



Ethnoracial Effects in Neural Reactivity to Alcohol Cues in Comorbid PTSD and Alcohol Use

Disorder (AUD)

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Background: AUD and PTSD commonly co-occur. The estimated lifetime prevalence rate of AUD among US adults is 29.1%, and AUD is associated with 30% increased odds of PTSD. Although AUD has a lower prevalence rate among Black populations, Black individuals who drink are more likely to experience more severe AUD symptoms and adverse drinking consequences than their white counterparts. This study aims to determine if there is a difference in neural responses to alcohol, trauma, and neutral auditory cues based on race and alcohol use severity by race for comorbid PTSD/AUD. **Methods:** Baseline measures assessed AUD and PTSD severity among participants (N = 51; 35% Black) who met criteria for current AUD and PTSD. A functional magnetic resonance imaging scan was conducted, where patients were presented with personalized alcohol, trauma, and neutral cues. Statistical analysis of fMRI data was performed using FMRI Expert Analysis Tool (FEAT). **Results:** For the Alcohol > Neutral contrast, higher percent drinking days were associated with greater activation in the supramarginal gyrus/angular gyrus for Black participants as compared to white participants. For the Alcohol > Trauma contrast, higher percent heavy drinking days were associated with greater activation in the precuneus cortex/cingulate gyrus for Black participants compared to white participants. **Conclusion:** Greater activation of regions primarily associated with memory and attention for Black individuals suggests that habitual alcohol use may enhance positive memories about alcohol and feelings associated with drinking alcohol for this population. Exposure to alcohol cues may trigger memories of drinking, which could be linked to alcohol craving. Although preliminary, the differences observed in neural reactivity could inform how treatment can be tailored to address the unique needs of individuals with AUD/PTSD by racial identity and create more effective interventions.