Variability in comparator group support and reporting quality in randomised controlled trials of smoking cessation interventions: A systematic review

Marijn de Bruin, Marie Johnston, A. Jess Williams, Neza Javornik, Jamie Hartman-Boyce, Nicola Black, Wolfgang Viechtbauer, Susan Michie, Robert West
Acknowledgements

• Wolfgang Viechtbauer
• Maarten Eisma
• Claire Scott
Rationale: Systematic reviews and meta-analyses
Methodological challenges

1. Examine intervention group support only
2. Rely on published materials

Dose of active content
Objectives: focus on active content (BCTs)

1. To quantify the amount of information available on intervention and control group support in the public domain

2. To examine variability in the active support provided to controls and interventions

3. To explore the potential impact of control group variability on trial outcomes
Methods in a systematic review

• Smoking cessation RCTs (143)

• Contact authors for additional information:
  • Intervention materials / protocols
  • Control group materials and completion of control group checklist
  • Outcomes

• Descriptive analyses of active content (BCTs)
Variability of intervention groups in public domain

8.93 BCTs
“True” variability of intervention groups
Impact of control group reporting ...
... on control group variability

20.72 BTCs
Findings: Comparing intervention and control group support

- Range of BCTs delivered to both arms
  - intervention 1-62 BCTs, control 0-53 BCTs

- Overlap: same BCT targeting same behaviour delivered in both arms
  - Range 0-67% overlap
  - Higher with higher control support ($\rho = .49, p < .01$)

- More ‘complex’ interventions compared against more challenging controls: $\rho = .58, p < .01$
Recommendation: change in practice

• Interpreting, comparing, and generalising intervention effects:
  • Not without careful assessment of and accounting for control support

• Analysing which BCTs work, how, for whom:
  • Not without comprehensive data from intervention and comparators, probably beyond that available in the public domain

• Recommended methods:
  • Tailored, short, personal emails; checklists; perseverance
  • Systematic reviews as (even) large(r), costly projects
What next?

Usual care study 9
RR 0.41 [0.28-0.60]

Usual care study 3
RR 1.19 [0.72-1.98]

Intervention Study 3
Thank you for your attention

Key references

