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Psychosocial treatments for dual diagnosis

Introduction

Dual diagnosis is a term that refers to having both a mental illness and a substance abuse problem. Studies of dual diagnosis investigate the effectiveness and availability of treatments for improving outcomes relating to either diagnosis, such as symptoms, functioning, quality of life, substance use, or cognitive problems.

Method

We have included only systematic reviews (systematic literature search, detailed methodology with inclusion/exclusion criteria) published in full text, in English, from the year 2000 that report results separately for people with a diagnosis of schizophrenia, schizoaffective disorder, schizophreniform disorder or first episode schizophrenia. Reviews were identified by searching the databases MEDLINE, EMBASE, CINAHL, Current Contents, PsycINFO and the Cochrane library. Hand searching reference lists of identified reviews was also conducted. When multiple copies of reviews were found, only the most recent version was included. Reviews with pooled data are prioritised for inclusion.

Review reporting assessment was guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist which describes a preferred way to present a meta-analysis[1]. Reviews reporting less than 50% of items have been excluded from the library. The PRISMA flow diagram is a suggested way of providing information about studies included and excluded with reasons for exclusion. Where no flow diagram has been presented by individual reviews, but identified studies have been described in the text, reviews have been checked for this item. Note that early reviews may have been guided by less stringent reporting checklists than the PRISMA, and that some reviews may have been limited by journal guidelines.

Evidence was graded using the Grading of Recommendations Assessment, Development and Evaluation (GRADE) Working Group approach where high quality evidence such as that gained from randomised controlled trials (RCTs) may be downgraded to moderate or low if review and study quality is limited, if there is inconsistency in results, indirect comparisons, imprecise or sparse data and high probability of reporting bias. It may also be downgraded if risks associated with the intervention or other matter under review are high. Conversely, low quality evidence such as that gained from observational studies may be upgraded if effect sizes are large or if there is a dose dependent response. We have also taken into account sample size and whether results are consistent, precise and direct with low associated risks (see end of table for an explanation of these terms)[2]. The resulting table represents an objective summary of the available evidence, although the conclusions are solely the opinion of staff of NeuRA (Neuroscience Research Australia).

Results

We found eight systematic reviews that met our inclusion criteria[3-10].

- Moderate quality evidence suggests a medium effect of motivational interviewing with or without CBT for reducing the amount of cannabis used compared to treatment as usual, family support or psychoeducation, but no benefit for reducing frequency of use. There may be a small benefit for positive, but not negative symptoms.
- Moderate to low quality evidence suggests CBT combined with motivational interviewing may also improve general life and client satisfaction, but has little effect on overall quality of life, functioning, arrests, or study retention.

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- Moderate quality evidence suggests integrated care for dual diagnosis had no significant benefit over treatment as usual for study retention, hospitalisation or service use, substance use, functioning, or quality of life. There were similar findings for intensive case management.
- Moderate to low quality evidence finds less hospitalisations with contingency management, but more loss to treatment compared to treatment as usual.
- Moderate to low quality evidence is unclear as to any benefit of skills training, group therapy, family therapy, or residential treatments for substance use or mental state.

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Psychosocial treatments for dual diagnosis

Baker AL, Hides L, Lubman DI

Treatment of cannabis use among people with psychotic or depressive disorders: a systematic review

Journal of Clinical Psychiatry 2010; 71(3): 247-54

View review abstract online

Comparison	**CBT plus motivational interviewing (aimed at enhancing an individual's intrinsic motivation to change their substance use) vs. treatment as usual.**
Summary of evidence	**Moderate to low quality evidence (small to medium-sized samples, unable to assess consistency or precision, direct) is unclear as to any benefit of motivational interviewing techniques (with or without CBT) for reducing cannabis use.**
Cannabis use	
2 studies (N = 177) report significant reductions in cannabis use immediately following treatment, but there were no differences between groups at 6 months following treatment. 2 studies (N = 204) report that motivational interviewing alone achieved similar results, with short term improvements (up to 3 months) that were not maintained at follow up.	
Consistency in results‡	No measure of consistency is reported.
Precision in results§	No measure of precision is reported.
Directness of results‖	Direct

