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Evaluating the interactive effects of responsible drinking messages and attentional bias on actual drinking behaviours

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Key findings

- Responsible drinking posters do not attract significant attention in bar environments
- Responsible drinking posters had no effect on the consumption of beer among study participants

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Background

Responsible drinking messages [RDMs] are widely viewed as a key tool in reducing alcohol-related harms, commonly taking the form of posters displayed in places such as bars, bus stops and toilet cubicles. However, research suggests they may not be effective in reducing problematic consumption. Evaluations have found such messages can improve knowledge around alcohol and responsible drinking, and may also lead to responsible drinking intentions (Kalsher, et al., 1993; Fenaughty & MacKinnon, 2011; York et al., 2012). However, a review found little evidence that RDMs changed actual drinking behaviour (Wakefield et al., 2010). Furthermore, recent research suggests that, in some contexts, viewing RDMs can actually increase volumes consumed (e.g. Moss et al., 2015).

This study looked at whether the context in which responsible drinking messages appeared influenced their effectiveness. It did so by observing how participants responded to posters in a bar environment compared a traditional psychology laboratory.

Methods

After completing measures of cognitive attentional bias, alcohol expectancies and prior drinking behaviour, participants were moved (with their eyes closed) to either a traditional psychology laboratory or to a purpose-built facility which simulates a public house. There, they were asked to complete a word search puzzle. In both contexts, participants could see bottles of beer (in reality, non-alcoholic) and a poster containing either a responsible drinking or a general fitness message (see Figure 1). Participants' eye-movements were followed using a mobile eye-tracker which measured the amount of visual attention directed to the word search, the drinks bottles and the poster. After completing the word search, participants consumed as much or as little of the beer as they liked, purportedly as part of a taste preference task.

Figure 1: RDM and control posters

Findings

Attention to Poster:

Participants were less likely to look at the responsible drinking posters in the bar than in the traditional laboratory. This was not the case for the general fitness posters.

Table 1: Mean visual attention directed at the poster across condition.

Context condition	Poster condition	Number of glances at stimuli	Number of longer (>2 second) glances	Total glance duration (seconds)
Lab	Control	16.67 (21.89)	0.83 (2.04)	12.21 (13.61)
	RDM	23.72 (20.35)	1.50 (1.5)	16.40 (21.11)
Bar	Control	23.54 (13.05)	0.96 (2.05)	12.39 (5.86)
	RDM	14.00 (18.24)	0.24 (0.44)	5.89 (6.61)

Attention to drinks and task:

Participants were less likely to look at their drinks in the bar than in the traditional laboratory. When in a bar, they were even less likely to look at their drinks if a responsible drinking message was displayed.

Table 2: Mean visual attention directed at the drinks across condition.

Context condition	Poster condition	Number of glances at stimuli	Number of longer (>2 second) glances	Total glance duration (seconds)
Lab	Control	71.38 (55.48)	4.79 (4.68)	50.36 (36.66)
	RDM	99.95 (74.83)	7.47 (10.29)	74.84 (93.51)
Bar	Control	62.24 (42.98)	1.90 (2.49)	74.44 (104.39)
	RDM	33.77 (33.76)	1.86 (2.66)	32.85 (67.51)

Context, Poster and Consumption.

Despite variations in attention, neither context nor poster type affected actual consumption. The data does suggest that viewing any poster may be linked to lower consumption; however, this is not conclusive.

Strand 2:

Positive alcohol expectancies were associated with the number of longer glances at the drinks. This was the only visual attention index that showed a statistically significant correlation with the alcohol expectancies scale.

The total number of glances and the number of longer glances aimed at the drinks both positively correlated with higher AUDIT scores. However, neither AUDIT, AEQ scores nor alcohol Stroop Test scores predicted the amount of alcohol participants actually consumed. Increased attentional bias scores were associated with lower AUDIT scores.

Table 4; Zero order correlations (full sample).

	1	2	3	4	5	6	7	8	9	10
1. TPT consumption	---	.13	-.17†	-.07	-.18†	-.14	-.19†	.18†	.08	.08
2. Drinks (all glances)		---	-.07	.11	.01	-.15	-.01	.52***	-.16	-.016
3. Drinks (longer glances)			---	.15	-.03	.34***	.21†	-.03	-.04	-.06
4. Drinks (total glance time)				---	-.13	-.12	-.10	-.07	.14	-.07
5.Poster (all of glances)					---	.41***	.53***	.01	.06	.03
6. Poster (longer glances)						---	.68***	-.15	-.12	.14
7. Poster (total glance time)							---	-.04	-.02	.07
8. Wordsearch (all glances)								---	.22***	-.10
9. Wordsearch (longer glances)									---	.67***
10. Wordsearch (total glance time)										---

Notes: *** = p <.001; † = p <.10

Implications

From an applied perspective, these findings suggest responsible drinking posters will attract greater attention if placed in relatively simple contexts (e.g. toilet cubicles or bus shelters) rather than complex alcohol cue-laden environments such as bars. This may also apply to other behavioural messages, such as responsible gambling posters, which are often displayed on the side of gambling and fixed odds betting machines.

However, this study found no evidence that RDM posters affected actual consumption. This is in contrast with some of our own previous work, which suggested they might increase consumption (Moss et al., 2015). In the previous study the RDM posters were visually complex, and contained messages from which the goal of responsible drinking needed to be inferred. The current study disentangled these effects by presenting a simpler poster, where only the text was manipulated and the message to drink responsibly was clear. The lack of substantive effects in this case suggests that the behavioural effects of responsible drinking messages may depend the content of those messages.

The lack of contextual effects in this study is striking. Previous literature on the effects of context on, for example, expectancies has shown a mixed picture - with alcohol cues sometimes leading to more positive expectancies and sometimes leading to no difference. The current work highlights the challenges in understanding how, when and for whom contextual alcohol cues affect attention, expectancies and behaviour. Further work is clearly needed in this area.

Theoretical Implications

The second strand of this research aimed to address theoretical questions about the extent to which attentional bias (measured here using the alcohol Stroop Test) affects visual attention to responsible drinking messages and alcohol consumption. It found that greater levels of attentional bias were linked to more long glances towards drinks. However, there was no relationship between this and shorter glances at drinks. As longer glances are likely to reflect a more conscious processing system (maintenance of attention) and shorter glances a more automated mode (initial attentional orientation), it appears that attentional biases may reflect a more conscious processing of relevant cues (see Field, Munafo and Franken, 2009; Noel et al, 2006; Field et al, 2004).

Conclusions

This project raises new questions for researchers, in particular, around the varied relationship between attentional bias scores and attention times given to alcohol cues, messages and actual drinks.

From an applied perspective, it suggests that both placement and content influence the amount of attention responsible drinking messages receive. However, while less cue-laden environments may be more effective locations in terms of visual attention, in the real world such locations are usually not places where people typically drink. Therefore, the potential impact on behaviour – which is already weak – may be further lessened.

Overall, while this study does not replicate earlier findings that RDM posters may increase consumption, neither does it provide evidence that they are likely to meaningfully reduce the amount people drink. Therefore, even if levels of attention are affected by context and content, there remains little evidence that RDM posters have any significant impact on behaviour.

Further Information

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