The Role of Avoidance and Inflexibility in Predicting Response to Contingency Management for Cocaine Use Disorders: A Secondary Profile Analysis

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Abstract

Aims: Contingency management (CM) is a reinforcement-based approach that provides tangible rewards for objectively verified drug abstinence. CM is the most effective available behavioral intervention for cocaine use disorders; however response to CM is variable with significant rates of non-response. This poster describes a secondary profile analysis to distinguish CM responders and non-responders on pre-treatment cognitive-affective factors: negative affectivity, experiential avoidance, impulsivity, and cocaine craving/withdrawal symptoms.

Methods: A secondary profile analysis was conducted to identify clinically relevant cognitive-affective characteristics potentially associated with CM response (abstinence vs. continued use) preceding a cocaine pharmacotherapy trial. Ninety-nine cocaine-dependent, treatment-seeking adults participated in a 4-week baseline CM procedure using high-value vouchers for submission of cocaine-negative urines. Separate profiles for responders and the non-responders were established using standardized mean scores on relevant pre-treatment, cognitive-affective measures.

Results: Results indicated no differences between responder subgroups on levels of negative affect, withdrawal/craving, or impulsivity; however, CM non-responders, relative to responders, reported significantly higher levels of avoidance and behavioral inflexibility (p < .01) in the context of distancing cocaine-related thoughts, feelings and bodily sensations.

Conclusions: Psychological flexibility may be an important treatment target for enhancing outcomes in cocaine use disorders.

Introduction

- Cocaine use disorders are a significant public health concern with wide-ranging medical, psychiatric, and social consequences.
- Contingency management (CM) is an approach that provides tangible reinforcement for objectively verified drug abstinence or other target behaviors and is a leading behavioral intervention for cocaine use disorders (Dutra et al., 2008).
- Little is known about individual-level characteristics associated with a positive CM response.
- Identifying individual cognitive-affective characteristics associated with CM response can be targeted via cognitive-behavioral strategies that should have the potential to inform the development of specialized intervention programs designed to improve abstinence outcomes.
- Documented cognitive-affective factors examined in the substance use literature can be broadly categorized as negative affect, experiential avoidance, impulsivity, and craving/withdrawal.

Aims

- The primary aim of the study was to distinguish CM responders and non-responders on pre-treatment cognitive-affective factors with well-established relations to cocaine use.
- We hypothesized profile differences such that CM responders would show lower levels on each of the cognitive-affective factors compared to CM non-responders.

Methods

Sample: Treatment-seeking, cocaine-dependent adults (18–55 years old) submitting at least one cocaine-positive urine result during screening.

Procedures: Participants entered a 4-week non-medicated baseline period aimed at the initiation of abstinence using high-magnitude CM. Diagnostic interviews and self-report measures were completed prior to beginning the CM intervention. Thrice-weekly clinic visits (MWF) with urine toxicology screening were required. Achievement of abstinence was operationally defined as six consecutive cocaine-negative urines (two weeks of abstinence).

- Negative affect was measured using the Beck Depression Inventory-II (BDI-II; Beck & Steer, 1984), (Cronbach’s α = 92); the Depression Anxiety Stress Scales (DASS-21; S. H. Lovibond & P. F. Lovibond, 1995), (Cronbach’s α = 89); and the negative affectivity subscale of the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Carey, 1988) (Cronbach’s α = 87).
- Experiential avoidance was measured with the Avoidance and Inflexibility Scale (AIS; Gifford et al., 2004; Gifford et al., 2011) (Cronbach’s α = 87).
- Cocaine withdrawal/craving was measured using the Cocaine Selective Severity Assessment (CSSA; (Kampman et al., 1998) (Cronbach’s α = 71).
- Impulsivity was measured with The Barratt Impulsiveness Scale-11 (BIS-11; Patton, Stanford, & Barratt, 1995) (Cronbach’s α = .73).

Analysis: Profile analysis required all dependent variables to utilize the same metric, necessitating z-scoring the AIS, BDI-II, DASS-21, PANAS, CSSA, and BIS-11. Follow-up of statistically reliable findings used a Holm-Bonferroni correction.

Results

- Responders (n = 39) and non-responders (n = 60) did not differ on baseline demographic or drug history variables.
- Profile analyses demonstrate a reliable effect indicating differences in profile shape (Wilks’ Lambda = 0.835, F(5, 93) = 16.27, p < .0001) and in the context of distressing cocaine-related thoughts, feelings and bodily sensations.
- Post hoc testing showed a reliable difference in AIS scores, whereby non-responders (M = 48.3, 95% CI [45.7, 50.9]) demonstrated higher scores on the AIS than responders (M = 41.8, 95% CI [37.9, 45.5]).
- No other measures revealed reliable group differences.

Descriptive Statistics and Post-Hoc Tests

<table>
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<tr>
<th>Measure</th>
<th>M</th>
<th>SD</th>
<th>Wilk’s λ</th>
<th>F</th>
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</tbody>
</table>

Discussion

- CM responders and non-responders were not reliably different in baseline self-reported negative affect, impulsivity, and craving/withdrawal.
- Non-responders had higher levels of experiential avoidance and inflexibility, i.e., non-responders differed from responders in their approach to managing their negative internal experiences.

Conclusions

- Experiential avoidance and behavioral inflexibility may be an explanatory mechanism for CM treatment failures.
- Cocaine dependent adults who were less sensitive to reward contingencies were more avoidant and inflexible in their responses to distressing internal experiences.
- Acceptance and mindfulness interventions targeting psychological inflexibility may improve treatment outcomes for cocaine use disorders.

Limitations

- As this was a post-hoc secondary data analysis, available measures of the selected constructs were limited by the parent study protocol.
- The relatively small sample size limits generalizability and the ability to detect small effects.

References


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