Treatment of comorbid substance use and psychosis

Amanda Baker PhD

Aims

• Overview literature on treatment of substance use among people with psychosis

• Recommendations for treatment of alcohol versus cannabis use problems

• Describe recent smoking cessation trials among people with psychosis
**Background**

- Alcohol and cannabis use among people with psychosis common
- Cannabis use is associated with an approximate twofold increase in the relative risk of developing schizophrenia or other psychosis outcome
  

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**Background (2)**

- Among ultra high risk group for transition to psychosis:
  - high cannabis use at service entry in combination with family history of psychosis or BLIP symptoms: associated with significantly greater risk of transition to psychosis
  
  (Greig et al, in preparation)
Background (3)

• Cannabis use is associated with psychosis but if causal, is only a modest contributor to prevalence (Degenhardt et al 2003a,b)
  but
• Given the clinical presentations of co-existing psychosis or depression and cannabis use disorders, there is a need for the development of evidence-based treatments
  (Copeland 2006; Wade et al 2006)

Outline

• Psychosis samples (some mixed MDD)
  – RCTs reporting general ‘substance use’ outcomes
  – RCTs reporting specific cannabis use outcomes
• Synthesis of results
Psychosis samples: Service

- **Service level** RCTs reporting general ‘substance use’ outcomes: N=8
  - No significant differences between interventions on substance use outcomes
  - 7/8 report improvement in substance use over time
    (Lehman et al 1993; Burnam et al 1993; Hellerstein et al 1993; Drake et al 1998; Herman et al 2000; Morse et al 2006; Essock et al 2006; Petersen et al 2007)

Psychosis samples: MI/CBT

- **MI/CBT** RCTs reporting general ‘substance use’ outcomes: N=4
  - All significantly more effective than control conditions at post-treatment or short-term follow-up
  - Intervention duration: 3 hours (inpatient); 6 weeks (group); 6-months (group); 9 months (individual)
  - 2/4 follow-up: NS (but functioning sig better)
Early course of psychosis

• 2 RCTs:

Kavanagh et al 2004

• N=25 FEP or recent onset; inpatients
• 6-9 sessions (total of 3 hours) MI within 10 days vs standard care
• Both conditions reduced substance use at 12-months (3/12 in standard care vs 8/13 MI abstinent or improved on all substances)
Psychosis samples: MI/CBT (2)

- MI/CBT RCTs reporting specific cannabis use outcomes: N=2

**Edwards et al**

- N=47 FEP; cannabis use in the last 4 weeks
- Baseline (15% daily, 42.5% weekly; 42.5% monthly)
- CAP vs Psychoeducation
- CAP: MI/CBT weekly for 3 months
- NS diff post or 6-month follow-up
- % days used cannabis last month: 39.4% vs 32.4% at 6-months for CAP
Baker et al
British Journal of Psychiatry, 2006, 188, 439-448

- N=130 psychotic disorder +
  - Alcohol: NHMRC guidelines for hazardous use
    - Men: 4 std. drinks/day
    - Women: 2 std. drinks/day OR
  - Cannabis: Weekly use OR
  - Amphetamine: Weekly use

- 10 sessions MI & CBT vs TAU
  
www.med.unsw.edu.au/ndarc

Follow-up Rates

<table>
<thead>
<tr>
<th>Assessment point</th>
<th>Follow-up rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-Treatment</td>
<td>93%</td>
</tr>
<tr>
<td>6 Months</td>
<td>93%</td>
</tr>
<tr>
<td>12 Months</td>
<td>84%</td>
</tr>
</tbody>
</table>

- Post-Treatment
- 6 Months
- 12 Months
Sample characteristics

- Mean age (yrs) 28.82
- Male (%) 77.7
- Australian Born (%) 90.8
- SCID diagnosis abuse/dependence (12/12):
  - Alcohol (%) 68.5
  - Cannabis (%) 73.8
  - Amphetamine (%) 41.5
Alcohol