Baker AL, Hiles SA, Thornton LK, Hides L, Lubman DI

A systematic review of psychological interventions for excessive alcohol consumption among people with psychotic disorders

Acta Psychiatrica Scandinavica 2012; 126: 243-255

View review abstract online

Comparison	**CBT + motivational interviewing (aimed at enhancing an individual's intrinsic motivation to change their substance use)**

	vs. control conditions (treatment as usual and/or education).
Summary of evidence	**Moderate to low quality evidence (large samples, unable to assess consistency or precision, indirect) is unclear as to any benefit of motivational interviewing techniques (with or without CBT) for reducing alcohol use.**
Alcohol use	
3/5 RCTs (total N = 571) reported a significant, small reduction (d ranged between -0.71 to -0.90), in number of units of alcohol consumed in the treatment groups (motivational interviewing and/or CBT). 2 of the 5 trials also reported a significant, small reduction in the control groups (assessment plus self-help booklet or referral). 1 RCT (N = 327) reported lower substance use per occasion of use. 1 RCT (N = 44) reported both treatment and control conditions significantly reduced days or use per month.	
Consistency in results	No measure of consistency is reported.
Precision in results	No measure of precision is reported.
Directness of results	Indirect (mixed control conditions)

Cleary M, Hunt GE, Matheson SL, Walter G

Psychosocial treatments for people with co-occurring severe mental illness and substance misuse: systematic review

Journal of Advanced Nursing 2009; 65(2): 238-258

View review abstract online

Comparison	**Integrated care (substance abuse treatment combined with assertive community treatment) vs. treatment as usual.**
Summary of evidence	**Moderate quality evidence (large samples, unable to assess consistency or precision, direct) suggests unclear benefit of integrated care for reducing substance use or hospitalisation.**
Substance use	
5 studies (N = 911) assessed integrated care, with treatment duration varying from 6 months to 3 years. 2 studies reported reductions in substance use and increased treatment retention, two studies reported reduced hospitalisation rates.	

Psychosocial treatments for dual diagnosis

Consistency in results	No measure of consistency is reported.
Precision in results	No measure of precision is reported.
Directness of results	Direct
Comparison 2	**Intensive case management (ICM) or non-integrated models of care (including substance abuse treatments, family psychoeducation, crisis intervention and skills training) vs. treatment as usual.**
Summary of evidence	**Moderate quality evidence (large samples, unable to assess consistency or precision, direct) suggests no benefit of intensive case management for reducing substance use or improving mental state.**
Substance use	
5 randomised trials and 3 quasi-randomised trials (total N = 1,114) assessed intensive case management, with treatment duration varying from 4 weeks to 18 months All 5 randomised studies and 2 quasi-randomised studies reported no difference in substance use. 1 quasi-randomised study reported reductions in alcohol use in ICM group ($p < 0.05$).	
Mental state	
All 5 randomised studies and one quasi-randomised study reported no difference in mental state (various measures). 2 quasi-randomised studies reported mental state improvements in ICM group, including reduced hospitalisation and reduced symptom severity ($p < 0.01$).	
Treatment retention	
All 5 randomised studies and 2 quasi-randomised studies reported no difference in treatment retention. 1 quasi-randomised study reported increased retention by 18 months in ICM group ($p < 0.01$).	
Consistency in results	No measure of consistency is reported.
Precision in results	No measure of precision is reported.
Directness of results	Direct
Comparison 3	**CBT vs. either standard care or psychoeducation.**
Summary of evidence	**Moderate to low quality evidence (small to medium-sized samples, unable to assess consistency or precision, direct)**

