Assessing Cue-Induced Craving in Individuals with Methamphetamine Addiction Through Portable EEG Technology

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BACKGROUND

Incubation of drug craving has been observed in humans and animals across numerous abusive substances. Craving in response to drug-related cues has been shown to follow a parabolic pattern1. Previous work has demonstrated an increase in craving after cue presentation compared to baseline1. Electroencephalogram (EEG) has used to measure levels of motivated attention in response to cues2.

OBJECTIVES

• To determine the trajectory of cue-induced craving in individuals addicted to methamphetamine
• To determine the pattern of cue-induced craving over time from abstinence using EEG and subjective reporting.

Expected Results

• We anticipate that the EEG data will show cue-induced craving in a parabolic pattern
• We further predict that this pattern will not reflect individuals’ subjective reporting

METHODS

Sample

• Individuals currently part of the ROAR CANADA study who use stimulants

Procedure

• Participants complete a computer task
• They are shown an image followed by a series of prompts (Figure 1)

Measures

• Participant responses to prompts during computer task
• EEG recording via the Muse headband (Figure 2)

Muse Headband

• Portable EEG headband
• Provides several advantages not afforded by traditional EEG systems
• Allows access to a wider population
• Advantageous for use in inpatient populations with restrictions on travel
• Shown to be effective in prior research3
• Allows ERP research and real-time EEG3

Figure 1. Computer task completed by participants

Figure 2. Muse headband

References

5. https://www.wareable.com/media/imager/201504/4026-original.jpg