Time - Pre vs 3M, 6M & 12M, p<.01; Group x time - ns

Cannabis

Time: ns; Group x time - Pre vs 3M, p=.015
Amphetamines

Time - ns; Group x time - Pre vs 6M, p<.05

BPRS

No significant differences
Global Assessment of Functioning

Findings

• Retention over 10 sessions with a challenging sample

• Strong follow-up rates

• Similar to results to Barrowclough et al (2001)
  – Significant superior global functioning for the treatment group
  – Not due to bias in assessor ratings
Findings (2)

• Cannabis
  – heavy users benefited from the treatment whilst in therapy
  – returned to previous levels after treatment
  – similar results for cannabis in previous study of MI (initial response to treatment but not in the longer term)

Baker et al 2002
Addiction, 97, 1329-1337; Acta Psychiatrica Scandinavica, 106, 233-240.

Evaluate effectiveness of a brief motivational intervention among inpatients admitted to a psychiatric hospital

• engagement and retention in AOD treatment
• reducing AOD use
Method

N=160 inpatients

Random assignment to MI or control

Inclusion criteria:
- inpatients in psychiatric hospital +
  - Alcohol: NHMRC guidelines for hazardous use
    - Men: 4 std. drinks/day
    - Women: 2 std. drinks/day OR
  - Cannabis: Weekly use OR
  - Amphetamine: Weekly use

Sample Characteristics

Mean age: 30.9 years (16-70)
Gender: 75% male (n=120)
Prior psych adm: 4.33 (0-55)
Previous tx d&a: 55.6% (n=89)

Primary DSMIV non-substance diagnoses:
- schizophrenia 37.6%
- mood disorder 29.3%
- other 13.4%
- none 19.7%
Axis II diagnosis: 16.3%
Sample Characteristics

Current abuse/dependence %  |  OTI mean
---|---
Alcohol  |  54.4  |  8.52
Cannabis |  50.6  |  12.06
Amphetamine  |  21.9  |  0.98
Heroin  |  12.6  |  0.84
Tranquilisers  |  11.2  |  1.81

Mean OTI Scores All Phases (Threshold Subjects)

<table>
<thead>
<tr>
<th></th>
<th>Pre</th>
<th>3-months</th>
<th>6-months</th>
<th>12-months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polydrug* (n=89)</td>
<td>3.27</td>
<td>2.54</td>
<td>2.63</td>
<td>2.66</td>
</tr>
<tr>
<td>Alcohol** (n=51)</td>
<td>8.84</td>
<td>2.08</td>
<td>4.23</td>
<td>2.46</td>
</tr>
<tr>
<td>Cannabis (n=62)</td>
<td>7.22</td>
<td>3.02</td>
<td>4.29</td>
<td>5.07</td>
</tr>
</tbody>
</table>

* trend for effect of time (pre – 3-months)
**significant effect for time, no pair of occasions significantly different from one another
Long-term follow-up
Greig et al, Drug and Alcohol Review, 2006, 25, 1-10

• N=47, 4-6 years later (31.8% of the sample)

<table>
<thead>
<tr>
<th>Drug</th>
<th>Pre</th>
<th>6m</th>
<th>12m</th>
<th>4-6 yrs</th>
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<tbody>
<tr>
<td>Alc (n=27)</td>
<td>8.65</td>
<td>5.58</td>
<td>3.58</td>
<td>3.91**</td>
</tr>
<tr>
<td>Can (n=29)</td>
<td>7.72</td>
<td>5.84</td>
<td>5.88</td>
<td>5.14</td>
</tr>
</tbody>
</table>

Implications

• ?Reasons for continued cannabis use vs alcohol
  – Alcohol treatment services & public education well established
  – Casual public attitude towards cannabis use, possible lack of immediate adverse effects, high availability & low cost

Implications: education & intervention early before mental health problems develop & during first episode
Martino et al 2006
Addiction, 101, 1479-1492

