SYSTEMATIC REVIEW INTO THE EFFECTS OF CONTROL GROUP CHANGES IN INTERPRETATION OF FINDINGS IN ALCOHOL BRIEF INTERVENTIONS

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WHAT IS THE PROBLEM?

- Common for control groups to reduce drinking in alcohol brief intervention RCTs

- A number of studies have shown a significant reduction in control group drinking, which has led to accepting the null hypothesis in the study.
  - (eg. Blankers et al. 2011, Kaner et al. 2013)

- Some studies have tried to limit, or stop, this control group change with varying success.
  - (eg. Hester et al. 2012)

WHAT ARE THE AIMS?

Provide a value of the size in the decrease in control group drinking

To compare the size of effects across intervention and control groups.

To consider the change in control group differences under different circumstances.

(Location, control method, pre-test screening)

METHOD

- Meta-Analysis

- Re-analysed data from 4 previous meta-analyses
  - Jenkins et al. (2008)
  - Platt et al. (2016)
  - Black et al. (2016)
  - Riper et al. (2014)

- Out of 153 papers analysed, 72 were accepted into the meta-analysis.

- Main reasons for rejection from study were:
  - Missing Baseline and/or post-test raw data for control group
  - No measure of alcohol consumption
  - Inappropriate target group (i.e. drinking in pregnancy, Underage drinking etc.)

METHOD – META-ANALYSIS

- Generic Inverse Variance Meta-Analysis, Standard Mean Difference,
  - Random Effects model due to high variation in methods used in studies and heterogeneity.

- Within subjects analysis used within-subjects correlations to calculate SMD.

- Thank you to all who provided the correlations.
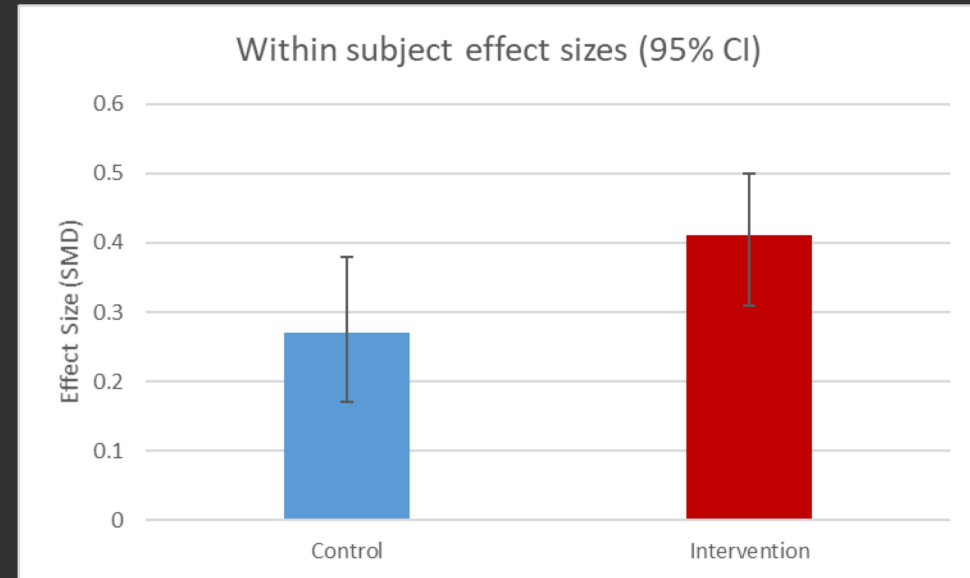
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AIM 1: RESULTS

- Difference between control and intervention group at follow-up.

- SMD=0.14
    - Similar to other reviews in area (SMD=0.15; Platt et al. 2015)

- Control groups significantly decrease drinking in baseline to follow-up effect. SMD=0.27

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AIM 2: RESULTS

- Significant reduction in alcohol consumption in both control groups and intervention groups. (Control SMD= 0.27, Intervention SMD = 0.41)
- Non-significant difference between control and intervention changes.

Within subject effect sizes (95% CI)

WHAT ARE THE IMPLICATIONS AND POSSIBLE INTERPRETATIONS OF THESE FINDINGS?

