



# CONTINGENCY MANAGEMENT AND ANTISOCIAL PERSONALITY DISORDER

---

Karen K. Chan <sup>1,3</sup>, Alice Huber <sup>1,2,3</sup>,  
John M. Roll <sup>1,3</sup>, and Vikas Gulati <sup>1,3</sup>

Friends Research Institute, Inc.<sup>1</sup>

Long Beach Research Foundation: VAMDRU <sup>2</sup>

UCLA Integrated Substance Abuse Programs <sup>3</sup>

*Address correspondence to [kkchan@u.washington.edu](mailto:kkchan@u.washington.edu)*



# Abstract

---

Contingency management (CM), a behavioral reinforcement technique, has been shown to be effective in the treatment of cocaine dependence, and there is emerging data on its effectiveness for methamphetamine (MA) dependence. The prevalence of Antisocial Personality Disorder (ASPD) is considerably higher in drug-abusing populations than in the general population and the outcome of traditional therapies should be evaluated separately for that subpopulation. A recent report indicated that opiate and cocaine abusers with ASPD responded particularly well to a CM program (Brooner et al., 1999). This report examines whether the efficacy of CM as a treatment for MA dependence differs depending on the co-occurrence of ASPD. Data from 166 participants in a NIDA-funded study evaluating medication and CM as MA treatments were examined to consider how ASPD affects the efficacy of CM. 37% (N=61) were diagnosed with ASPD as determined by the Structured Clinical Interview for DSM-IV Diagnoses (SCID). Those randomized to the CM condition achieved significantly longer periods abstinence than those individuals randomized to no CM regardless of ASPD diagnoses. These findings suggest that CM can be a powerful intervention in the treatment of MA dependence and that this effect may be independent of ASPD diagnoses.



# Introduction

---

- Contingency Management (CM) = vouchers are awarded for drug-free urine analyses.
- When combined with drug abuse counseling, CM can be effective in assisting stimulant dependent individuals towards abstinence.
- In methadone maintained patients, take-home doses were contingent on drug-free urine analyses. Patients with CM had longer rates of abstinence from opiates than the control group (Iguchi, Stitzer, Bigelow, Liebson & 88; Magura, Casriel, Goldsith, Sturg & Lipton, 88).
- CM was beneficial in the treatment of cocaine abuse. Participants receiving vouchers and counseling had a longer abstinence than participants receiving only counseling (Silverman, Higgins, Brooner, Montoya, Cone, Schuster, & Preston, 1996).
- Of CM cocaine abusers that had a poorer outcome in treatment, more had Antisocial Personality Disorder (ASPD) (Schuster, Silverman, Harrell, Brooner, Cone, & Preston, 1995).
- Individuals with ASPD responded better to CM than ASPD individuals without CM (Brooner, 1998).



# ASPD Definition

---

## Definition

Antisocial personality disorder is characterized by a lack of regard for the moral or legal standards in the local culture . There is a marked inability to get along with others or abide by societal rules. Individuals with this disorder are sometimes called psychopaths or sociopaths.

## Diagnostic Criteria ( DSM-IV )

1. Since the age of fifteen there has been a disregard for and violation of the rights of others, those rights considered normal by the local culture, as indicated by at least three of the following:
  - A. Repeated acts that could lead to arrest.
  - B. Conning for pleasure or profit, repeated lying, or the use of aliases.
  - C. Failure to plan ahead or being impulsive.
  - D. Repeated assaults on others.
  - E. Reckless when it comes to their or others safety.
  - F. Poor work behavior or failure to honor financial obligations.
  - G. Rationalizing the pain they inflict on others.
2. At least eighteen years in age.
3. Evidence of Conduct Disorder, with onset before the age of fifteen.
4. Symptoms not due to another mental disorder.



# Previous Research

Article	Population	N	% N w/ ASPD
(Barber et al., '96)	Cocaine men & women (outpatient)	289	20%
(Flynn et al. '96)	All Substances (DATOS in & outpat. men & women) <ul style="list-style-type: none"> <li>•Alcohol</li> <li>•Heroin</li> <li>•Heroin &amp; Alcohol</li> <li>•Cocaine</li> <li>•Cocaine &amp; Alcohol</li> <li>•Cocaine &amp; Heroin</li> <li>•Cocaine, Heroin, &amp; Alcohol</li> </ul>	7402	39%  34.7% 27% 46.3% 30.4% 47% 44% 59.8%
(Brooner et al. '98)	Opiate men & women (outpatient)	716	25%
(Kessler et al., '94; Regier et al., '90; Robins et al., '91)	General Population		2.5-3.5%