- N=44 OP with psychosis, RCT 2 session MI vs standard interview (SI); 4-, 8- & 12- wks
- Mean daily joints smoked = 1.44
- Cocaine users: > outcomes with MI
- Cannabis users: > outcomes with SI
- (Alcohol improved in both conditions)

Implications

- Small sample, SI group had more alcohol & legal problems
- ?increased symptomatology when they stop using cocaine vs cannabis
- ?MI may be more effective with less motivated people
- ?2-hour baseline assessment: effect
  - Also see Hulse & Tait (2002, 2003)
Summary: psychosis & cannabis use

- MI may not work equally for all types of substance use among people with psychosis
- SI or psychoeducation may be effective for cannabis use among lighter users
- Longer or different interventions among heavier cannabis users may be needed

Synthesis

- 3 studies combined for baseline and 6-month follow-up
  (Baker et al, 2002; 2006; Kay-Lambkin et al, in prep)

- Control (advice) vs brief intervention (1 session) vs 10 sessions MI/CBT
Change by Treatment

Categorical Change in Alcohol Users Across Treatment

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<th>N</th>
<th>5</th>
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<th>7</th>
<th>4</th>
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<td>Baseline</td>
<td>8</td>
<td>5</td>
<td>2</td>
<td>7</td>
<td>4</td>
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<td>CBT</td>
<td>9</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>5</td>
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Categorical Change in Cannabis Users Across Treatment

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<th>B</th>
<th>C</th>
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<th>2</th>
<th>7</th>
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<td>2</td>
<td>7</td>
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<td>%</td>
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<td>4</td>
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CONCLUSION - ALCOHOL

- Alcohol problems: respond to assessment and BI
CONCLUSION - CANNABIS

• Compared to alcohol, cannabis use does not generally respond as well to BI
• Modest results indicate the need for
  – attitudinal shift
  – more effective interventions

CONCLUSION

• A range of treatment strategies are needed
• Need a framework for decision making
• Flexible interventions needed:
  – Screening & assessment
  – Stepped interventions for alcohol, cannabis & other drug use
  – Lifestyle interventions (vocational, social etc)
FURTHER RESEARCH

- SHADE 2
- DAISI
- DEPTh

FURTHER RESEARCH

- Report on alcohol, cannabis and other drug use separately, as well as combined
- Larger RCTs
- Longer, integrated interventions for cannabis use
Randomized controlled trial of a smoking cessation intervention among people with a psychotic disorder: 3 year follow-up

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2. Schizophrenia Research Institute (SRI), Darlinghurst, Sydney, NSW 2010, Australia
3. School of Public Health and Community Medicine, Faculty of Medicine, UNSW, Australia

Background

- Williams & Foulds (2007) summarised reasons for concern regarding smoking in schizophrenia:
  - Prevalence rates of at least 60%
  - Heavy smoking, increased nicotine intake per cigarette, severe dependence, more difficulty quitting
  - High nicotine levels: ? needed for activation of alpha-7 nicotinic receptors, reduced in no. & fn in schizophrenia
  - Health, financial and social consequences
  - Success in quitting smoking about half that of other groups
  - Special interventions needed
Previous research

Promising results from previous trials but methodological problems, including:
- Small sample sizes
- Heterogeneous samples
- Lack of defined interventions & control groups
- Follow-up often only to 6 months
  
  *(McChargue, Gulliver & Hitsman 2002)*

- Need to assess smoking outcomes other than cessation
  
  *(Hughes & Carpenter 2005)*

RCT of an intervention for smoking among people with a psychotic disorder

Funding sources: NHMRC, CHATA, Rotary, Commonwealth Dept of Health and Ageing

*Baker, Richmond, Kay-Lambkin, Lewin & Carr, American Journal of Psychiatry (2006); 163: 1934-1942*
Aims

To evaluate the effectiveness of a smoking cessation intervention comprising MI + CBT + NRT for people with a psychotic illness

