

The effects of Cognitive Load on the Subjective response of Alcohol

Saleena L. Lynch¹, Bruce D. Bartholow², Casey Kohen², and Roberto U. Cofresi^{2 1}Radford University-Radford, VA 24142

²Department of Psychological Sciences-University of Missouri, Columbia, MO Presented on 7/29/2021

Alcohol researchers commonly ask participants to perform challenging—and often boring—cognitive tasks during alcohol challenge experiments in which subjective responses to alcohol are also measured. It remains unclear whether reported subjective effects (e.g., stimulation, sedation, and intoxication) differ when measured in the context of cognitive task performance. Here, data from a large-scale alcohol challenge study were used to address this question. Participants were randomly assigned to one of three experiments, which differed according to the tasks they were asked to perform (response inhibition, working memory updating, or task switching). Within each experiment, participants were randomly assigned to one of three beverage conditions (alcohol [0.80 g/kg for men; 0.72 g/kg for women], placebo [0.04 g/kg], or control) and one of two task performance conditions: A/D group participants completed tasks while their breath alcohol concentration (BrAC) was ascending and again while their BrAC was descending; D-only group participants watched an episode of a TV comedy (The Office) during ascending BrAC and completed cognitive tasks only during descending BrAC. Participants in the alcohol and placebo groups were asked to self-report feelings of stimulation, sedation, and subjective intoxication using validated questionnaires at multiple time points during both ascending and descending BrAC. We predicted that performing cognitive tasks would decrease self-reported stimulation and increase self-reported sedation; we had no prediction regarding subjective intoxication. Ascending limb reports of these subjective effects were compared across A/D and D-only groups. Analyses showed little effect of cognitive task performance on subjective responses. Specifically, Group x Time repeated-measures analyses of variance showed few group differences in any of the outcomes. Based on these results, we tentatively conclude that performance of standard cognitive tasks during alcohol challenge has little effect on participants' subjective responses to alcohol.