	suggests little benefit of CBT for reducing substance use, however combined with motivational interviewing there may be some benefit for depressive symptoms, relapse and global functioning for dual diagnosis patients.
Substance use	
1 RCT, N = 47, had a 3 month treatment period of weekly CBT (cannabis and psychosis therapy) compared to psychoeducation, with a 6 month follow up. Authors reported no difference in substance use, as measured by the cannabis and substance use assessment schedule. 1 RCT, N = 105, used 3 months (6 sessions) of CBT plus psychoeducation compared to standard care. Authors reported no difference in substance use as measured by the health of the nation outcome scale. 1 RCT, N = 130 patients with non-acute psychotic disorder had 10 sessions of CBT and motivational interviewing vs. self-help booklet plus standard care with evaluations at 15 weeks, 6 and 12 months. Authors reported no difference in substance use at 12 months. 1 RCT, N = 36, had 9 months of integrated intervention treatment of CBT, MI and family therapy compared to treatment as usual, with evaluations after 9, 12 and 18 months of treatment. Authors reported increased abstinence from all substances except that most frequently used, and no difference in dependence or severity measures.	
Mental state	
1 RCT, N = 47, had a 3 month treatment period of CBT compared to psychoeducation, with a 6 month follow up. Authors reported no difference in mental state measured by BPRS, BDI and SANS. 1 RCT, N = 105, used 3 months of CBT plus psychoeducation compared to standard care. Authors reported no difference in mental state measured by BSA, CPRS, MADRS and SCR. 1 RCT, N = 130 patients with non-acute psychotic disorder had 10 sessions of CBT and motivational interviewing vs. self-help booklet plus standard care with evaluations at 15 weeks, 6 and 12 months. Authors reported decreased depressive symptoms and improved global functioning at 12 months. 1 RCT, N = 36, had 9 months of integrated intervention treatment of CBT, MI and family therapy compared to treatment as usual, with evaluations after 9, 12 and 18 months of treatment. Authors reported decreased relapse rates at 12 months.	
Treatment retention	
1 RCT, N = 47, had a 3 month treatment period of CBT compared to psychoeducation, with a 6 month follow up. Authors reported no difference in treatment retention. 1 RCT, N = 105, used 3 months of CBT plus psychoeducation compared to standard care. Authors reported no difference in treatment retention.	

Consistency in results	No measure of consistency is reported.
Precision in results	No measure of precision is reported.
Directness of results	Direct

Donald M, Dower J, Kavanagh D

Integrated versus non-integrated management and care for clients with co-occurring mental health and substance use disorders: a qualitative systematic review of randomised controlled trials

Social Science & Medicine 2005; 60(6): 1371-1383

View review abstract online

Comparison	**Integrated care programs (incorporating psychotherapy, cognitive behavioural therapy, psychoeducation, case management and pharmacological components) vs. standard care.**
Summary of evidence	**Moderate to low quality evidence (small samples, unable to assess consistency or precision, direct) suggests unclear benefit of integrated care for reducing substance use or psychiatric symptoms.**

Substance use

3 RCTs, N = 103, compared integrated and routine care for up to 12 month follow up.

All 3 studies reported no significant difference between groups for levels of psychiatric symptomatology or for substance use at follow up.

1 study reported significant improvement in both psychiatric symptoms and substance use following either integrated care or routine care at 4 months, but no difference between groups.

1 study (N = 32) reported significant improvement in global function at 9 and 12 months for integrated care compared to routine care.

Consistency in results	No measure of consistency is reported.
Precision in results	No measure of precision is reported.
Directness of results	Direct

Psychosocial treatments for dual diagnosis

Drake RE, O'Neal EL, Wallach MA

A systematic review of psychosocial research on psychosocial interventions for people with co-occurring severe mental and substance use disorders

Journal of Substance Abuse Treatment 2008; 34(1): 123-138

View review abstract online

Comparison	**3 months of individual CBT for substance abuse vs. standard care.**
Summary of evidence	**Moderate to low quality evidence (small samples, unable to assess consistency or precision, direct) suggests little benefit of CBT for reducing substance use, however when combined with motivational interviewing, it may have any positive effect on mental health for dual diagnosis patients.**

Substance use

On RCT, N = 130 patients with non-acute psychotic disorder had 10 sessions of CBT and motivational interviewing vs. self-help booklet plus standard care with evaluations at 15 weeks, 6 and 12 months. Authors reported no difference in substance use at 12 months.

