The effect of question order on outcomes in the ORBITAL Core Outcome Set for Alcohol Brief Interventions among online help-seekers

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Disclosure of interest

MB owns a private company (Alexit AB) which develops and distributes digital lifestyle interventions to the general public and for use in health care settings. Alexit AB had no part in funding, planning, or execution of this trial.

GWS was the lead researcher on the development of the ORBITAL effectiveness and efficacy outcome set.

CG has done paid consultancy work for the behaviour change and lifestyle organization, ‘One Year No Beer’, providing fact checking for blog posts.

PT declares no conflicting interests.

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Introduction

- Trials of (similar) alcohol brief interventions have a high variety of outcome measures[1]
  - 405 trials
  - 2,641 separate outcomes measured in 1,560 different ways
- Meaning comparisons across trials and evidence synthesis of outcomes are limited

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[1] *Shorter et al., 2019, Journal of Studies on Alcohol and Drugs*

Introduction

- To overcome this issue, a project was established to develop an international, consensus-derived, core outcome set (COS):

  the **ORBITAL** (Outcome Reporting in Brief Intervention Trials: Alcohol)

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How the ORBITAL COS was developed

1a. Systematic review

1b. Outcome map

2. Prioritise through e-Delphi [1]

3a. Stakeholder consensus meeting

3b. Psychometric evaluation

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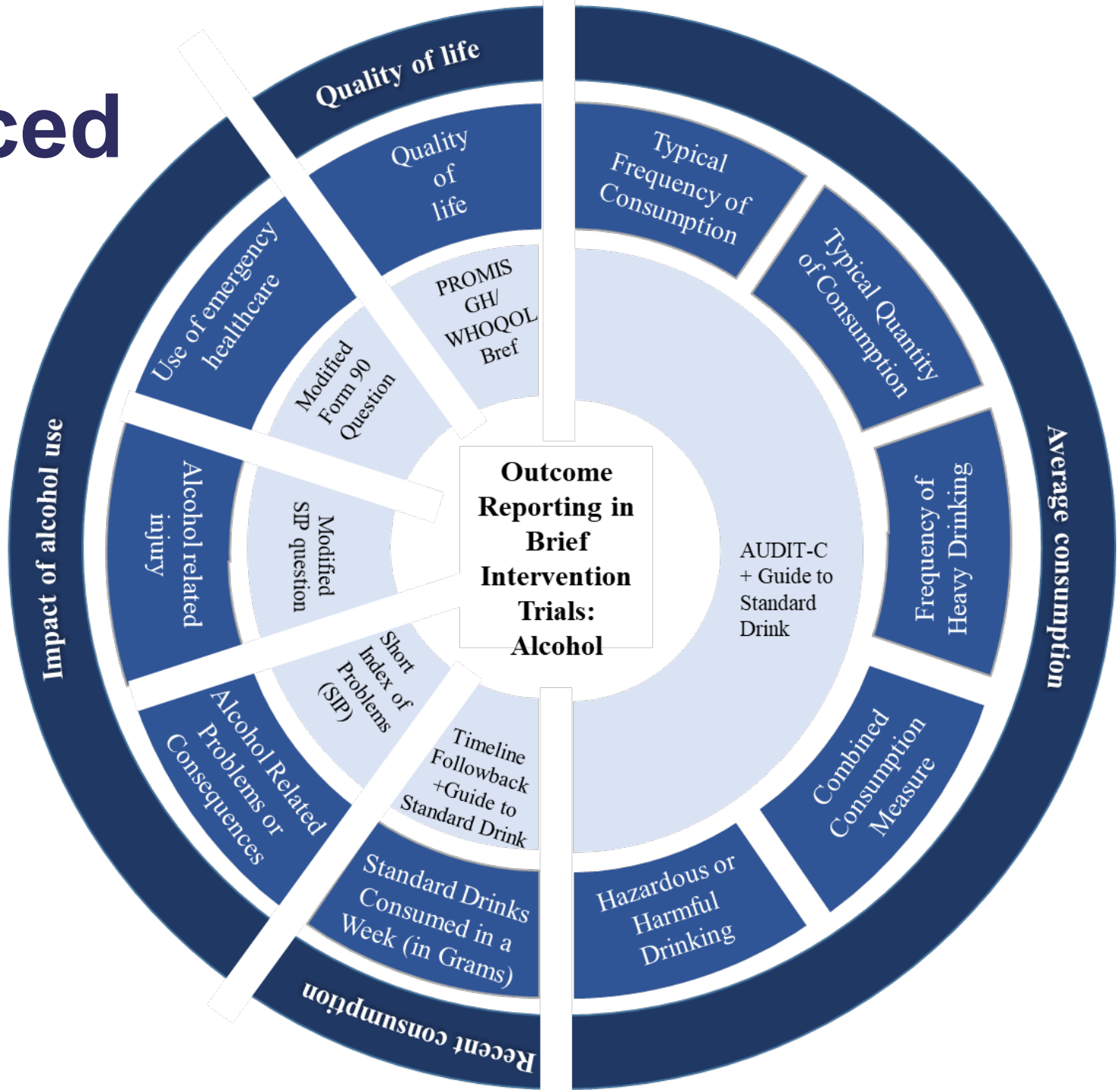
Shorter et al., 2019, Journal of Studies on Alcohol and Drugs

