Brief breath counting training protects against stress-induced alcohol-seeking in hazardous drinkers

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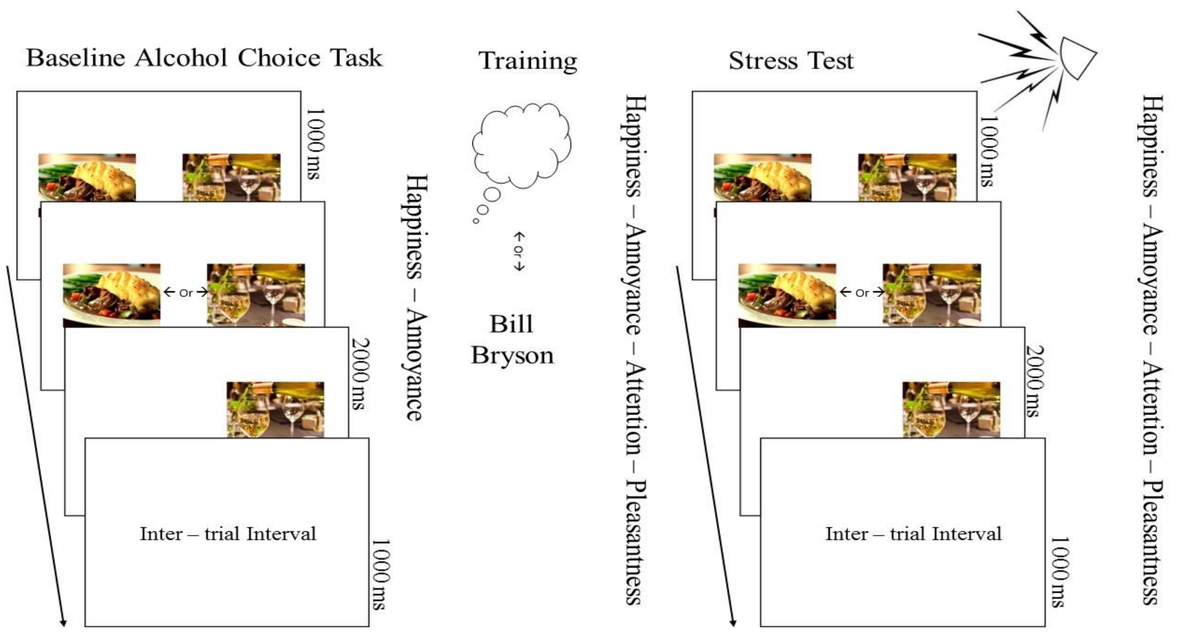
Introduction

- Mindfulness-based interventions have shown beneficial effects on drinking outcomes [1].
- It is proposed that mindfulness training may achieve effects on drinking outcomes by increasing resilience to stress induced drug seeking [2,3].
- Previous lab studies have explored the effects of brief mindfulness inspired interventions in negative mood and stress induced alcohol craving and consumption, however, the evidence is mixed [4,5].
- The aim of this study is to test whether brief breath counting training (a core component of mindfulness training) can protect hazardous drinkers from stress induced alcohol-seeking effects.

Method

➢ **Procedure:**

- 85 hazardous drinkers (> 8 in AUDIT) were recruited in local pubs in Exeter. Participants were randomly assigned to receive breath counting training or listen to an audiobook (control group) (see Table 1 for baseline characteristics).



- Baseline alcohol choice was measured in a computerised pictorial choice task.

Training manipulation: Participants then listened to a 6 – minute recording inviting them to relax, focus their attention on their body and count their breaths. Participants in the control condition listened to a 6-minute recording of an audio book. Pleasantness of the intervention was scored on a 5 point Likert scale (Figure 2).

- Alcohol choice under stress induction was then measured. This task was identical to the baseline alcohol choice task with the addition of a loud industrial noise.