One RCT, N = 36, had 9 months of integrated intervention treatment of CBT, MI and family therapy compared to treatment as usual, with evaluations after 9, 12 and 18 months of treatment. Authors reported increased abstinence from all substances except that most frequently used, and no difference in dependence or severity measures at 12 months.

One RCT N = 47, had 3 months of individual CBT in patients in their first episode of psychosis with cannabis use (no comparison group described). They reported no group differences in substance use.

Mental state

1 RCT N = 47, had 3 months of individual CBT in patients in their first episode of psychosis with cannabis use (no comparison group described). They reported no group differences in outpatient attendance.

1 RCT, N = 36, had 9 months of integrated intervention treatment of CBT, MI and family therapy compared to treatment as usual in schizophrenia patient, with evaluations after 9, 12 and 18 months of treatment. They reported decreased relapse rates, decreased negative symptoms at 9 months and 18 months, and decreased positive symptoms at 12 months.

1 RCT, N = 130 patients with non-acute psychotic disorder had 10 sessions of CBT and

motivational interviewing vs. self-help booklet plus standard care with evaluations at 15 weeks, 6 and 12 months. Authors reported decreased depressive symptoms and improved global functioning at 12 months.	
Consistency in results	No measure of consistency is reported.
Precision in results	No measure of precision is reported.
Directness of results	Direct
Comparison 2	**Integrated case management and assertive community treatment for substance abuse vs. standard care.**
Summary of evidence	**Moderate to low quality evidence (small to medium samples, unable to assess consistency or precision, direct) suggests little benefit of integrated case management for reducing substance use or improving mental state or global function.**
Mental state and substance use	
1 trial, N = 223, compared assertive community treatment (ACT, integrated paradigm) with standard case management, and reported no difference in mental health outcomes, but some improvement in drug and alcohol use as well as improved global function by 3 years in the ACT group. 1 trial, N = 198, compared ACT with treatment as usual, and reported no difference in mental health outcomes, drug and alcohol use, life satisfaction or global function by 3 years. 1 trial, N = 54, compared integrated treatment (incorporating standard case management with substance abuse therapy) with treatment as usual, and reported no difference in mental health outcomes, drug and alcohol use, life satisfaction or hospitalisation rate by 12 months.	
Consistency in results	No measure of consistency is reported.
Precision in results	No measure of precision is reported.
Directness of results	Direct
Comparison 3	**Integrated group therapy, education and medication management for psychoactive substance abuse vs. treatment as usual for 8 months.**
Summary of evidence	**Moderate to low quality evidence (small sample, unable to assess consistency or precision, direct) is unclear as to any benefit of integrated group therapy for reducing substance use or improving mental state or global function.**
Mental state and substance use	

1 trial, N = 47, integrated group therapy with treatment as usual and reported no difference in mental health outcomes, psychoactive substance use, or hospitalisation rate but some improvement in attrition.	
Consistency in results	No measure of consistency is reported.
Precision in results	No measure of precision is reported.
Directness of results	Direct
Comparison 4	**Integrated family therapy, CBT and motivational interviewing (MI) for substance abuse vs. treatment as usual for 9 months.**
Summary of evidence	**Moderate to low quality evidence (small sample, unable to assess consistency or precision, direct) is unclear as to any benefit of integrated family therapy for reducing substance use or improving mental state or global function.**
Mental state and substance use	
1 RCT, N = 36, had 9 months of integrated intervention treatment of family therapy, CBT, and MI compared to treatment as usual, with evaluations after 9, 12 and 18 months of treatment. Authors reported increased abstinence from all substances except that most frequently used, and no difference in dependence or severity measures at 12 months. They reported decreased relapse rates, decreased negative symptoms at 9 months and 18 months, and decreased positive symptoms at 12 months.	
Consistency in results	No measure of consistency is reported.
Precision in results	No measure of precision is reported.
Directness of results	Direct
Comparison 5	**Integrated residential (hospital) treatment vs. treatment as usual for 3 months.**
Summary of evidence	**Moderate to low quality evidence (small sample, unable to assess consistency or precision, direct) is unclear as to any benefit of integrated residential treatment for reducing substance use or improving mental state or global function.**
Global outcomes	
1 trial, N = 132, compared residential treatment with standard care for homeless people with schizophrenia and substance use, reported no difference in mental health outcomes, psychoactive substance use, or housing outcomes.	

