Substance Abuse Findings from NIJ’s Multi-Site Adult Drug Court Evaluation (MADCE)

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Substance Use: Prior Drug Court Research


• **GAO Conclusion (2005)**: largely positive effects on official re-arrest & re-convictions

• **Extremely few prior studies that focus on substance use:**
  
  ➢ **Brooklyn and Baltimore**: Participants less likely to use drugs one year after entry (*Brooklyn*: Harrell et al. 2001; *Baltimore*: Gottfredson et al. 2003)
  
  ➢ **Maricopa Co., Arizona, and Washington, D.C.**: Participants less likely to use “serious” drugs (heroin or cocaine); no significant effect on marijuana use (*Maricopa*: Deschenes et al. 1995; *D.C.*: Harrell et al. 1998)
  
  ➢ **Chester County (PA)**: Participants had significant lower rates of positive drug tests when participants were actively in the program & comparison were supervised by probation (Brewster 2001)
Presentation Topics

- MADCE data on substance use
- Baseline profiles – descriptive analyses
- Impact
- Trajectories of drug use
- Concurrence: self-report & oral tests
MADCE Substance Use Data Sources

- **Individual Surveys** at Baseline, 6- & 18-months post enrollment:
  - Addiction Severity Index (20 items)
  - Primary drug
  - Substance use history & current use
  - Calendaring of substance use
  - Needle use
- **Buccel swab tests** at 18-month survey
MADCE Sample

- 1,781 offenders: 1,156 T & 625 C
- 6-month interviews: 1,533 offenders (86%)
- 18-month interviews: 1,474 (83%)
- 1,349 (76%) at both follow-up periods.
- Response rates for T & C were similar:
  - 87% vs. 84% at 6 months
  - 84% vs. 82% at 18 months
  - 76% for both samples at both 6 & 18 months
- Oral fluids tests: 1,147 non-incarcerated offenders (83% of those interviewed) & who gave specific consent to the test (94% of those eligible).

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MADCE Substances Tracked

1. **Alcohol**: any use & heavy use (5+/day M; 4+/day F)
2. **Prescription drugs**: improper use
3. **Methadone**: improper use
4. **Marijuana or hashish**
5. **Hallucinogens**: ecstasy, LSD, acid, mushrooms, Mescaline, Peyote, Green, PCP, Angel dust
6. **Cocaine**: powder, crack, free base, coca paste
7. **Heroin**: smoking, snorting, sniffing, injection use
8. **Amphetamines**: methamphetamine, ice, monster, crank

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Core Substance Use Questions

Have you ever used \{substance\} at least once in your life?

If yes:

- How old were you the first time you used \{substance\}?

- Have you ever used \{substance\} on a regular basis?

- How old were you when you began to use on a regular basis?
Core Substance Use Questions: Calendared Items

- Did you use \textit{substance} at any point during \textit{past 6 months} (at baseline) or since your last interview (at 6- and 18-month interviews)?

- In which of the past months did you use \textit{substance}?

- For each month of reported use: About how often, on average, did you use \textit{substance}?

- If incarcerated during that month: did use of \textit{substance} occur while \( R \) was in facility, on the street, or both?
Initial Drug Use

Age of First Use

Drugs include: alcohol, marijuana, cocaine, heroin, hallucinogens, amphetamines, prescription drugs, methadone.

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Length of Drug Use

Years of Drug Use

- All Eight Drugs***
- All Six Drugs (excluding alcohol/marijuana)**

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Prevalence of Drug Use, I

Ever Used, By Drug

<table>
<thead>
<tr>
<th>Drug</th>
<th>Treatment</th>
<th>Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Marijuana</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Any Other Drug</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

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Prevalence of Drug Use, II

Ever Used, By Drug II

- Any Cocaine
- Crack
- Powder
- Cocaine
- Both Crack and Powder
- Cocaine
- Heroin**
- Hallucinogens*
- Amphetamines*
- Prescription Drugs
- Methadone*

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Prevalence of Regular Drug Use, I

Ever Used Regular Basis, By Drug

Percent Used

0% 20% 40% 60% 80% 100%

Alcohol*  Marijuana  Any Other Drug

Treatment

Comparison

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Prevalence of Regular Drug Use, II