- Control group decreases drinking significantly. (SMD=0.27)
  - Small to mid-sized significant effect

- No significant difference between control group change and intervention group change.
  - Risk of misinterpreting current reviews, and overall evaluation of effect sizes in ABI research
  - High risk of Type 2 errors in this research
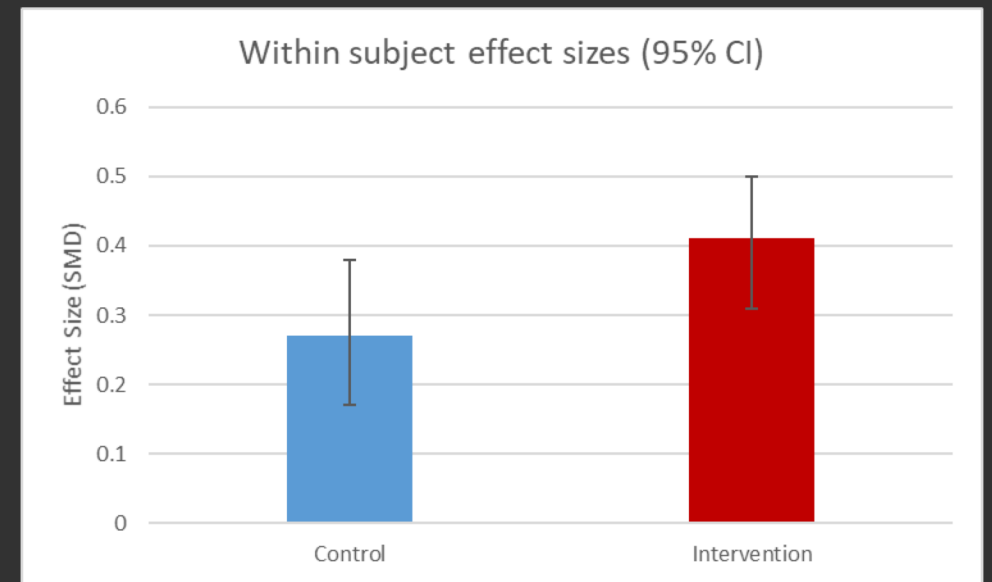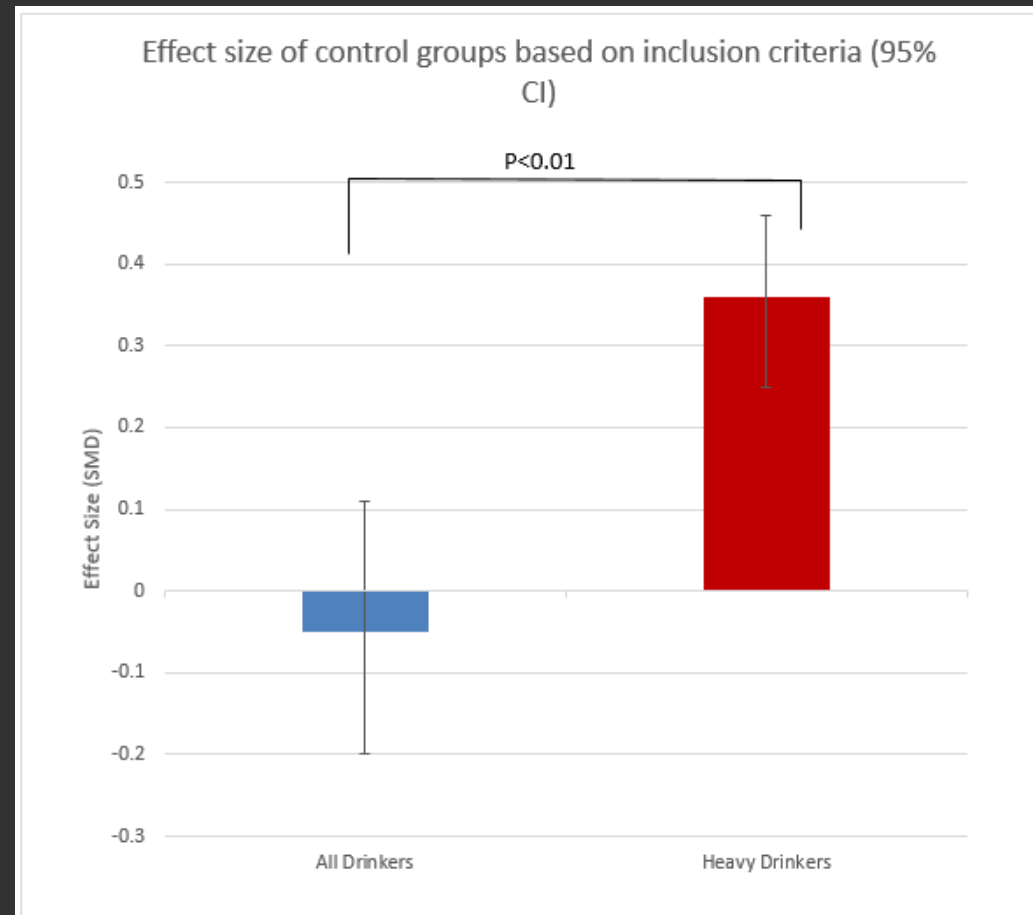
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DOES SCREENING OUT LOW-RISK DRINKERS AFFECT CONTROL CHANGE?