# Methods

- Drug Cessation Groups
  - Screening Period
- Baseline Data Collection

- Relapse Prevention Groups
  - Weekly Data Collection

-Follow-up Interviews

*Weeks 0.1-0.2*

*Weeks 1-12*

*Weeks 13, 26, 52*

**Urn Randomization**

-CM vs. NO CM

-Zoloft (Sertraline) vs. Placebo (Double-blind study)



# Sample Characteristics

	N=166	%
Gender		
Males	95	57%
Females	71	43%
Ethnicity		
> White	125	75%
> Hispanic	39	24%
> Other	2	1%
> ASPD	61	37%
> No ASPD	105	63%



# Measures

---

- **Urine samples** (collected 3x/wk) were screened for methamphetamine and cocaine; screened for marijuana opiates, and benzodiazepines weekly.
  - **ASPD** determined by the Structured Clinical Interview for DSM-IV Diagnoses (SCID)
- 
- **Longest abstinence**
    - (longest period of stimulant-free days based on urinalysis results)
  - **TES scores** (total # of urine tests clean)
    - (12 weeks of treatment) x (3 urine tests)=36
  - **Percent urine tests clean**
    - (# clean/# submitted)
  - **Retention in Treatment**
    - (number of days in treatment)



# Research Questions

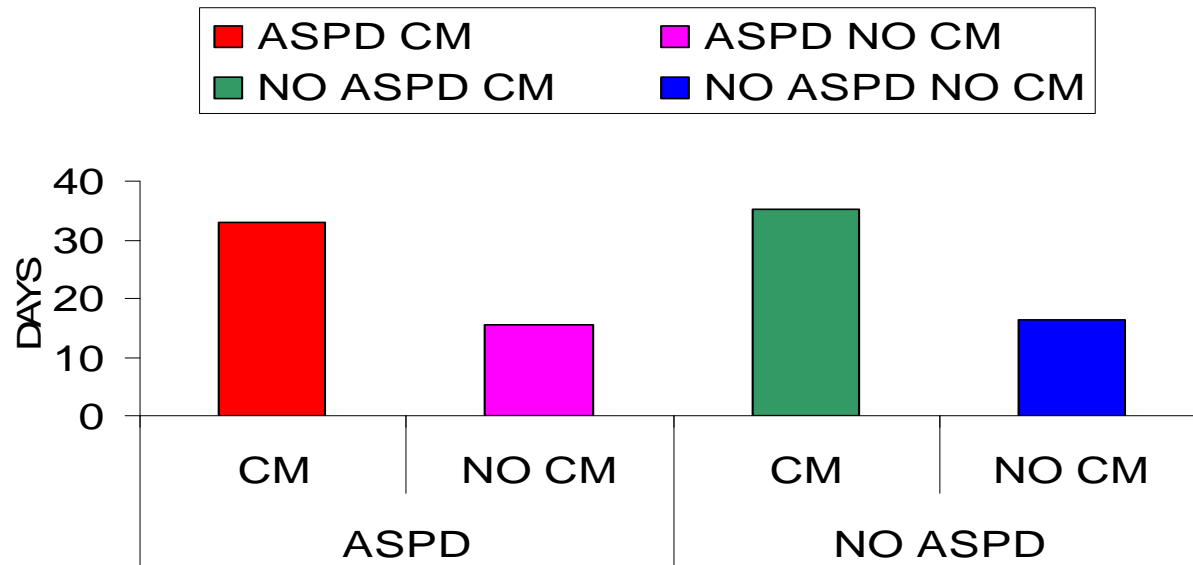
---

*Does CM influence:*

1. Longest abstinence
2. Treatment Effectiveness Scores
3. Percent clean urine tests
4. Retention in treatment

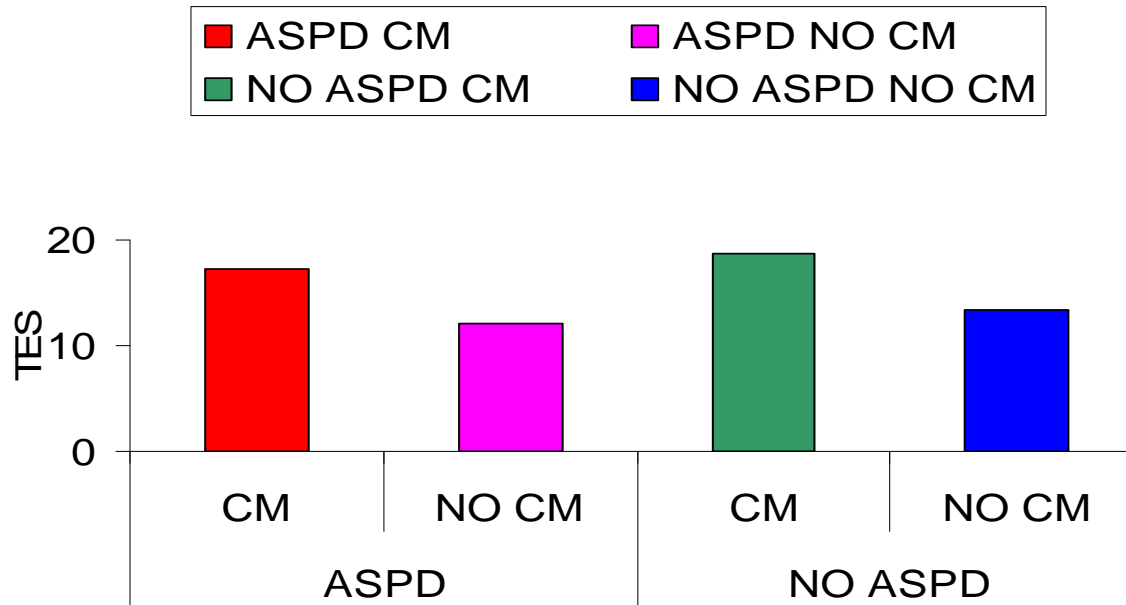
*And, does CM work differently for patients with ASPD?*

# Longest Abstinence



- CM **significantly** improved longest abstinence ( $F=13.6$ ,  $d.f.=162$ ,  $p<.0001$ ).
- The effect of ASPD was not statistically significant (ns).
- No interaction was present between ASPD and CM (ns).

# TES



- CM **significantly** improved TES ( $F=4.4$ ,  $d.f.=1$ ,  $p<.05$ ).
- No effect of ASPD (ns).
- ASPD and CM interaction not significant (ns).



