

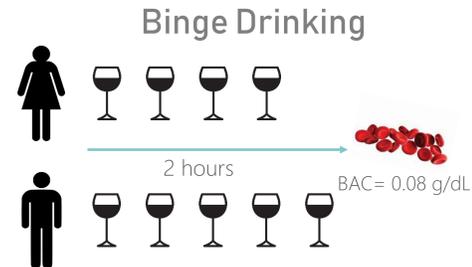
The Effects of Hangover on Inhibitory Control in Young Binge-Drinkers: A Preliminary Event-Related Potentials Study

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BACKGROUND

Alcohol is the most commonly used intoxicant in the world and its excessive consumption can lead to a pattern known as binge drinking (BD), which is widespread among youngsters and more significantly among college students (NIAAA, 2015; Eurobarometer, 2010). This pattern is characterized by an excessive intake of alcohol over a brief period of time, that occurs at least once in two weeks or in a month and it is followed by a period of abstinence (Courtney & Polich, 2009; NIAAA, 2004). Studies in humans have reported several consequences linked to BD, such as structural and functional brain impairments and poor cognitive performance (López-Caneda et al., 2014; Petit et al., 2013). The day after excessive alcohol intake, people usually experience a series of unpleasant physical and mental symptoms, known as hangover, which are especially significant when BAC reaches 0 g% (Penning et al., 2010). Some studies have demonstrated that hangover may involve major impairments on different cognitive processes (Prat et al., 2008). However, no study has explored the behavioural and electrophysiological consequences of hangover on the day after a regular BD episode despite the important implications that might result from this research.



AIMS

The aim of this study was to examine for the first time the brain activity of young BDs the day after a typical BD episode. We aimed at evaluating the electrophysiological response associated with inhibitory control processes in college students with a BD pattern by means of ERPs before and after a typical alcohol consumption.

HYPOTHESIS

After a BD episode (i.e. hangover state), the college students BDs would show:

- Poorer task performance:** ↓ correct responses (%) and ↑ reaction times.
- Electrophysiological anomalies:** ↓ amplitude and ↑ latency in the P2, N2, and P3 components and in the LPC.

METHODS

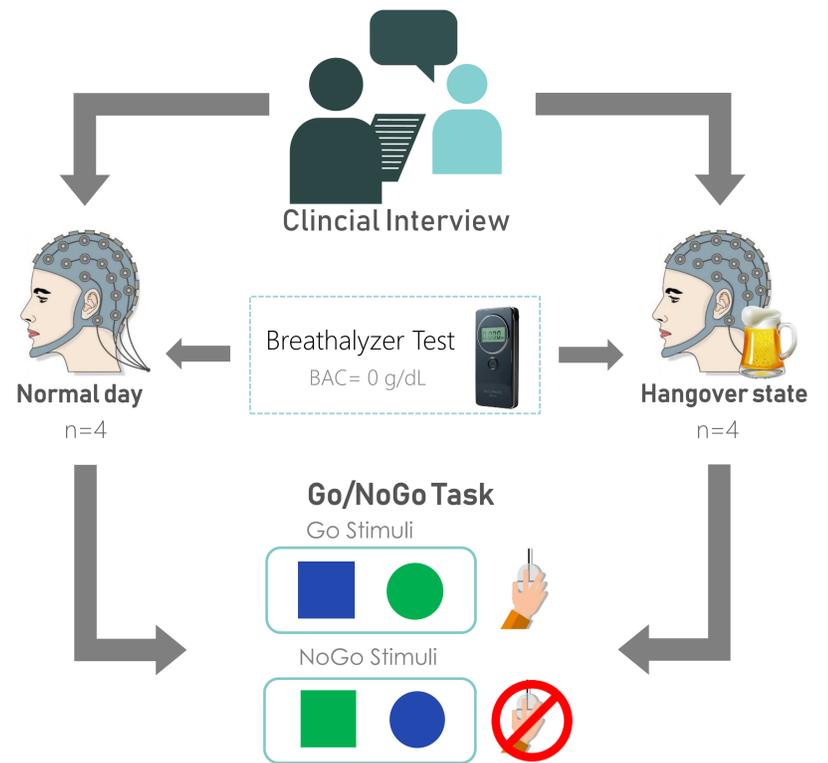
- PARTICIPANTS -



- MATERIALS -



- PROCEDURE -

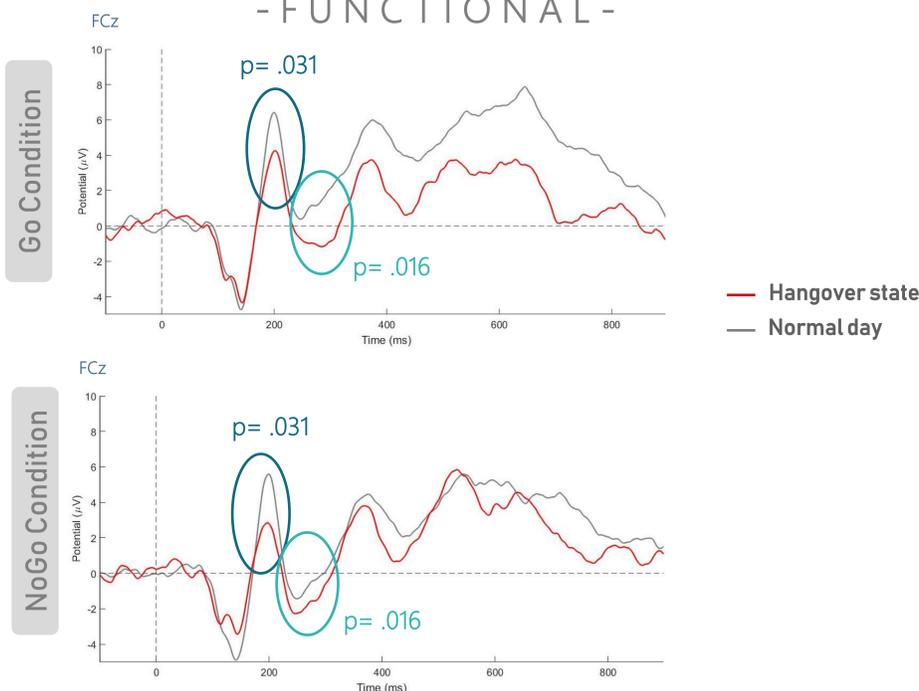


RESULTS

- BEHAVIOURAL -



- FUNCTIONAL -



DISCUSSION

The present study is the first to assess the brain activity of college students before and after a typical BD episode. Despite having found no hangover effects at a behavioural level, electrophysiological abnormalities emerged the day after a heavy alcohol drinking episode:



CONCLUSION

A single BD episode may significantly compromise the allocation of attentional resources needed to perform the task in the following day. Furthermore, after a BD episode, college students seem to display difficulties in deciding whether a response need to be inhibited or not. This may have a negative impact on the academic performance of young people and in their daily life.

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