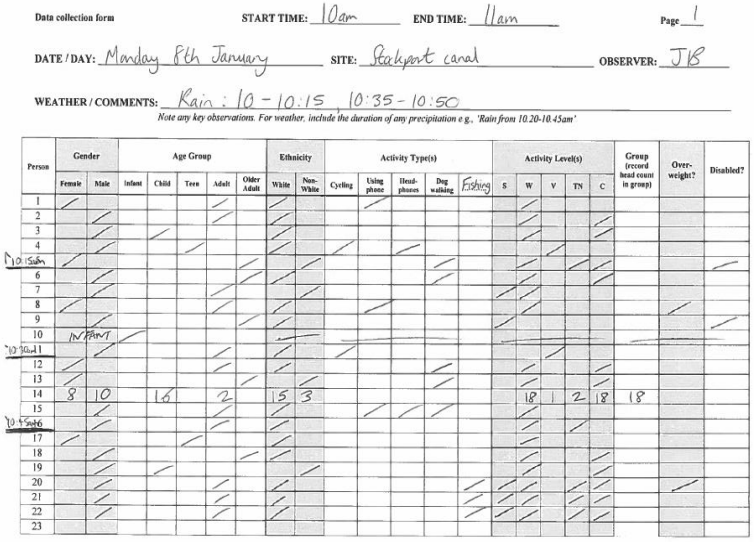
July - November 2018

MOHAWk (Method for Observing pHysical Activity and Wellbeing)

- An observation tool for measuring:

1. **Physical activity** (sedentary, walking, vigorous)
2. **Connect** (connecting with others)
3. **Take Notice** (taking notice of the environment)

- Also measures demographics (gender, age, ethnicity), weather (precipitation) and site incivilities (e.g. graffiti, litter)



Data collection form START TIME: 10am END TIME: 11am Page 1

DATE / DAY: Monday 8th January SITE: Stockport canal OBSERVER: JB

WEATHER / COMMENTS: Rain: 10 - 10:15, 10:35 - 10:50

Note any key observations. For weather, include the duration of any precipitation e.g., 'Rain from 10.20-10.45am'

Person	Gender		Age Group					Ethnicity		Activity Type(s)					Activity Level(s)					Group (record head count in group)	Over-weight?	Disabled?
	Female	Male	Infant	Child	Teen	Adult	Older Adult	White	Non-White	Cycling	Using phone	Head-phones	Dog walking	Fishing	S	W	V	TN	C			
1		✓				✓		✓			✓					✓			✓			
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23																						

JS Benton, J Anderson, M Pulis, S Cotterill, RF Hunter, & DP French. Method for Observing pHysical Activity and Wellbeing (MOHAWk): development and validation of an observation tool to assess physical activity and other behavioural indicators of wellbeing in urban spaces. (*Cities and Health*).