# Percent Clean & Retention

---

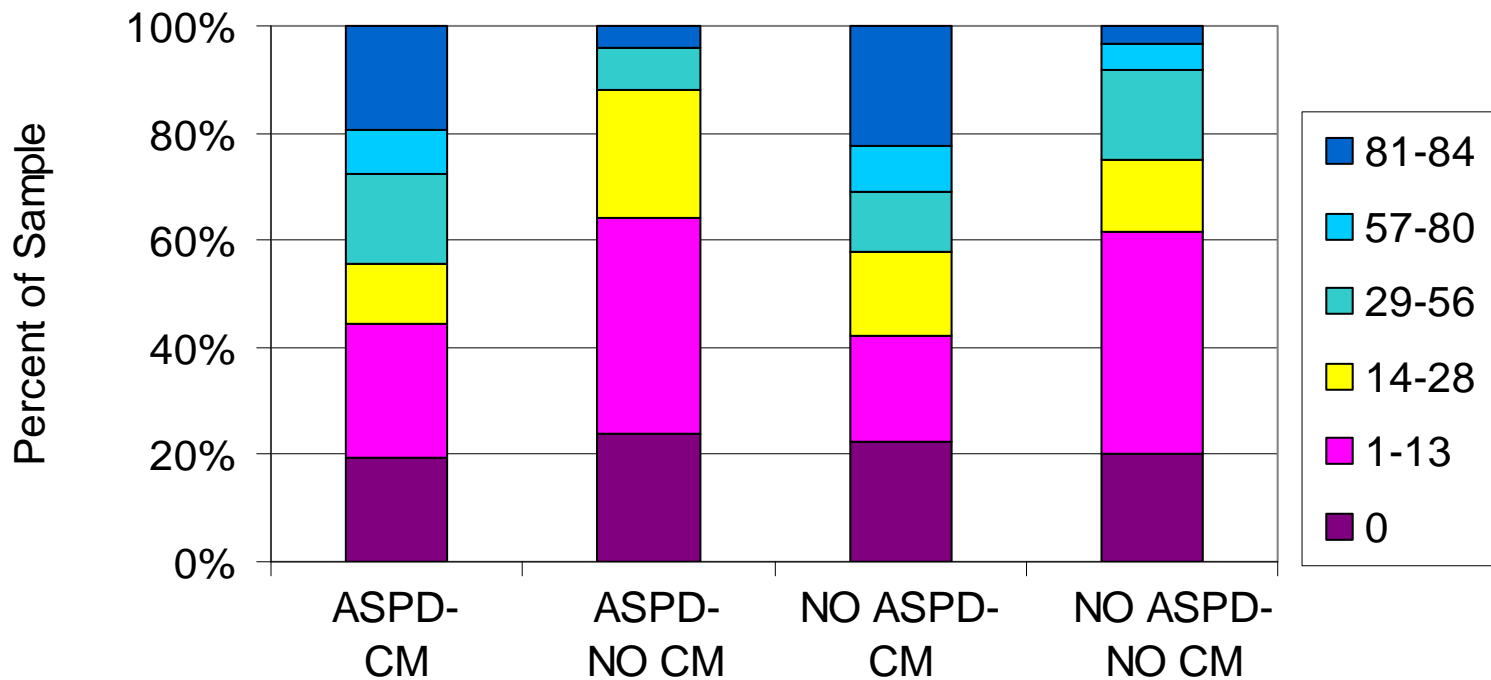
## Percent Clean

- No effect of CM or ASPD (ns).
- No significant interaction of ASPD and CM (ns).

## Treatment Retention

- CM did not affect retention (ns).
- Diagnosis of ASPD did not affect retention (ns).
- No significant interaction (ns).

# Longest Abstinence



Colors represent length of longest abstinence. Distribution did not vary due to ASPD status, but differed according to CM status. This suggests that participants with ASPD achieved abstinence comparable to those without ASPD.



# Conclusions

---

- CM significantly lengthened period of longest abstinence and improved TES.
- CM did not affect percent clean urine samples and treatment retention.
- CM seems to work equally well in individuals with ASPD, compared to individuals without ASPD.



# Implications

---

- CM, combined with counseling, can be an effective treatment for methamphetamine (MA) dependence.
- ASPD is very prevalent in this MA population.
- CM may be effective in individuals with co-morbid psychiatric conditions.



## Implications (2)

---

- Regardless of ASPD diagnosis, clients achieved comparable levels of abstinence and have similar rates of retention, suggesting individuals with ASPD perform as well as those without ASPD in treatment.
- The above findings are in contrast to previous research linking ASPD to poorer CM effectiveness (see introduction).



# References

---

- Barber, J.P., Frank, A., Weiss, R.D., Blaine, J., Siqueland, L., Moras, K., Calvo, N., Chittams, J., Mercer, D., Salloum, I.M. (1996). Prevalence and correlates of personality disorder diagnoses among cocaine dependent outpatients. Journal of personality disorders, 10 (4), 297-311.