Consistency in results	No measure of consistency is reported.
Precision in results	No measure of precision is reported.
Directness of results	Direct

Hjorthoj C, Baker A, Fohlmann A, Nordentoft M

Intervention Efficacy in Trials Targeting Cannabis Use Disorders in Patients with Comorbid Psychosis Systematic Review and Meta-analysis

Current Pharmaceutical Design 2014; 20: 2205-2211

View review abstract online

Comparison	**Motivational interviewing (MI), alone or in combination with cognitive behaviour therapy (CBT) vs. treatment as usual, family support or psychoeducation.**
Summary of evidence	**Moderate quality evidence (unclear sample sizes, consistent, precise, indirect) suggests a medium effect of motivational interviewing with or without CBT for reducing the amount of cannabis used, but not frequency of use. There may be a small benefit for positive symptoms, but not negative symptoms.**
Cannabis use	
A medium effect of less amount of cannabis use with MI with or without CBT; 3 RCTs, N = unclear, d = -0.55, 95%CI -0.89 to -0.21, $p < 0.05$, $I^2 = 0\%$, $p = 0.365$ *No significant differences between groups for frequency of use;* 5 RCTs, N = unclear, d = -0.15, 95%CI -0.45 to 0.15, $p > 0.05$, $I^2 = 41.3\%$, $p = 0.146$	
Mental state	
A small effect of improved positive symptoms with MI with or without CBT; 4 RCTs, N = unclear, d = -0.35, 95%CI -0.56 to -0.14, $p < 0.05$, $I^2 = 10.4\%$, $p = 0.341$ *No significant differences between groups for negative symptoms;* 5 RCTs, N = unclear, d = -0.05, 95%CI -0.13 to 0.22, $p > 0.05$, $I^2 = 0\%$, $p = 0.775$	
Consistency in results	Consistent

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Precision in results	Precise
Directness of results	Indirect (mixed treatments and control conditions are combined)

Hunt GE, Siegfried N, Morley K, Brooke-Sumner C, Cleary M

Psychosocial interventions for people with both severe mental illness and substance misuse

Cochrane Database of Systematic Reviews 2019; 12

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Comparison 1	**Integrated care models for dual diagnosis patients (IC, incorporating substance abuse treatments, assertive community treatment, family psychoeducation, crisis intervention and skills training) vs. treatment as usual (TAU).**
Summary of evidence	**Moderate quality evidence (medium to large samples, consistent where applicable, imprecise, direct) suggests integrated care had no significant benefit over treatment as usual for study retention, substance use, quality of life, or functioning.**
Study retention: lost to treatment	
No significant effect on retention rates; By 36 months, N = 603, 3 RCTs, RR = 1.09, 95%CI 0.82 to 1.45, $p = 0.57$, $I^2 = 0\%$, $p = 0.38$	
Substance use	
No significant effect on remission rates; For alcohol users, N = 143, 1 RCT, RR = 1.15, 95%CI 0.84 to 1.56, $p = 0.38$ For drug users, N = 85, 1 RCT, RR = 0.89, 95%CI 0.63 to 1.25, $p = 0.49$	
Functioning	
No significant effect on global functioning; By 36 months, N = 170, 1 RCT, WMD = 0.40, 95%CI -2.47 to 3.27, $p = 0.78$	