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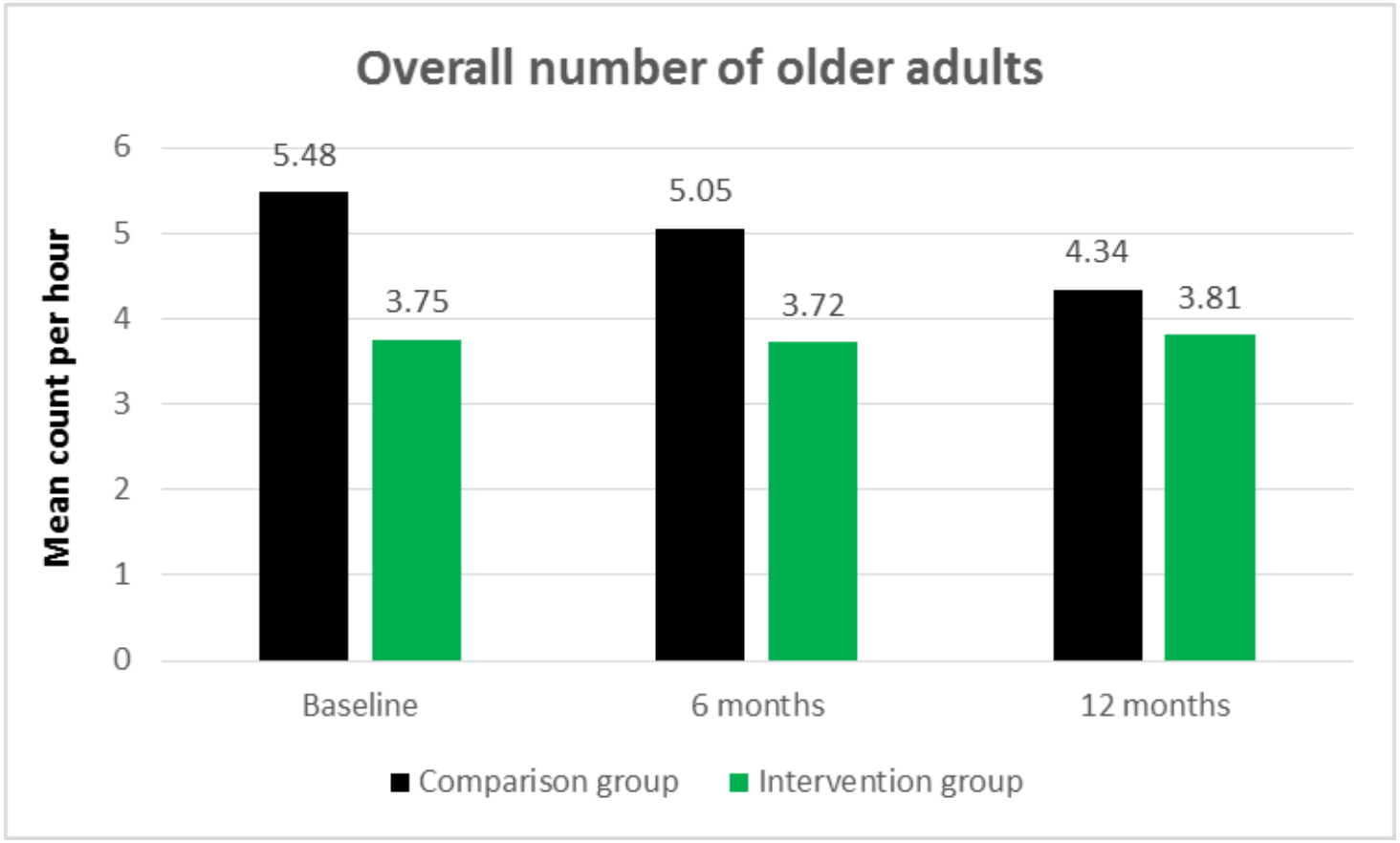
Results: number of older adults using the sites



(Average number of older adults per hour)