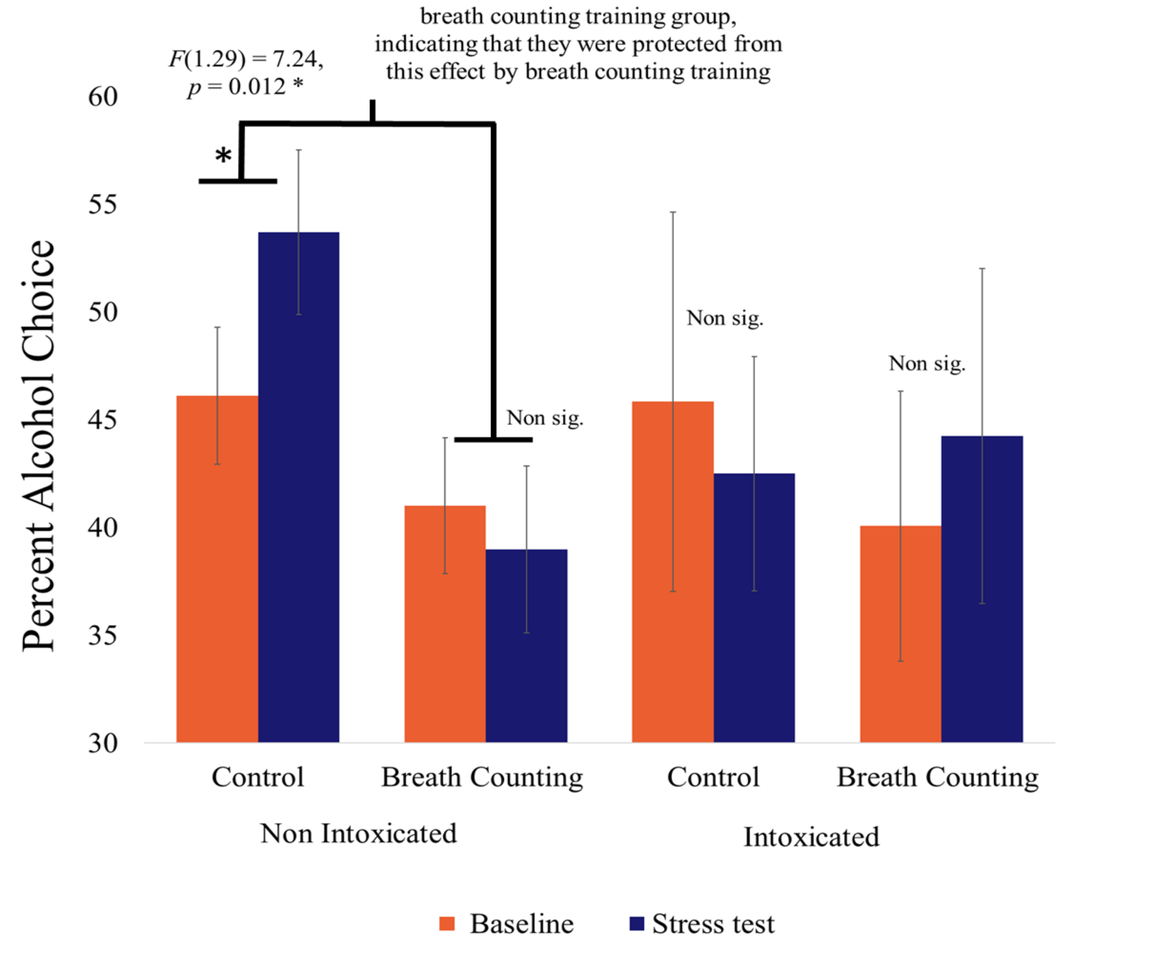
Participant Characteristics (Table 1)

	Non Intoxicated Groups		Mildly Intoxicated Groups		
	Control Group (*n = 30)*	Breath Counting Group (*n = 32)*	Control Group (*n = 10)*	Breath Counting Group (*n = 13)*	
	M (SD, min – max)	*M (SD*, min – max)	*M (SD*, min – max)	*M (SD*, min – max)	*p*
Age	29.87 (12.07, 18-66)	26.94 (9.06, 19-57)	38.20 (12.0, 18-66)	31.08 (10.50, 19-50)	.490
Drinking Behaviour (AUDIT)	15.9 (4.61, 9-27)	18.2 (7.08, 9-40)	16.0 (4.61, 9-27)	15.07 (5.48, 9-27)	.284
Drinking Motives (DMQR)	4.19 (1.90, 1.57-8.46)	4.00 (1.48,1.39-6.67)	4.12 (1.90,1.57-8.46)	4.19 (1.82, 1.64-8.57)	.776
Anxiety Symptoms	6.93 (5.39, 0-21)	7.71 (6.31, 0-21)	7.80 (5.39, 0-21)	5.92 (6.15, 0-20)	.388
Depression Symptoms	6.36 (5.34, 0-24)	9.06 (6.85, 0-22)	6.80 (5.34, 0-24)	5.00 (5.38, 0-20)	.150

