

# Reward-related attentional capture is associated with increased compulsive behaviours during COVID-19

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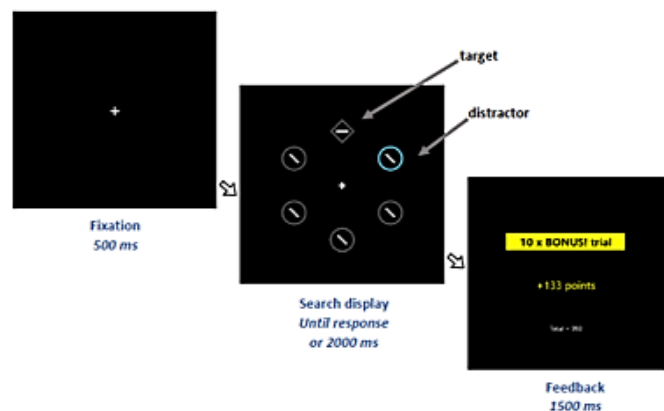
## INTRODUCTION

The COVID-19 pandemic has resulted in high levels of psychological distress with many people engaging in compulsive or unhealthy behaviours to cope. Cognitive risk factors, such as reward-related attentional capture, may increase the likelihood that such behaviours become problematic. The current study examined the relationship between reward-related attentional capture and compulsive behaviours, lifestyle habits, and resilient coping during the first COVID-19 lockdown.

## METHODS

Participants were 245 students (age = 22 years, 62% female) from two student cohorts at Monash Business School. Both cohorts completed an online visual search task to measure reward-related attentional capture (using a modified<sup>1</sup> VMAC<sup>2</sup> task (see Fig. 1) and measures of resilient coping (BRCS), problematic drinking, problematic internet use, and lifestyle habits. Only the second cohort completed measures of obsessive-compulsive and compulsive shopping behaviours ( $n = 106$ ). For all problematic behaviours, only participants who endorsed recent engagement completed the measures.

VMAC score was converted to a categorical variable based on whether participants were quicker (Goal-Trackers,  $n = 112$ ) or slower (Sign-Trackers,  $n = 133$ ) on high-reward trials than low reward trials. Negative binomial regressions examined the associations between VMAC score and compulsive and lifestyle behaviours, controlling for age, gender, COVID-related stressors, and pre-COVID levels of the behaviour in question. A multiple linear regression examined the relationship between VMAC status and resilient coping, controlling for age, gender, and COVID-related stressors.

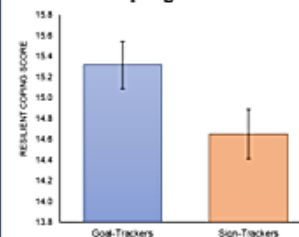


**Figure 1.** Participants responded to the orientation of the line segment (horizontal or vertical) within the diamond (target). One of the nontarget circles could be coloured. A distractor rendered in a high-reward colour signalled that this was a bonus trial on which a large reward could be won. If instead the distractor was rendered in a low-reward colour, then only a small reward was available. Slower response times (RTs) on high-reward trials than low-reward trials demonstrate reward-related attentional capture. Participants with a positive score were classified as 'Sign-Trackers' ( $n = 133$ ) and those with a negative score were classified as 'Goal-Trackers' ( $n = 112$ )

## RESULTS

- Pre-COVID OC behaviours ( $p < .001$ ), COVID stressors ( $p = .011$ ), and Sign-Tracking ( $p = .030$ ) were associated with greater lockdown OC behaviours.
- Pre-COVID shopping ( $p < .001$ ), COVID stressors ( $p = .050$ ), and Sign-Tracking ( $p = .038$ ) were associated with lockdown shopping.
- Sign-tracking ( $p = .045$ ) and COVID stressors (at trend level,  $p = .058$ ) were associated with lower resilient coping score.
- Pre-COVID intake of high sugar food ( $p < .001$ ) and Sign-Tracking ( $p = .050$ ) were associated with more frequent consumption of high-sugar foods during lockdown.
- Problematic internet use, drinking, sleep and exercise habits during lockdown were not associated with sign-tracking (VMAC).

## Resilient coping

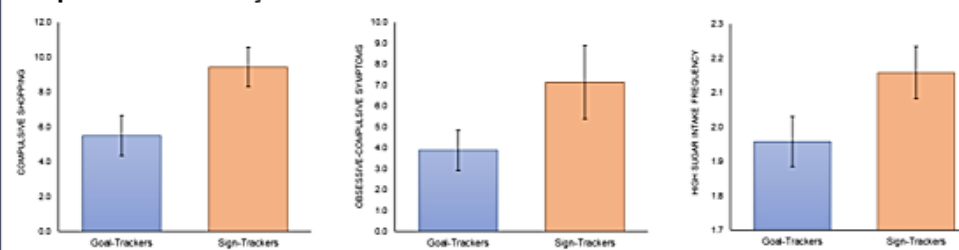


**BRCS Instructions:**  
Consider how well the following statements describe your behavior and actions.

|  | (1) Does not describe me at all | (2) Does not describe me | (3) Neutral | (4) Describes me | (5) Describes me very well |
|--|---------------------------------|--------------------------|-------------|------------------|----------------------------|
| I look for creative ways to alter difficult situations.                      |                                 |                          |             |                  |                            |
| Regardless of what happens to me, I believe I can control my reaction to it. |                                 |                          |             |                  |                            |
| I believe I can grow in positive ways by dealing with difficult situations.  |                                 |                          |             |                  |                            |
| I actively look for ways to replace the losses I encounter in life.          |                                 |                          |             |                  |                            |

Sinclair, V. G., & Wallston, K.A. (2004). The development and psychometric evaluation of the Brief Resilient Coping Scale. *Assessment*, 11 (1), 94-101. <https://www.ncbi.nlm.nih.gov/pubmed/15399595>

## Compulsive or unhealthy behaviours



## DISCUSSION

Sign-tracking status was associated with certain addiction-related and obsessive compulsive behaviours, unhealthy eating habits, and lower resilient coping during the COVID-19 lockdown. Importantly, these associations were adjusted for pre-COVID levels and number of experienced COVID stressors. These findings have implications for understanding the mechanisms that drive risk for increased compulsive behaviours during the current pandemic and early identification of individuals at risk.

## REFERENCES

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- Le Pelley, M.E., Pearson, D., Griffiths, D., Beesley, T., 2015. When goals conflict with values: Counterproductive attentional and oculomotor capture by reward-related stimuli. *Journal of Experimental Psychology: General* 144(1).