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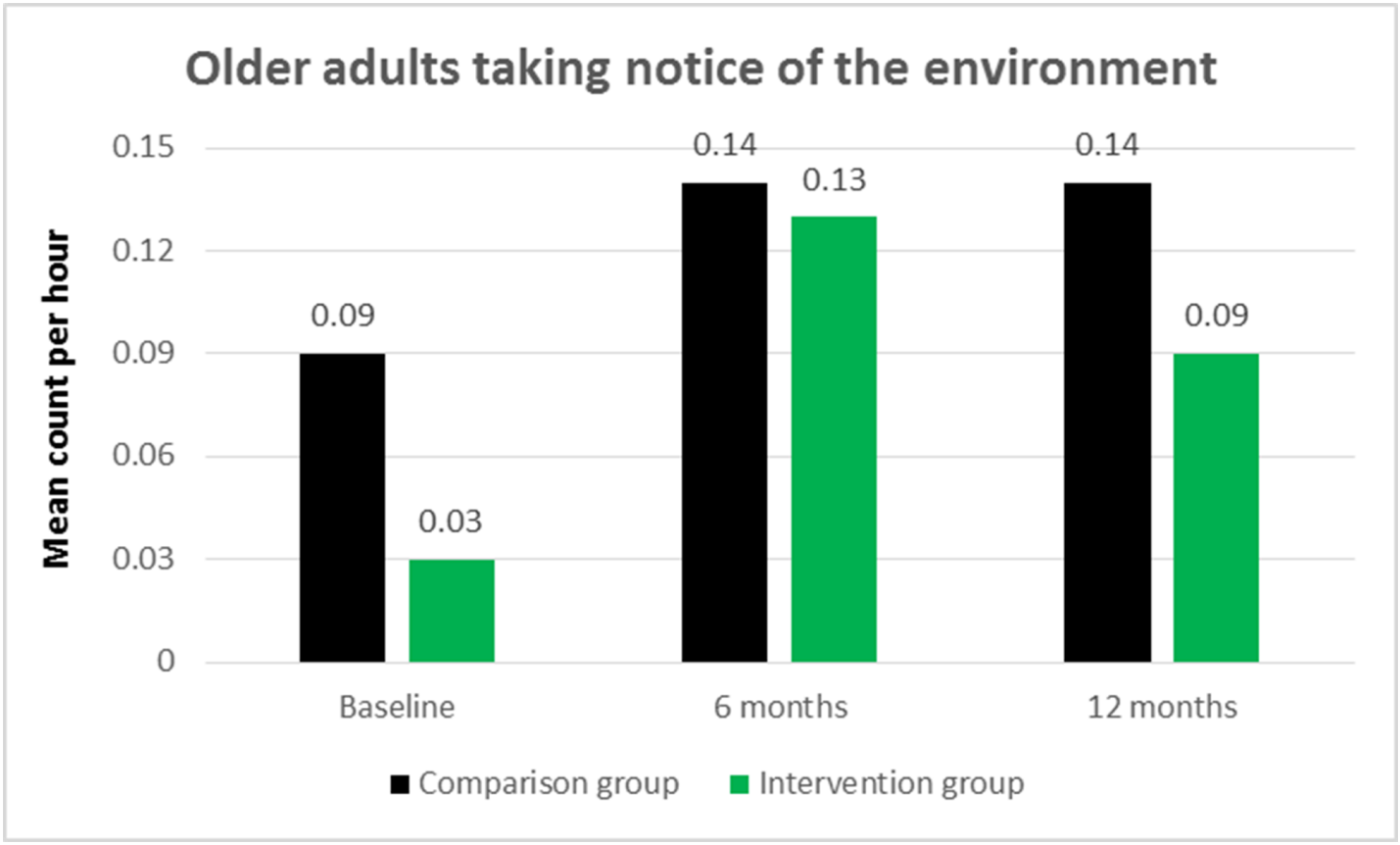
Take Notice

Results: amount of Take Notice behaviour in older adults



(Average number of older adults taking notice of the environment per hour)

