

# Altering choice architecture to change population health behaviour: methods and preliminary findings of a conceptual and empirical scoping review

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**Objective** Execute a scoping review of empirical evidence and relevant conceptual material for choice architecture interventions aimed at changing diet, physical activity, alcohol use and tobacco use.

## Background

- ‘Nudge’ and ‘choice architecture’ interventions have aroused considerable political and public interest in relation to behavioural intervention and public health policy<sup>1,2</sup>.
- ‘Choice architecture’ is typically defined as the way in which choices are presented, often involving alteration of physical or social environments. A ‘nudge’ is “any aspect of the choice architecture that alters people’s behaviour in a predictable way without forbidding any options or significantly changing their economic incentives”<sup>1</sup>; as such, meanings are ineluctably entwined.

1 Thaler, R.H., Sunstein, C.R. (2008). *Nudge: Improving Decisions About Health, Wealth, and Happiness*. New Haven, CT: Yale Univ. Press.  
2 Dolan, P., Hallsworth, M., Halpern, D., King, D., Vlaev, I. (2010). *MINDSPACE: influencing behaviour through public policy*. Institute for Government, Cabinet Office.

## Methods

- The variable terminology used to describe application of these concepts to public health interventions had key implications. First, it was necessary for us to formulate a working definition of choice architecture interventions:

**‘Choice architecture interventions comprise techniques that involve altering properties or relations between one or more objects or entities within micro-level environments, or placement of visual, auditory or other sensory stimuli proximate to such objects or entities, with the intention of enabling, affirming or priming health-enhancing behaviours by reducing the reflective cognitive burden associated with such behavioural responses to such cues.**

**Such interventions are usually implemented within the same (or a functionally equivalent) micro-level environment as that in which the target health-enhancing behaviour is intended to be enacted and are, in principle, scalable for implementation at population level. Such interventions most often have their effects outside of awareness.’**

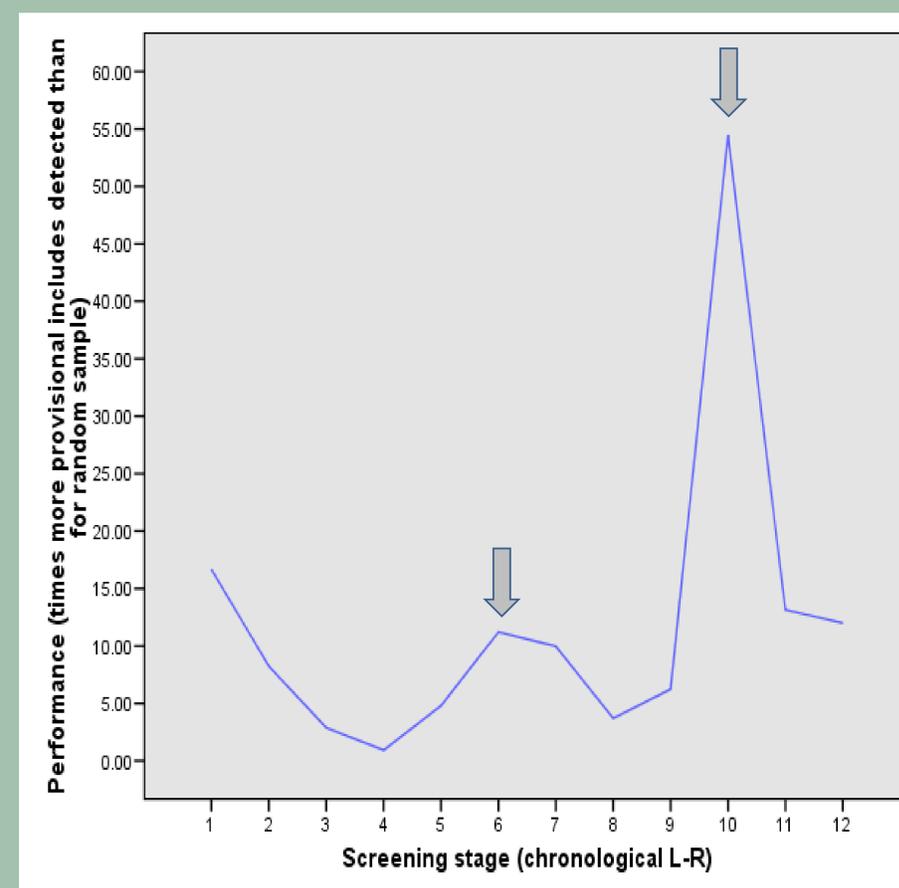
- Second, searches needed to be highly sensitive due to inability to apply PICOS terms.
- Due to extremely large record sets (N=804,919), novel software-based methods were applied to prioritise screening of records determined as most likely to be eligible for inclusion.

## Results

- 804,919 unique records were retrieved. 54,651 records were screened at the title and abstract stage (48,611 of which were prioritised using software-based methods), with 357 studies marked as provisional includes.
- The listed intervention types identified so far (below left) are to be used in developing a provisional taxonomy of choice architecture interventions.
- The graph (below right) illustrates the performance of our methods in detecting provisional includes, relative to a baseline rate identified by screening a random sample. Arrows indicate screening stages in which the method of prioritising records was altered.

### ELIGIBLE INTERVENTION TYPES IDENTIFIED

- Manipulations of ambient factors / atmospherics
- Aesthetic improvements to environment
- Standardised public announcements (not at point-of-decision)
- Availability of behavioural options
- Altering effectiveness or appeal of alternatives to stair use
- Priming, using environmental cues
- Altering proximity of behavioural options
- Altering visibility of behavioural options
- Point-of-decision prompts, signage
- Quantity anchors
- Adaptation/alteration of equipment or environment
- Variety within product type
- Size, shape or design of receptacle
- Properties of eating utensils
- Labelling (nutrient claims)
- Labelling (reference portion)
- Labelling (nutritional labelling)
- Labelling (health warning labels)
- Product endorsements on packaging
- Packaging design
- Package sizing
- Altering sensory qualities of consumed product
- Portion sizing
- Unit sizing



**Conclusions** This scoping review will increase our understanding of the existing evidence for choice architecture interventions and identify options for further primary and secondary research. Development of novel methods of evidence synthesis is needed to inform evidence-based decisions about interventions to change population health behaviours.