



Identifying the active ingredients of interventions to improve participant retention: A behavioural science analysis of a Cochrane review

Trower, Rebecca (1), Madigan, Ailbhe (2), Regan, Daniel (2), Gillies, Katie (3), **Mc Sharry, Jenny (1)**
(1) Health Behaviour Change Research Group, School of Psychology, National University of Ireland, Galway
(2) University College Dublin, Ireland
(3) Health Services Research Unit, University of Aberdeen, Scotland

Background

Retention is a top priority for trial methodology research.

Retention can be understood as behaviours trial participants are asked to carry out (e.g., returning questionnaires).

Behavioural science tools can be used to specify retention behaviours and to describe intervention content using shared terminology.

Objective

To analyse interventions to improve participant retention through a behavioural science lens.
To describe target behaviours and active ingredients of interventions.

Methods

An existing Cochrane review (Gillies et al., 2021) identified 8 retention intervention categories that should be prioritised for future research.

The 21 studies reporting these interventions were selected. The content of published papers and study materials requested from study authors were double coded for Behaviour Change Techniques (BCTs).



Findings

Target retention behaviours were not clearly defined and no studies used BCT labels to describe intervention content.

Fewer BCTs were identified in published papers (Mean = 1.88) than in supplementary study materials (Mean = 4.5)

Interventions included in the same retention intervention categories contained different BCTs.

BCT Grouping	BCT Label	Retention Intervention Categories								Frequency of BCTs													
		1. Monetary Incentive	2. Return Postage Strategies	3. Addition of a Pen	4. Electronic Reminders	5. Post-it Note	6. Newsletter	7. Giving Pen at Recruitment	8. Monetary Rewards to Both Trial Arms														
		Bauer 2004	Gates 2009	Kenyon 2005	Dinglas 2015	Kenton 2007	Sharp 2006	Reil 2016	Cunningham-Burley	James 2020	Mitchell 2020a	Ashby 2011	Keding 2016	Starr 2015	Lewis 2017	Rogers 2018	Tilbrook 2015	Gouiao 2020	Michel 2012	MamMOTH 2018	Whiteside 2019	Hardy 2016	
Feedback and monitoring	2.2 Feedback on Behaviour																						3
Social Support	3.1 Social Support (Unspecified)																						1
	3.2 Social Support (Practical)	✓	✓													✓							9
Shaping Knowledge	4.1 Instruction on how to perform behaviour	✓															✓						4
Natural Consequences	5.1 Information about health consequences		✓															✓					4
	5.3 Information about social and environmental consequences							✓															4
Comparisons of behaviour	6.3 Information about others' approval							✓															1
Associations	7.1 Prompts/Cues	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	21
Comparison of outcomes	9.1 Credible Source	✓	✓	✓					✓	✓	✓						✓						11
Reward and threat	10.1 Material incentive (behaviour)			✓																			2
Antecedents	12.5 Adding Objects to the environment	✓	✓	✓	✓			✓	✓	✓	✓						✓	✓	✓		✓		16
Total number of BCTs identified per study		5	5	4	2	1	4	6	2	9	6	1	6	2	3	2	2	5	2	2	2	6	

Conclusions

Most retention interventions were not conceptualised as behaviour change interventions. As a result, target behaviours were often not defined and included BCTs were unclear.

There are potential benefits for synthesis and replication if BCTs are used explicitly and behaviours are pre-stated during intervention development using the Action, Actor, Context, Target, Time (AACTT) framework (Presseau et al., 2019).