- MI = motivational interviewing
- CBT = cognitive behavioural therapy
- NRT = nicotine replacement therapy (transdermal patch)

Research Design

- RCT: TAU vs TAU + 8 individual sessions
- N=298 people with a non-acute psychotic illness
- Participants were recruited from Sydney and the Hunter Region of NSW, Australia
- Follow-up assessments: RA blind to allocation
Methodology

Smoking + Psychotic Illness (n=298)

INITIAL ASSESSMENT

Random Allocation

Treatment Group (6 sessions CBT) + 2 Booster Sessions

Control Group (Usual treatment)

Post-treatment follow-up (15 weeks)

6 months follow-up

12 months follow-up

3 year follow up

Control condition

TAU + SANE booklets* for smoking cessation

* Sane booklets were specifically written for those with a mental disorder and their support person/s
Intervention

- SANE booklets +

- 8 sessions:
  (http://www.med.unsw.edu.au/ndarc)
  - 6 weekly 1 hour sessions
  - sessions 7-8: fortnightly 1 hour

Intervention sessions

- MI
- Triggers, plan, coping with cravings
- Managing withdrawal, setting quit date, intro NRT & supply patch (21mgs), engage support person
- Cognitive strategies, NRT (21mg)
Intervention sessions

- Refusal skills, NRT (21mg)
- RP, lifestyle, NRT (14 days x 21mg)
- RP, tapering NRT (7 days x 21, 14mg)
- RP, tapering NRT (7 days x 14mg, 14 days x 7mg)

Assessment measures

- Diagnostic Interview for Psychosis (DIP)
- Smoking (FTND, reasons, stage of change, motivation to quit)
- Symptomatology (BPRS; BDI-II; STAI)
- Substance Use (OTI)
- Social Functioning (SF-12)
Outcome measures

- **Point prevalence**
  - % abstinent for the past 7 days preceding the follow up assessment

- **Continuous abstinence**
  - % abstinent since quit day to the last follow up point
  - Abstinence from smoking confirmed using a Micro 11 Smokerlyser which assessed breath levels of CO (level <10ppm signified abstinence)

- **Smoking reduction of 50% or greater relative to baseline**

Patterns of participation

- **473 referrals** from community agencies, inpatient psychiatric hospital units, early psychosis service, the Neuroscience Institute for Schizophrenia and Allied Disorders, and the schizophrenia register

- **Recruitment profiles**
  - 113 ineligible
  - 360 eligible
  - Of the 360 eligible, 62 refusals
  - 298 assessments completed with people with an ICD-10 psychotic illness
  - Random allocation to Treatment (n=147) and Control (n=151) groups.
Characteristics of the sample

- Mean age 37 years
- 86% born in Australia
- 56% male
- 72% single
- 37% lived alone
- 28% had children
- 89% receiving disability benefits
- 29% completed year 12 of school

Smoking behaviours

- CPD = 30
- Average no. previous quit attempts = 2
- Majority said going cold turkey had been most successful method of quitting in the past
- Main reason given for smoking was ‘craving’ or ‘addiction’
- 13% pre-contemplation, 50% contemplation 37% preparation
Results: treatment attendance

Attendance at treatment sessions
N = 147 in treatment group

- 48% (n = 70) attended 8 treatment sessions
- 28% (n = 42) attended 5–7 treatment sessions
- 24% (n = 35) attended < 5 treatment sessions

Results: Follow-up attendance

<table>
<thead>
<tr>
<th>Group</th>
<th>3/12</th>
<th>6/12</th>
<th>12/12</th>
<th>3 year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% (n)</td>
<td>% (n)</td>
<td>% (n)</td>
<td>% (n)</td>
</tr>
<tr>
<td>Treatment</td>
<td>89% (131)</td>
<td>87% (128)</td>
<td>86% (126)</td>
<td>56% (83)</td>
</tr>
<tr>
<td>(147)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>80% (121)</td>
<td>77% (116)</td>
<td>79.5% (120)</td>
<td>54% (81)</td>
</tr>
<tr>
<td>(151)</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Total</td>
<td>85% (252)</td>
<td>82% (244)</td>
<td>83% (246)</td>
<td>55% (164)</td>
</tr>
<tr>
<td>(298)</td>
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</tbody>
</table>

