An Examination of the Self Medication Hypothesis with HIV+ Methamphetamine Users

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Abstract:
The self medication hypothesis proposes that self regulation vulnerabilities are a key risk factor for the development and maintenance of substance use disorders. Consequently, psychological factors may be important correlates of substance use and HIV disease management. The present cross-sectional study examined the self medication hypothesis in a sample of 122 HIV-positive methamphetamine users on anti-retroviral therapy (ART). HIV-specific traumatic stress was independently associated with an increased likelihood of reporting at least weekly use of cocaine/crack. Negative affect was independently associated with a greater likelihood of reporting at least weekly use of methamphetamine. Positive affect was associated with a decreased likelihood of reporting any injection drug use in the past month and an increased likelihood of reporting perfect ART adherence in the past month. Findings provide some support for the self medication hypothesis and indicate that psychological interventions may assist methamphetamine users with reducing stimulant use and improving ART adherence.

Introduction:
• Stimulant use is associated with ART non-adherence, elevated HIV viral load, and HIV transmission risk.
• Consequently, stimulant users have been identified as an important group to target for HIV primary and secondary prevention efforts.
• Research is needed to inform the development of innovative ART adherence interventions designed for HIV-positive stimulant users.
• The self medication hypothesis proposes that difficulties with affect regulation may be one key component of substance use disorders.
• We tested the self medication hypothesis by examining stress or affect as correlates of stimulant use and ART adherence in a sample of ART-treated methamphetamine users.

Methods:
Procedures
122 ART-treated individuals who reported using methamphetamine during the past 30 days completed study measures.

Measures
HIV-Specific Traumatic Stress: 15-item Impact of Event Scale.
Positive and Negative Affect: 20-item Positive and Negative Affect Schedule.
Stimulant Use: Self reported number of days using cocaine/crack or methamphetamine in the past 30 days (≥ 4 was at least weekly use).
Injection Drug Use: Any self report of injection drug use in the past 30 days.
ART Adherence: Visual analogue scale assessing percent adherence in the past 30 days. Dichotomized as 100% versus < 100%.

Statistical Analyses:
We utilized hierarchical logistic regression. Age and ethnicity were selected as covariates for all models. For ART adherence, time since HIV diagnosis and time since starting ART were included as additional covariates. The independent effects of each type of stress or affect were assessed by including all three measures in a second regression block. Composite scores were transformed into z-scores (M = 0, SD = 1) to facilitate interpretation of the ORs.

Results:
Demographics
The sample was predominantly gay (64%) men (94%) of diverse ethnicities (41% Caucasian, 32% African American, 14% Hispanic/Latino)
The mean age of participants was 44 and individuals had been diagnosed with HIV for an average of 14 years.

HIV-Specific Traumatic Stress
Associated with a greater likelihood of reporting cocaine/crack at least weekly:
OR = 2.18 (95% CI = 1.33 – 3.58)
Unrelated to other outcomes (p > .05).

Negative Affect
Associated with a greater likelihood of reporting methamphetamine use at least weekly:
OR = 1.76 (95% CI = 1.02 – 2.03)
Unrelated to other outcomes (p > .05)

Positive Affect
Associated with a decreased likelihood of reporting injection drug use in the past month:
OR = 0.62 (95% CI = 0.38 – 0.99)
Associated with an increased likelihood of reporting 100% ART adherence:
OR = 1.79 (95% CI = 1.06 – 3.03)
Unrelated to other outcomes (p > .05).

Discussion:
• HIV-specific traumatic stress and negative affect have may independent effects.
• These associations support the self medication hypothesis as well as stress and coping theory. Findings highlight that distinct types of stress and affect have may independent effects.
• Trials are needed to examine the efficacy of innovative interventions that are designed to improve affect regulation among HIV-positive methamphetamine users on ART.

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