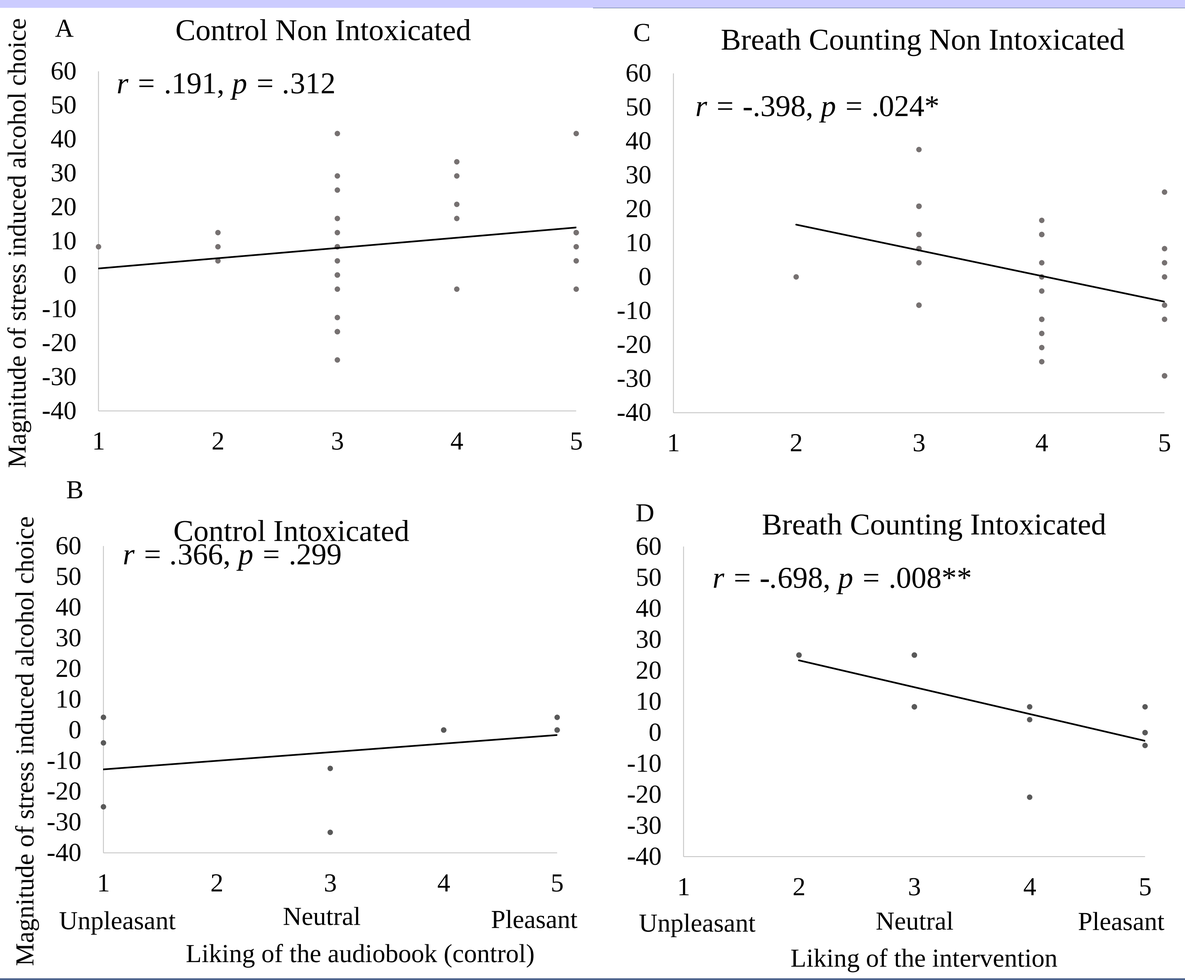
Effects of Stress Induction

Block*Group interaction (F (1.60) = 7.20 , p=.009, η_p^2 = *0.107)*

Group * Intoxication * Block interaction (F (1.81) = 6.86, p=.011, η_p^2 = *0.78)*



Correlations between liking of the intervention/audiobook and effects of stress induction on alcohol choice.



Discussion

1. In non-intoxicated participants, brief breath counting training abolished the stress induced increase in alcohol choice, but listening to the audio book did not.
2. Intoxicated participants showed no effects of the interactions.
3. Participants who liked the breath counting training procedure showed a greater reduction in stress induced alcohol seeking.
4. Our results suggest that brief breath counting training may have utility in protecting against stress induced relapse.

Conflict of Interest: None

1) Bowen, et al., *Mindfulness-based relapse prevention for substance use disorders: A pilot efficacy trial.* Substance Abuse, 2009. **30**(4): p. 295-305. 2) Brewer, J.A., et al., *Mindfulness training and stress reactivity in substance abuse: results from a randomized, controlled stage I pilot study.* Subst Abus, 2009. **30**(4): p. 306-17. 3) Carroll, H. and M.K.B. Lustyk, *Mindfulness-Based Relapse Prevention for Substance Use Disorders: Effects on Cardiac Vagal Control and Craving Under Stress.* Mindfulness, 2018. **9**(2): p. 488-499. 4) Kamboj, S., et al., *Ultra-Brief Mindfulness Training Reduces Alcohol Consumption in At-Risk Drinkers: A Randomized Double-Blind Active-Controlled Experiment.* International Journal of Neuropsychopharmacology, 2017. **20**(11): p. 936-947. 5) Vinci, C., et al., *Effects of a brief mindfulness intervention on negative affect and urge to drink among college student drinkers.* Behav Res Ther, 2014. **59**: p. 82-93.