Investigating the Impact of Between-Subject and Within-Subject Variations in Marijuana Craving on Use Frequency Using Ecological Momentary Assessment

Abstract:

Ecological Momentary Assessment (EMA) offers a robust method for examining the real-time dynamics of marijuana craving and its influence on use frequency. This study aims to investigate how between-subject differences in average craving levels and within-subject variability in craving are associated with the frequency of marijuana use.

EMA data were collected from 100 participants over a 6-month period, with 5 daily assessments capturing self-reported craving intensity (0-10 scale), marijuana use (yes/no), mood, anxiety, and contextual details such as time and location. Mixed-effects location scale models will be employed to model both the mean and variance of craving, enabling an analysis of how individual differences and time-varying factors influence craving and its relationship with use frequency.

We hypothesize that participants with higher average craving levels (between-subject variation) will report more frequent marijuana use. Additionally, greater within-subject variability in craving is expected to predict increased use frequency, as individuals may be more likely to use marijuana during periods of heightened craving. These relationships will be analyzed while controlling for potential confounders such as mood and anxiety.

By elucidating these dynamics, this study seeks to inform the development of targeted interventions that address both the overall level and fluctuations in craving to reduce marijuana use frequency.

Keywords: Ecological Momentary Assessment, marijuana craving, use frequency, mixed-effects models, between-subject variation, within-subject variation