- Heavy drinkers (Screened) vs All drinkers included

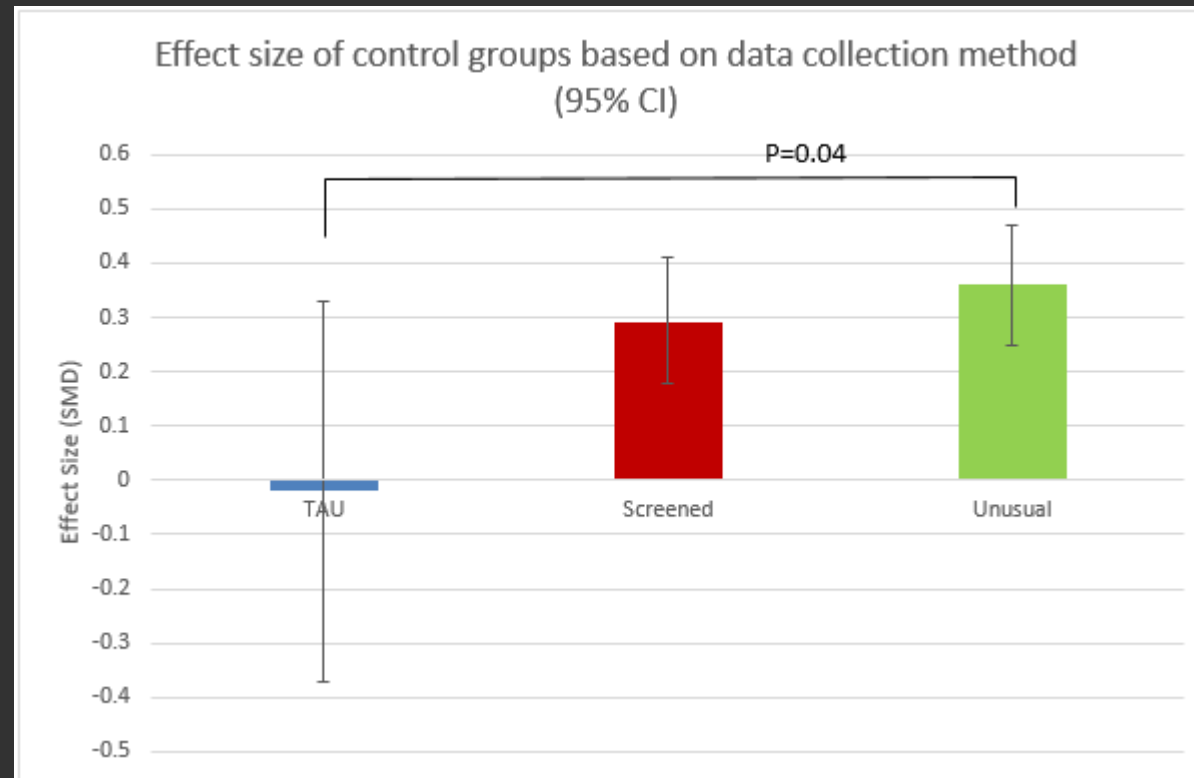Effect size of control groups based on inclusion criteria (95% CI)

WHAT ARE THE IMPLICATIONS AND POSSIBLE INTERPRETATIONS OF THESE FINDINGS?

- Heavy drinking control groups decrease drinking significantly more than control groups including all drinkers

- Possible interpretation of these findings
  - Regression to the mean (McCambridge et al. 2013)
 - Heavy drinkers signing up to trials

