DETRIMENTAL EFFECTS OF ECSTASY USE SEVERITY ON FACIAL EMOTIONAL EXPRESSION RECOGNITION

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BACKGROUND

- Facial expression recognition is a crucial feature of emotional, social behavior and interaction. Previous studies have shown that Substance Dependent Individuals (SDI) are impaired in their recognition of emotional facial expressions portrying basic emotions.

- A recent study (Hoshi, Bisla, & Curran, Drug Alcoh Dep, 2004) demonstrated that ecstasy abusers (simultaneoulsy using other stimulant drugs) showed a specific impairment in recognizing fearful facial expressions during early withdrawal.

- The aim of this study is to examine the influence of stimulants use severity and duration of abstinence on recognition of basic emotions in polysubstance ecstasy users.

METHODS

- Fifty-one polysubstance SDI were recruited as they entered inpatient addiction rehabilitation. Mean age was 30.34 (SD=6.25), and mean years of education was 9.62 (SD=2.71). Mean abstinence duration was 17.43 (SD=21.85) weeks.

- The Interview for Research on Addictive Behaviors (IRAB), and the Matsumoto and Ekman Japanese and Caucasian Facial Expressions of Emotions (JACFEE) were administered to all participants. The IRAB assesses the severity (average dosing, frequency, and duration) of the different drugs used in this sample: alcohol, cocaine, amphetamines, and ecstasy. The JACFEE taxes recognition of facial expressions portraying seven basic emotions: Anger, Contempt, Disgust, Fear, Happiness, Sadness, and Surprise.

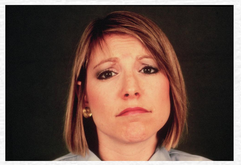
- We used recognition indices from the JACFEE and Z scores of drug use severity as the main variables of the study.

RESULTS

- We used hierarchical regression analyses to study the effects of abstinence duration as well as amphetamines, cocaine, and ecstasy use severity on facial expression recognition.

- Regression analyses showed that the standardized index of severity of ecstasy abuse was the best predictor of emotional recognition as measured by the JACFEE (F change=4.302; p<.05). Both variables were inversely correlated. Indexes of cocaine and amphetamine use severity, and duration of abstinence did not significantly predict performance on JACFEE.

- Post-hoc independent analyses of the impact of quantity and duration of drug use showed that ecstasy peak use was the best predictor of facial expression recognition.



Examples of facial expressions (fear and sadness) from the JACFEE

Drug related variables	R^2 Adj.	Change *F*
Abstinence Duration	.016	1.657
Ecstasy Severity	.091	4.302*
Amphetamines Severity	.069	.087
Cocaine Severity	.064	.807

CONCLUSIONS

- Ecstasy use severity differentially impacts facial emotional recognition in chronic users.

- This is consistent with previous results showing that acute doses of ecstasy impairs emotional recognition during early withdrawal.

- Ecstasy´s selective effects on 5HT depletion may be associated with the specific effects of ecstasy on emotion as opposed to the effects of other stimulants.