Ever Used Regular Basis, By Drug

- Cocaine
- Heroin**
- Hallucinogens
- Amphetamines***
- Prescription Drugs***
- Methadone

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Average Days of Drug Use/Month

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Primary Drug of Choice

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### Drug Use at Six Months

<table>
<thead>
<tr>
<th>Outcome Measure</th>
<th>Drug Court</th>
<th>Comparison Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Cases</td>
<td>1,009</td>
<td>524</td>
</tr>
</tbody>
</table>

#### Overall Drug Use - Previous Six Months

- Any drug use - eight drugs: 40%* vs. 59%
- Any serious drug use: 32% vs. 40%
- Days of use/month - eight drugs: 1.5** days vs. 3.7 days
- Days of serious use/month: 1.0** days vs. 2.2 days

#### Any Use by Drug - Previous Six Months

- Marijuana: 13%* vs. 26%
- Alcohol: 32%* vs. 52%
  - Heavy alcohol (≥ 4-5 drinks/day): 19% vs. 28%
- Cocaine: 17% vs. 19%
- Heroin: 4%+ vs. 6%
- Amphetamines: 4% vs. 7%
- Hallucinogens: 3% vs. 4%
- Prescription drugs (illegal use): 6%* vs. 10%
- Methadone (illegal use): 1% vs. 2%

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### Drug Use at 18 Months

<table>
<thead>
<tr>
<th>Outcome Measure</th>
<th>Drug Court</th>
<th>Comparison Group</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of Cases</strong></td>
<td>951</td>
<td>523</td>
</tr>
</tbody>
</table>

#### Overall Drug Use - Previous Year
- Any drug use - eight drugs: 56%**, 76%
- Any serious drug use: 41%**, 58%
- Days of use/month - eight drugs: 2.1***, 4.8
- Days of serious use/month: 1.1***, 2.3

#### Any Use by Drug - Previous Year
- Marijuana: 23%*, 36%
- Alcohol: 47%**, 67%
  - Heavy alcohol (≥ 4-5 drinks/day): 29%, 42%
- Cocaine: 19%*, 24%
- Heroin: 5%, 7%
- Amphetamines: 3%, 9%
- Hallucinogens: 3%+, 6%
- Prescription drugs (illegal use): 6%**, 15%
- Methadone (illegal use): 2%**, 4%

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Drug Test Results at 18 Months

![Bar chart showing drug test results at 18 months, comparing Drug Court (N = 764) with Comparison Group (N = 383).](chart)

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+ p < .10, * p < .05, ** p < .01, *** p < .001.
The Trajectory of Recovery: Percent Used Drugs in Previous Six Months

- Baseline: Drug Court (N = 877) 84%, Comparison Group (N = 472) 82%
- Six-Month: Drug Court 62%, Comparison Group 42%*
- 18-Month: Drug Court 46%**, Comparison Group 68%

*p < .10, **p < .05, ***p < .01, ****p < .001.

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## Trajectories of Drug Use (Any Drug)

<table>
<thead>
<tr>
<th>Trajectory</th>
<th>Description</th>
<th>Comparison N=472</th>
<th>Treatment N=877</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No relapse</td>
<td>0.22</td>
<td>0.34***</td>
</tr>
<tr>
<td>2</td>
<td>First relapse in Months 1-6</td>
<td>0.47</td>
<td>0.37***</td>
</tr>
<tr>
<td>3</td>
<td>First relapse in Months 7-12</td>
<td>0.17</td>
<td>0.15</td>
</tr>
<tr>
<td>4</td>
<td>First relapse in Months 13-18</td>
<td>0.10</td>
<td>0.13</td>
</tr>
<tr>
<td>5</td>
<td>Continued Use Since Baseline</td>
<td>0.04</td>
<td>0.01***</td>
</tr>
</tbody>
</table>
### Severity of Relapse (for Trajectories 2-4)