Quality of Life	
No significant effect on general life satisfaction (QOLI); By 36 months, N = 373, 2 RCTs, WMD = 0.10, 95%CI -0.18 to 0.38, *p* = 0.49, I^2 = 0%, *p* = 1.00	
Risks	No differences in death rates. No other adverse effects reported.
Consistency in results	Consistent where applicable.
Precision in results	Imprecise for dichotomous outcomes (RR), unable to assess continuous outcomes (WMD – not standardised measure).
Directness of results	Direct
Comparison 2	**Intensive case management (ICM) or non-integrated models of care (including substance abuse treatments, family psychoeducation, crisis intervention and skills training) vs. treatment as usual (TAU).**
Summary of evidence	**Moderate to low quality evidence (small sample, consistent where applicable, imprecise, direct) suggests intensive case management had no significant benefit over treatment as usual for study retention.**
Study retention: lost to treatment	
No significant effect on retention rates; By 12 months, N = 134, 3 RCTs, RR = 1.21, 95%CI 0.73 to 1.99, *p* = 0.46, I^2 = 0%, *p* = 0.59	
Risks	No adverse effects are reported.
Consistency in results	Consistent
Precision in results	Imprecise
Directness of results	Direct
Comparison 3	**Cognitive behavioural therapy (CBT) plus motivational interviewing (MI) vs. treatment as usual.**
Summary of evidence	**Moderate to low quality evidence (small to medium samples, consistent where applicable, imprecise, direct) suggests CBT combined with motivational interviewing has little effect on functioning, study retention, or substance use.**

Study retention: lost to treatment	
No significant effect on retention rates; By 12 months, N = 327, 1 RCT, RR = 0.99, 95%CI 0.62 to 1.59, *p* = 0.99	
Substance use: average number of drugs used during the previous month	
No significant effect on number of drugs used; By 6 months, N = 119, 1 RCT, WMD = 0.19, 95%CI -0.22 to 0.60, *p* = 0.37	
Functioning	
No significant effect on functioning; By 12 months, N = 445, 4 RCTs, WMD = 1.24, 95%CI -1.86 to 4.34, *p* = 0.43, I^2 = 42%, *p* = 0.16	
Risks	No differences in death rates. No other adverse effects reported.
Consistency in results	Consistent where applicable.
Precision in results	Imprecise for RR, unable to assess continuous outcomes (WMD not standardised).
Directness of results	Direct
Comparison 4	**CBT vs. treatment as usual.**
Summary of evidence	**Moderate to low quality evidence (small samples, consistent where applicable, imprecise, direct) is unable to determine any benefit of CBT for study retention, substance use, and insight.**
Study retention: lost to treatment	
No significant effect on retention rates; By 3 months, N = 152, 2 RCTs, RR = 1.12, 95%CI 0.44 to 2.86, *p* = 0.81, I^2 = 0%, *p* = 0.95	
Substance use	

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No significant effect on cannabis use; By 6 months, N = 47, 1 RCT, RR = 1.30, 95%CI 0.79 to 2.15, *p* = 0.30	
Insight	
No significant effect on insight; By 3 months, N = 105, 1 RCT, WMD = 0.52, 95%CI -0.78 to 1.82, *p* = 0.43	
Risks	No adverse effects are reported.
Consistency in results	Most outcomes 1 RCT only apart from study retention which is consistent.
Precision in results	Imprecise for dichotomous outcomes. Unable to assess continuous outcomes (WMD not standardised).
Directness of results	Direct
Comparison 5	**Motivational interviewing (MI) vs. treatment as usual.**
Summary of evidence	**Moderate to low quality evidence (small samples, consistent where applicable, imprecise, direct) is unable to determine the benefits of motivational interviewing for study retention, symptoms, substance use, or functioning.**
Study retention: lost to treatment	
No significant effect on retention; By 6 months, N = 62, 1 RCT, RR = 1.71, 95%CI 0.63 to 4.64, *p* = 0.79	
Mental state: Symptom Check-List 90 R (SCL-90R) and PANSS	
No significant effect on mental state; General severity by 3 months, N = 30, 1 RCT, WMD = -0.19, 95%CI -0.59 to 0.21, *p* = 0.35	
Substance use	
No significant effect for reducing substance use, except for one small RCT reporting more abstaining in the MI group;	