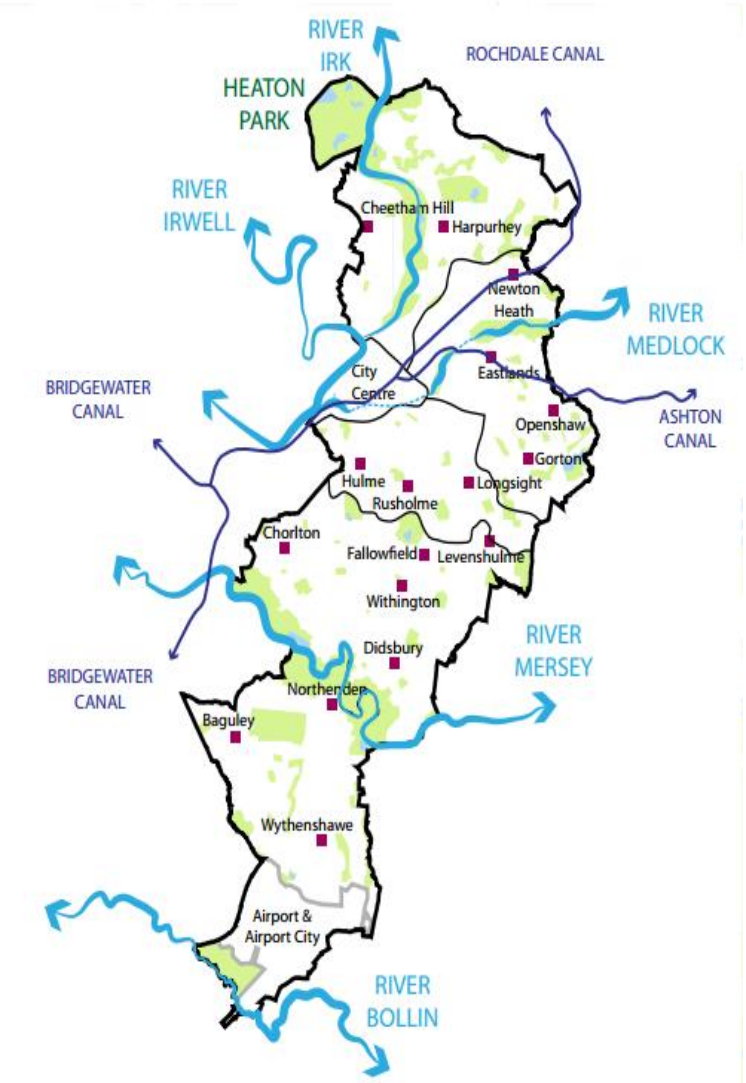
Qualitative sub-study

- Investigating older adults' experiences of changes to Old Moat
- Includes GHIA tree trail intervention sites but also includes other recent changes
- Walk-along interviews conducted which included as many changes as possible from natural experiment, but also other recent changes
- Only 4/ 15 noticed changes (2 new trees or flowers and 2 tree socks)

VG Macintyre, S Cotterill, J Anderson, C Phillipson, JS Benton, & DP French (2019). "I would never come here because I've got my own garden": Older adults' perceptions of small urban green spaces. *International Journal of Environmental Research and Public Health* **16**; 1994.

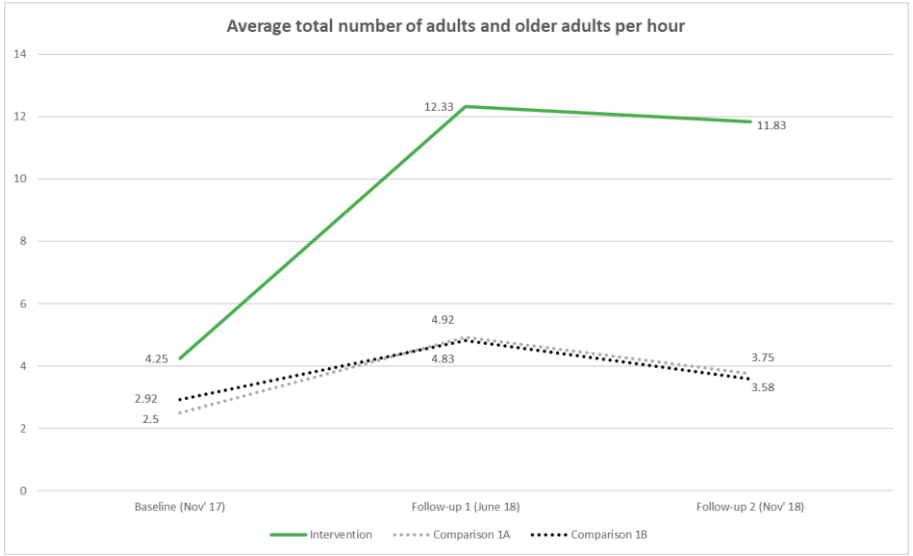
Where does this get us?

- Unlikely that changes like those introduced by Southway Housing in Old Moat will produce (discernible) change in older people
- These results are useful
- We understand why no change (mixed methods)
- Current guidance (e.g. NICE, 2014) does not say when will get effects and when will not get effects



Other outputs

- MOHAWK tool developed and we are keen for others to use
- Similar methods being applied to bigger environmental changes (Salford canal study and Grow Green study)



Thank you

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