WHAT WORKS IN BRIEF ALCOHOL INTERVENTIONS?
- MECHANISMS OF ACTION
Mechanisms of action of brief alcohol interventions remain largely unknown – a narrative review

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Background
O'Donnell et al. (2014)

- 34 systematic reviews
- 56 randomized controlled trials
- 80 papers among which it was consistently reported that
  - BI efficacious for addressing hazardous and harmful drinking in primary care settings, particularly in middle-aged, male drinkers.
However, **evidence is lacking** on the effects of BI

- among **certain groups** such as
  - women
  - older and younger drinkers
  - minority ethnic groups
  - dependent and other co-morbid drinkers
  - living in transitional and developing countries

- as regards to
  - the optimum **length and frequency** of BI
  - the optimum **content** of BI
Furthermore, recent null findings from large pragmatic trials e.g. SIPS, Kaner et al., 2013; PRE-EMPT, Butler et al., 2013

- have called into question the extent to which the systematic review evidence on BI efficacy can be generalized to effectiveness in routine primary care
- pointed to the lack of knowledge on intervention content and active ingredients McCambridge 2013
Background

- BI has been tested in several other settings such as:
  - general hospitals: McQueen et al., 2011
  - emergency departments: Nilsen et al., 2008
  - colleges and universities: Carey et al., 2012

- Evidence more contrasted in these settings: McCambridge, 2011

- Additional research is required to investigate mixed findings, refine current practice guidelines, and continue to bridge the gap between science and practice: Field et al., 2010
Aims

- To establish the **state of current knowledge** about **mechanisms of action of brief intervention** for hazardous or harmful alcohol use
- Fundamentally a **hypothesis generation study**
  - identify important targets for **further study**
Methods

- **Data collection**
  - PubMed and PsychInfo
  - References of retrieved publications

- **Inclusion criteria**
  - *intervention* described as “brief intervention”, “brief advice”, “brief motivational intervention”, or “brief motivational interviewing”
  - intervention targeted *alcohol*
  - intervention delivered *face-to-face* (i.e. group interventions and computer interventions excluded)
  - some *mechanism* of intervention effect investigated
  - publication was either an original research article or a literature review, published in a *peer-reviewed* journal
Results
Bien and colleagues (1993) reviewed common elements of effective BIs and six elements were identified for further study:

- Feedback
- Responsibility
- Advice
- Menu
- Empathy
- Self-efficacy
Advice, change options

Feedback

Change plan

MI skills

Decisional balance

Components
- Meta-analytic findings are supportive of the use of feedback
  
  Bien et al., 1993; Carey et al., 2007; Carey et al., 2012

- Experimental studies produced more mixed findings

  Walters et al., 2009; Cowell et al., 2012; Murphy et al., 2004; Juarez et al., 2006
Bien et al. (1993): “Advice is the essence of BI”

- All interventions contained explicit advice to reduce or stop drinking
- Seldom prescribed single approach, but a “menu” of alternative change options

Few studies empirically assessed advice giving

- Mixed findings (related to better outcomes in 1 out of 4 studies

3 of the FRAMES components are MI skills

Interventions using MI predicted greater reductions in alcohol-related problems

Carey et al. 2012

Mixed findings when analyzing specific skills


Limited variability in scores

The quality and the exact combination of skills might matter more than the quantity (reflective listening skills)

Tend to suggest a potential detrimental effect

3 empirical studies: null or negative findings
LaBrie et al. 2006 ; Collins and Carey 2005, Carey et al. 2006

Meta-analysis: smaller effects when face-to-face BIs included decisional balance exercise
Carey et al. 2012

= Miller and Rose (2013)

- "contraindicated with ambivalent people when the goal of treatment is to foster change"
- more appropriate to elicit change talk (i.e. only one part of the decisional balance)
Work on strengthening commitment to change resulting in statements of intention and written contract for behavior change

Miller & Rollnick, 2002

Preliminary elements to show that change plan, might be important components of BMI efficacy

Magill et al. 2010, Lee et al. 2010
Mediators
psychological dimensions, psycholinguistic behaviors, cognitive state

- affected by the intervention (a)
- transmit intervention effects on targeted behavior change (b)
Readiness to change

Norm perceptions

Enhancement of discrepancy

Change talk

Self-efficacy

Mediators
- Surprisingly little is known about the role of motivation – or readiness to change – in BI.

- 2 studies showed that BMI was associated with increases in motivation to change alcohol use (a). Borsari et al. 2009; Barnett et al. 2010.
Stein et al. (2009)

- Only for those highly motivated to change prior to the intervention
Sustain talk is a good predictor of poor outcomes

Mixed findings for Chang talk:
- Patient’s attitude 'towards change' at the end of the intervention
  - Bertholet 2010
- Ability to change
- Ability / Desire / Need
  - Gaume et al 2013

Enhancing client self-efficacy or strengthening confidence to change is a central component of MI

Miller & Rollnick 2002, 2013

2 studies in college students

McNally et al. 2005, Barnett et al. 2010

1 n.s., 1 partial support

No clear support but seldom studied
McNally et al. (2005)

- Discrepancy significantly increased following the intervention (a)
- and correlated with 6-week alcohol outcome (b)
Walters et al. (2009)

- Students receiving BMI+feedback more accurate in their norm estimates at 6 months (a)
- smaller norm discrepancies were associated with better alcohol outcomes (b)
- Norm perception *mediated* the intervention effect on alcohol outcomes (ab)
Mediators to change

Readiness

Self-efficacy

Enhancement of discrepancy

Norm perceptions (Feedback)

Decisional balance

MI skills

Advice, change options, moderation strategies

Components

Feedback

Change plan
Discussion
Discussion

- Limited number of studies on BI mechanisms
- Especially studies *specifically designed* to investigate active ingredients of BI
Most of the evidence comes from studies conducted on one particular subtype of BIs, those derived or adapted from MI.

- limited to particular settings and populations
  - college students and young adults
  - emergency department

Important that active ingredients can be identified in settings in which BI has been shown efficacious, like primary healthcare.
Investigating BI mechanisms is crucial to:

- understand observed discrepancies between studies
- further develop effective interventions
- improve public health impact of BI
Thank you for your attention!

Questions?
Reactions?