Effect size of control groups based on inclusion criteria (95% CI)
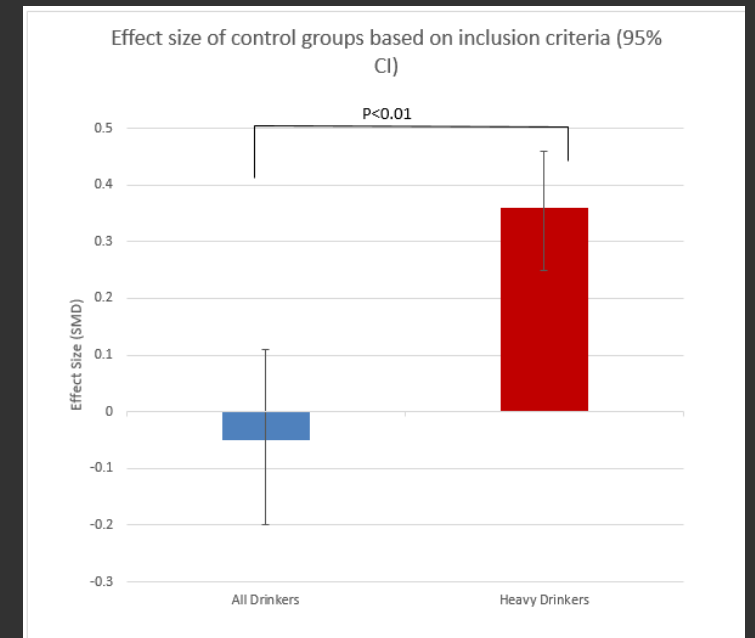
DOES THE CONTROL METHODOLOGY AFFECT CONTROL CHANGE?

- Treatment as usual vs Screened vs Unusual situation

Effect size of control groups based on data collection method (95% CI)

WHAT ARE THE IMPLICATIONS AND POSSIBLE INTERPRETATIONS OF THESE FINDINGS?

- Unusual treatment control groups reduce drinking significantly more than control groups receiving treatment as usual.

- Possible interpretations of these findings:
  - Demand characteristics play a role in control group drinking
  - Demonstrates the importance of attempting to mask or hide the baseline assessments

- Further research could be conducted into the effect of even minimal screening of participants.

Effect size of control groups based on data collection method (95% CI)
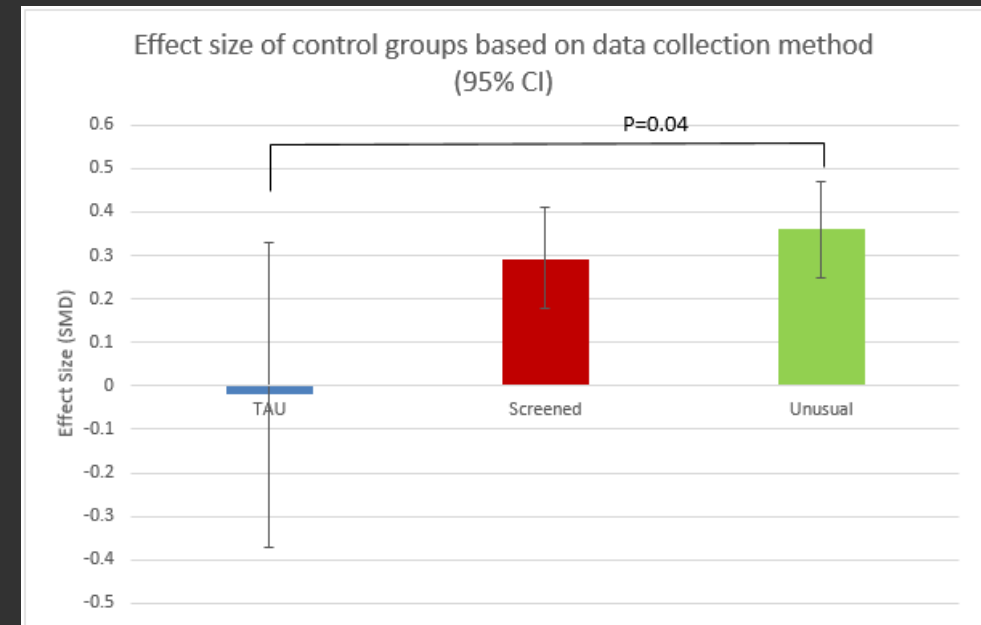
DOES THE SETTING OF THE STUDY AFFECT CONTROL CHANGE?
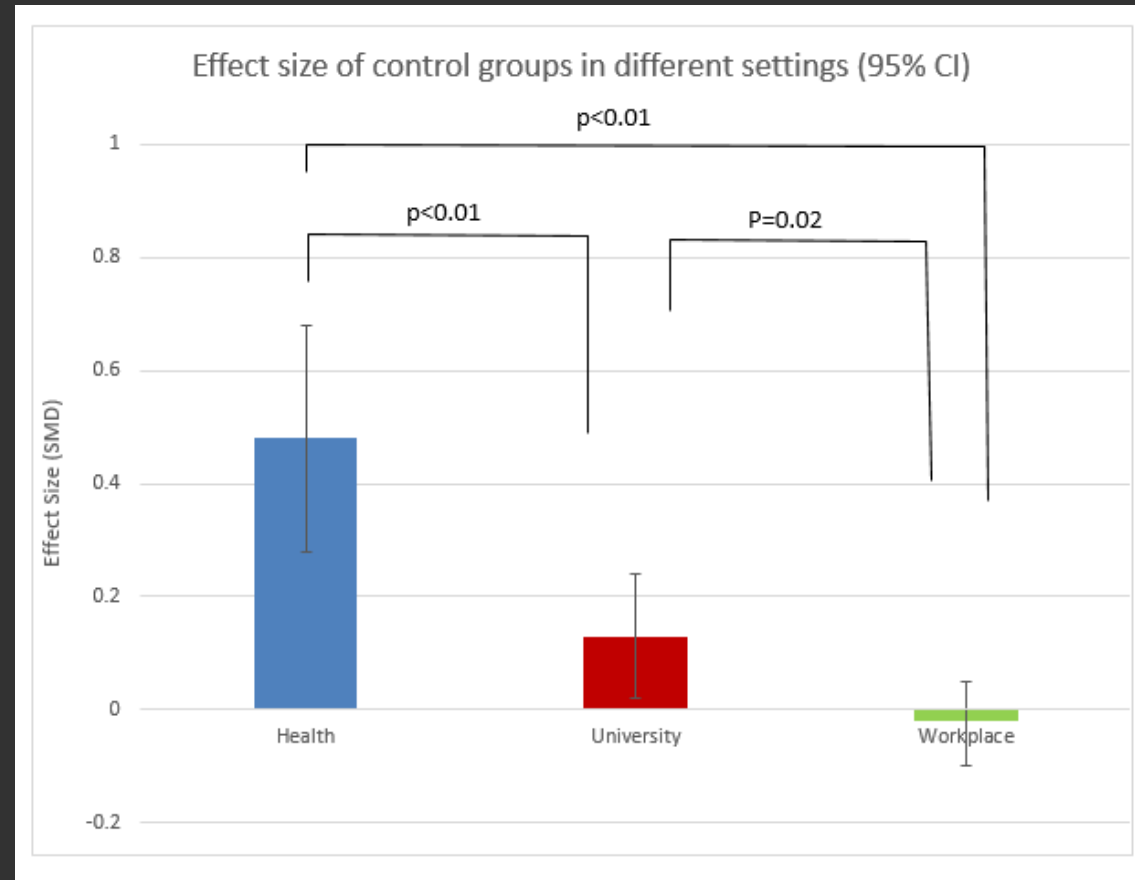
WHAT ARE THE IMPLICATIONS AND POSSIBLE INTERPRETATIONS OF THESE FINDINGS?