Polydrug use by 12 months, N = 89, 1 RCT, WMD = -0.07, 95%CI -0.56 to 0.42, *p* = 0.78 Not abstaining by 6 months, N = 28, 1 RCT, RR = 0.36, 95%CI 0.17 to 0.75, *p* = 0.0064	
Risks	No differences in death rates. No other adverse effects are reported.
Consistency in results	Most outcomes 1 RCT, consistent where applicable.
Precision in results	Imprecise for dichotomous outcomes. Unable to assess WMD (not standardised).
Directness of results	Direct
Comparison 6	**Skills training vs. treatment as usual.**
Summary of evidence	**Moderate to low quality evidence (small sample, imprecise, inconsistent, direct) suggests no differences in retention rates.**
Study retention: lost to treatment	
No differences between groups; By 12 months, N = 122, 3 RCTs, RR = 1.42, 95%CI 0.20 to 10.10, *p* = 0.73, I^2 = 76%	
Risks	There were no differences in death rates. No adverse effects are reported.
Consistency in results	Inconsistent
Precision in results	Imprecise
Directness of results	Direct
Comparison 7	**Contingency management vs. treatment as usual.**
Summary of evidence	**Moderate to low quality evidence (small to medium-sized samples, consistent, some imprecision, direct) finds no differences in stimulant use. There were less hospitalisations with contingency management, but more loss to treatment.**
Study retention: Lost to treatment	
A small effect of more people lost to treatment in the contingency management group by 3 months; N = 255, 2 RCTs, RR = 1.55, 95%CI 1.13 to 2.11, *p* = 0.01, I^2 = 0%	

Substance use	
No differences in a stimulant-positive urine test; By 6 months, N = 176, 1 RCT, RR = 0.83, 95%CI 0.65 to 1.06, *p* = 0.14	
Mental state	
Less people hospitalised in the contingency management group by 6 months; N = 176, 1 RCT, RR = 0.21, 95%CI 0.05 to 0.93, *p* = 0.04	
Risks	No adverse effects are reported.
Consistency in results	Consistent where applicable
Precision in results	Precise for substance use only.
Directness of results	Direct

Wisdom JP, Manuel JI, Drake RE

Substance use disorder among people with first-episode psychosis: a systematic review of course and treatment

Psychiatric Services 2011; 62(9): 1007-12

View review abstract online

Comparison	**Treatments for substance use in people with first-episode psychosis.**
Summary of evidence	**Moderate quality evidence (medium to large samples, unable to assess consistency or precision, direct) is unclear as to the optimal treatments for reducing substance use in first-episode psychosis.**
Treatments for substance use	
6 studies (N = 1,364) found reductions in substance use following a multi-dimensional early intervention program for psychosis without specialised substance programs, however 2 studies (N = 203) found no difference.	

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2 studies (N = 446) found reductions in substance use following specialised early interventions targeting substance use, however 3 studies found no benefit (N = 154).	
Consistency in results	No measure of consistency is reported.
Precision in results	No measure of precision is reported.
Directness of results	Direct

Explanation of acronyms

ACT = Assertive community treatment, BDI = Beck Depression Inventory, BPRS = Brief Psychiatric Rating Scale, BSA = Brief Scale for Anxiety, CBT = Cognitive Behavioural therapy, CI = Confidence Interval, CPRS = comprehensive psychopathological rating scale, *d* = Cohen's *d* and *g* = Hedges' *g* = standardized mean differences (see below for interpretation of effect size), I^2 = the percentage of the variability in effect estimates that is due to heterogeneity rather than sampling error (chance), IC = Integrated care, ICM = Intensive case management, MADRS = Montgomery Asberg depression rating scale, MI = Motivational interviewing, MD = mean difference, N = number of participants, *p* = statistical probability of obtaining that result ($p < 0.05$ generally regarded as significant), PANSS = positive and negative syndrome scale, Q = Q statistic for the test of heterogeneity, Q_w = test for within group differences (heterogeneity in study results within a group of studies – measure of study consistency), Q_B = test for between group differences (heterogeneity between groups of studies for an outcome of interest), RCT = Randomised controlled trial, RR = Relative risk, SANS = Scale for the assessment of negative symptoms, SCR = schizophrenia change scale, SMD = standardised mean difference, SOFAS = Social and Occupational Functioning Scale, TAU = treatment as usual, vs = versus, WMD = weighted mean difference

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Explanation of technical terms

* Bias has the potential to affect reviews of both RCT and observational studies. Forms of bias include; reporting bias – selective reporting of results; publication bias - trials that are not formally published tend to show less effect than published trials, further if there are statistically significant differences between groups in a trial, these trial results tend to get published before those of trials without significant differences; language bias – only including English language reports; funding bias - source of funding for the primary research with selective reporting of results within primary studies; outcome variable selection bias; database bias - including reports from some databases and not others; citation bias - preferential citation of authors. Trials can also be subject to bias when evaluators are not blind to treatment condition and selection bias of participants if trial samples are small[11].