What was produced

1. Frequency of drinking
2. Typical number of drinks consumed on a drinking day
3. Frequency of heavy episodic drinking
4. Combined consumption measure
5. Hazardous and harmful drinking
6. Standard drinks consumed in the past week
7. Quality of life
8. Alcohol-related consequences
9. Alcohol-related injury
10. Use of emergency health care services



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Aim

To estimate order effects for the 10 outcome measures in the core outcome set (COS).

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Methods

- Design
  - Double-blind randomised factorial trial
  - 24 conditions (=4!)
  - 10 COS items in 4 clusters

Average consumption

1. Frequency of drinking
2. Typical number of drinks consumed on a drinking day
3. Frequency of heavy episodic drinking
4. Combined consumption measure
5. Hazardous and harmful drinking

Recent consumption

6. Standard drinks consumed in the past week

Quality of life

7. Quality of life

Impact of alcohol use

8. Alcohol-related consequences
9. Alcohol-related injury
10. Use of emergency health care services

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Methods

- Participants
  - Aged 18+
  - AUDIT score>=1 and if reported having at least 1 drink in past week
  - Searched online for alcohol-related help
- Primary outcomes
  - Order effects among the COS items
  - Patterns of attrition

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Results

- Randomised 7,334 participants (21st Oct – 26th Nov 2020)
- Of which 5,256 responded to at least one question (and therefore available for analysis)
- Median completion time = 4.3 minutes

	Mean (SD)[a]	n (%)[a]
AUDIT-C Item 1	2.55 (1.44)	
AUDIT-C Item 2	1.39 (1.37)	
AUDIT-C Item 3	1.78 (1.44)	
AUDIT-C Total	5.72 (3.66)	
Past week consumption (grams)	322 (298)	
PROMIS Global 10	32.8 (8.2)	
Short Index of Problems	13.7 (11.5)	
Injury	0.58 (0.98)	
Emergency health care services	1.19 (3.20)	
Hazardous and harmful drinking		2170 (61.2)

[a]Among participants for whom data was available.

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Results

- Evidence that higher self-reported combined consumption [β=0.26, p=.059; β=0.69, p=<.001] and odds of harmful and hazardous drinking [OR=1.13, p=.13; OR=1.33, p<.001] among those who first answered questions on **recent consumption** and **impact of alcohol use**
- Lower self-reported **recent consumption** [IRR=0.91, p=.023] was found among those first asked about **average consumption**
- **Quality of life** was reported lower [β=-0.98, p<.001] among those who first responded to questions on **impact of alcohol use**
- **Impact of alcohol use** scores were lower [β=-1.14, p=.003; β=-1.13, p=.004] among those who first answered questions on **average consumption** and **quality of life**
- Attrition was lowest when **average consumption** was asked first, and highest when **quality of life** or **impact of alcohol use** was asked first

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Discussion and Conclusions

- The ORBITAL COS is fast to administer (~4 minutes)
- Found evidence of order effects among the four clusters of ORBITAL COS outcomes
- The order of outcomes should be guided by study priorities:
  - To minimize attrition, consumption measures should be asked before QoL and impact of alcohol use
  - This order resulted in higher self-reported alcohol consumption
- At a minimum, all participants should be asked the same questions in the same order

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Thank you.

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Original research

The effect of question order on outcomes in the orbital core outcome set for alcohol brief interventions among online help-seekers (QOBCOS): Findings from a randomised factorial trial

Marcus Bendtsen [1], Claire Garnett [2], Paul Toner [3], and Gillian W Shorter [3,4]

Objective A core outcome set (COS) has been developed in alcohol brief intervention (ABI) research through international consensus. This study aimed to estimate order effects among questions in the COS.

Methods Individuals aged 18 or older who searched online for alcohol-related help were invited to complete the COS. The order of questions was randomised following a factorial design. Primary outcomes were order effects among the COS items and patterns of attrition.

Results Between 21/10/2020 and 26/11/2020, we randomised 7334 participants, of which 5256 responded to at least one question and were available for analyses. Current non-drinkers were excluded. We found evidence of higher self-reported average consumption and odds of harmful and hazardous drinking was found among those who first answered questions on recent consumption and impact of alcohol use. Lower self-reported recent consumption was found among those first asked about average consumption. Quality of life (QoL) was reported lower among those who first responded to when questions on impact of alcohol use were asked first, which in turn was lower among those who first answered question on when average consumption and QoL were asked first. Attrition was lowest when average consumption was asked first, and highest when QoL or impact of alcohol use was asked first. Median completion time for the COS was 4.3 min.

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