<table>
<thead>
<tr>
<th>Severity of Relapse</th>
<th>Comparison N = 350</th>
<th>Treatment N = 573</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Frequency of Use Post-Initial Relapse (less than 1/3 of remaining months)</td>
<td>0.24</td>
<td>0.39***</td>
</tr>
<tr>
<td>Medium Frequency of Use Post Initial Relapse (between 1/3 – 2/3 of remaining months)</td>
<td>0.25</td>
<td>0.24</td>
</tr>
<tr>
<td>High Frequency of Use Post Initial Relapse (greater than 2/3 of remaining months)</td>
<td>0.23</td>
<td>0.15***</td>
</tr>
<tr>
<td>Continued Use Post Initial Relapse</td>
<td>0.23</td>
<td>0.16***</td>
</tr>
</tbody>
</table>
### Comparing Trajectories Across Drug Types for Participants

<table>
<thead>
<tr>
<th>Trajectory</th>
<th>Description</th>
<th>Any 8 Drug</th>
<th>Alcohol</th>
<th>Marijuana</th>
<th>Hard Drugs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No relapse</td>
<td>0.34***</td>
<td>0.46***</td>
<td>0.70***</td>
<td>0.61***</td>
</tr>
<tr>
<td>2</td>
<td>First relapse in Months 1-6</td>
<td>0.37***</td>
<td>0.19*</td>
<td>0.14***</td>
<td>0.26</td>
</tr>
<tr>
<td>3</td>
<td>First relapse in Months 7-12</td>
<td>0.15</td>
<td>0.20**</td>
<td>0.07</td>
<td>0.08**</td>
</tr>
<tr>
<td>4</td>
<td>First relapse in Months 13-18</td>
<td>0.13</td>
<td>0.15</td>
<td>0.08</td>
<td>0.05</td>
</tr>
<tr>
<td>5</td>
<td>Continued Use Since Baseline</td>
<td>0.01***</td>
<td>0.004***</td>
<td>0.002**</td>
<td>0</td>
</tr>
</tbody>
</table>
Self-Report Vs. Oral Specimen

- We compared oral specimen results (taken at 18 months) with self-reported drug use (asked at same 18 month interview)

- 1147 Individuals Consented to Oral Specimen:
  - 764 Treatment
  - 383 Comparison

- Individuals who were incarcerated or in residential treatment at 18M interview were ineligible for oral specimen
# Concurrence of Self Report and Oral Tests: Any Drug Use

<table>
<thead>
<tr>
<th></th>
<th>Oral -</th>
<th>Oral +</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>18M No</td>
<td>639</td>
<td>266</td>
<td>905</td>
</tr>
<tr>
<td>18M Yes</td>
<td>89</td>
<td>153</td>
<td>242</td>
</tr>
<tr>
<td>Total</td>
<td>728</td>
<td>419</td>
<td>1147</td>
</tr>
</tbody>
</table>
## Correlation Between Self-Report and Oral Test

<table>
<thead>
<tr>
<th>Drug</th>
<th>Correlation Coefficient</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any Drug</td>
<td>0.29</td>
<td>0.0001</td>
</tr>
<tr>
<td>Marijuana</td>
<td>0.36</td>
<td>0.0001</td>
</tr>
<tr>
<td>Cocaine</td>
<td>0.24</td>
<td>0.0001</td>
</tr>
<tr>
<td>Heroin</td>
<td>0.31</td>
<td>0.0002</td>
</tr>
<tr>
<td>Hallucinogens</td>
<td>-0.0048</td>
<td>0.8709</td>
</tr>
<tr>
<td>Amphetamines</td>
<td>0.17</td>
<td>0.0001</td>
</tr>
</tbody>
</table>
Percentage of False Self Report Overall, by Drug

% Self-Report Negative and Tested Positive, by Drug

Overall, Marijuana, Cocaine, Heroin, Hallucinogens, Amphetamines

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Percentage of False Reporting of Drug Users, by Drug

% Self Reported Negative, Of Those Tested Positive

Overall Comparison Treatment

Overall
Marijuana
Cocaine
Heroin
Hallucinogens
Amphetamines
For Whom Drug Courts Work

Drug use=Average # Days of Drug Use/Month & Whether Tested Positive at 18 mo. interview in the year prior to 18M survey as dependent variable:

- Offenders whose primary drug was marijuana benefited less
- Offenders who had co-occurring (depression & narcissism) at baseline benefited less
- Those employed or in school benefited less
- Older offenders appeared to benefit more than did younger offenders from the intervention