No difference in baseline demographics or smoking behaviours among those who attended the follow-up visits compared to those who did not
Point prevalence abstinence over time

- **Treatment**
- **Control**

(ns)

Point prevalence abstinence: treatment attendance compared to control condition

- * significant p<0.01
- ** significant p<0.001
Continuous abstinence over time

- Percentage of continuous abstinence over time for treatment and control conditions.

Continuous abstinence: treatment attendance compared to control condition

- Percentage of treatment attendance compared to the control condition over time.

Significance level: **significant p<0.001
## Smoking reduction status including reduction in cigarette consumption by 50% or more and abstinence

<table>
<thead>
<tr>
<th></th>
<th>12 months</th>
<th>3 years</th>
</tr>
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<tbody>
<tr>
<td>Control (n = 151)</td>
<td>17.9</td>
<td>19.0</td>
</tr>
<tr>
<td>Treatment (n = 147)</td>
<td>31.3 *</td>
<td>19.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Self-selected to attend treatment visits</th>
<th>12 months</th>
<th>3 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 5 sessions</td>
<td>11.4</td>
<td>5.7</td>
</tr>
<tr>
<td>5 – 7 sessions</td>
<td>21.4</td>
<td>11.9</td>
</tr>
<tr>
<td>8 sessions</td>
<td>47.1 **</td>
<td>30.0</td>
</tr>
</tbody>
</table>

* p<0.01; ** p<0.001

## Change in symptomatology

<table>
<thead>
<tr>
<th>Group</th>
<th>STAI – State</th>
<th>STAI – Trait</th>
<th>Beck Depr.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mean</td>
<td>mean</td>
<td>mean</td>
</tr>
<tr>
<td><strong>Treatment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>39.8</td>
<td>46.5</td>
<td>14.4</td>
</tr>
<tr>
<td>3 months</td>
<td>39.0</td>
<td>NA</td>
<td>13.0</td>
</tr>
<tr>
<td>6 months</td>
<td>37.2</td>
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<td>10.8</td>
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<td>12 months</td>
<td>37.1</td>
<td>44.0</td>
<td>12.2</td>
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<tr>
<td>3 years</td>
<td>35.8</td>
<td>42.1</td>
<td>11.2</td>
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<tr>
<td><strong>Control</strong></td>
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<tr>
<td>Baseline</td>
<td>42.6</td>
<td>48.6</td>
<td>17.9</td>
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<td>3 months</td>
<td>39.4</td>
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<td>39.9</td>
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<tr>
<td>12 months</td>
<td>34.8</td>
<td>44.9</td>
<td>12.6</td>
</tr>
<tr>
<td>3 years</td>
<td>37.8</td>
<td>43.4</td>
<td>12.4</td>
</tr>
</tbody>
</table>
Conclusions from the Study

- Those who chose to attend all 8 sessions were significantly more likely to be abstinent (point prevalence) at 3, 6 and 12 months, but not at 36 months.

Conclusions

- An important finding was significant improvement on several mental health measures (STAI, depression, overall mental health) and no worsening of psychotic symptomatology.
- Maintenance of treatment gains following successful cessation remains a major challenge.
- Healthy Lifestyle Intervention currently being piloted.
CONCLUSION

• Screen for tobacco, alcohol, cannabis & other drug use
• Assess
• Provide feedback, offer advice & intervention
• Stepped approach
• Monitor over time (a few change attempts may be made)

Acknowledgements

• Co-investigators
  – Alyna Turner
  – Frances Kay-Lambkin
  – Terry Lewin
  – Vaughan Carr
  – Sandra Bucci

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