- Brooner, R.K., Kidorf, M., King, V.L., Stoller, K. (1998, February). Preliminary evidence of good treatment response in antisocial drug abusers. Drug and Alcohol Dependence, 49 (3), 249-260.
- Flynn, P.M., Craddock, S.G., Luckey, J.W., Hubbard, R.L., Dunteman, G.H. (1996). Comorbidity of antisocial personality and mood disorders among psychoactive substance-dependent treatment clients. Journal of Personality Disorders, 10 (1), 56-67.
- Iguchi, M.Y., Stitzer, M.L., Bigelow, G.E., Liebson, I.A. (1988). Contingency management in methadone maintenance: Effects of reinforcing and aversive consequences on illicit polydrug use. Drug and Alcohol Dependence, 22, 1-7.
- Magura, S., Castriell, C., Goldsmith, D., Strug, D.L., & Lipton, D.S. (1988). Contingency contracting with polydrug-abusing methadone patients. Addictive Behaviors, 13, 113-118.
- Rawson, R.A., McCann, M.J., & Huber, A. (1995). Contingency management and relapse prevention for primary cocaine users and cocaine-using methadone patients. Paper presented at NIDA Workshop on the behavioral management of drug abuse. Bethesda, MD, 9/14/95.
- Schuster, C.R., Silverman, K., Harrell, S., Brooner, R., Cone, E., & Preston, K. (1995, December). ASP as a predictor of treatment outcome in a contingency management program for cocaine abusers. Poster presented at the annual meeting of the American College of Neuropsychopharmacology, San Juan, Puerto Rico.
- Silverman, K., Higgins, S.T., Brooner, R.K., Montoya, I.D., Cone, E.J., Schuster, C.R., & Preston, K.L. (1996). Sustained cocaine abstinence in methadone maintenance patients through voucher-based reinforcement therapy. Arch Gen Psychiatry, 53, 409-415.