- Significant differences in the amount controls groups decrease drinking depending on the setting of the study.

- Possible interpretation of these findings:
  - Effect of setting could cause cues similar to Behaviour Change Techniques
  - Demand characteristics, both hypothesis guessing and context effects.

- Implications
  - Control groups reacting to setting might need to be tested somewhere more neutral
  - The settings could be used more to the advantage of the intervention

Effect size of control groups in different settings (95% CI)
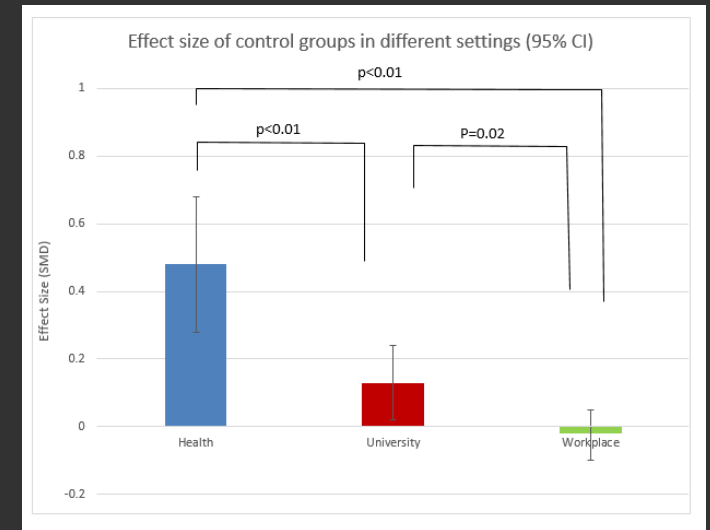
MENTIONS

- Prof Matt Field (University of Sheffield)

- Dr Laura Goodwin (University of Liverpool)

- Prof Mark Gabbay (University of Liverpool)

- Dr Caryl Beynon (Public Health England)

- Public Health England

- Dr Beth Collier

THANK YOU