

Stress response of people who use methamphetamine in an ED-relevant or standard social stressor task compared with matched controls

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Methamphetamine (MA) use often contributes to agitation in emergency department (ED) settings, but ethical/logistical issues prevent its study in the ED. We investigated the feasibility, acceptability, and validity of a laboratory-based task based on social stressor models.

People who use meth (PWUM) and age-matched controls without substance use history, all with prior experience in an ED, participated in an ED-relevant (EDR) or a standard social stressor (SSS) task consisting of a stress and control session. For the EDR, participants spoke about a prior stressful ED visit, based on a personalized script. For SSS, participants read standardized scripts on emotionally provocative topics. In both stress sessions, participants performed mental arithmetic following speeches. During the control session, participants watched nature videos. Vital signs, salivary cortisol, salivary amylase, mood rating, and behavioral agitation/ethology ratings were obtained at regular intervals.

All study procedures were completed in 10 PWUM and 5 controls in the EDR and 10 PWUM and 4 controls under the SSS. Preliminary EDR data from 6 PWUMs show significant increases in systolic blood pressure, heart rate, and agitation scores in the stress versus non-stress conditions. sCort levels decreased relative to baseline in both conditions, while sAA levels appeared to increase during the arithmetic phase of the stress condition. On a 1-9 Likert scale, participants rated the stress as highly representative of an ED (7.2 ± 0.7).

This experiment represents the first real-world laboratory model of human agitation, with preliminary findings suggesting that EDR may have utility as an ED model of “mild agitation.”