† Different effect measures are reported by different reviews.

Prevalence refers to how many existing cases there are at a particular point in time. Incidence refers to how many new cases there are per population in a specified time period. Incidence is usually reported as the number of new cases per 100,000 people per year. Alternatively some studies present the number of new cases that have accumulated over several years against a person-years denominator. This denominator is the sum of individual units of time that the persons in the population are at risk of becoming a case. It takes into account the size of the underlying population sample and its age structure over the duration of observation.

Reliability and validity refers to how accurate the instrument is. Sensitivity is the proportion of actual positives that are correctly identified (100% sensitivity = correct identification of all actual positives) and specificity is the proportion of negatives that are correctly identified (100% specificity = not identifying anyone as positive if they are truly not).

Weighted mean difference scores refer to mean differences between treatment and comparison groups after treatment (or occasionally pre to post treatment) and in a randomized trial there is an assumption that both groups are comparable on this measure prior to treatment. Standardised mean differences are divided by the pooled standard deviation (or the standard deviation of one group when groups are homogenous) that allows results from different scales to be combined and compared. Each study's mean difference is then given a weighting depending on the size of the sample and the variability in the data. Less than 0.4 represents a small effect, around 0.5 a medium effect, and over 0.8 represents a large effect[11].

Odds ratio (OR) or relative risk (RR) refers to the probability of a reduction (< 1) or an increase (> 1) in a particular outcome in a treatment group, or a group exposed to a risk factor, relative to the comparison group. For example, a RR of 0.75 translates to a reduction in risk of an outcome of 25% relative to those not receiving the treatment or not exposed to the risk factor. Conversely, a RR of 1.25 translates to an increased risk of 25% relative to those not receiving treatment or not having been exposed to a risk factor. A RR or OR of 1.00 means there is no difference between groups. A medim effect is considered if RR > 2 or < 0.5 and a large effect if RR > 5 or < 0.2[12]. lnOR stands for logarithmic OR where a lnOR of 0 shows no difference between groups. Hazard ratios

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measure the effect of an explanatory variable on the hazard or risk of an event.

Correlation coefficients (eg, r) indicate the strength of association or relationship between variables. They can provide an indirect indication of prediction, but do not confirm causality due to possible and often unforseen confounding variables. An r of 0.10 represents a weak association, 0.25 a medium association and 0.40 and over represents a strong association. Unstandardised (*b*) regression coefficients indicate the average change in the dependent variable associated with a 1 unit change in the independent variable, statistically controlling for the other independent variables. Standardised regression coefficients represent the change being in units of standard deviations to allow comparison across different scales.

‡ Inconsistency refers to differing estimates of effect across studies (i.e. heterogeneity or variability in results) which is not explained by subgroup analyses and therefore reduces confidence in the effect estimate. I^2 is the percentage of the variability in effect estimates that is due to heterogeneity rather than sampling error (chance) - 0% to 40%: heterogeneity might not be important, 30% to 60%: may represent moderate heterogeneity, 50% to 90%: may represent considerable heterogeneity and over this is considerable heterogeneity. I^2 can be calculated from Q (chi-square) for the test of heterogeneity with the following formula[11];

$$I^2 = \left(\frac{Q - df}{Q}\right) \times 100\%$$

§ Imprecision refers to wide confidence intervals indicating a lack of confidence in the effect estimate. Based on GRADE recommendations, a result for continuous data (standardised mean differences, not weighted mean differences) is considered imprecise if the upper or lower confidence limit crosses an effect size of 0.5 in either direction, and for binary and correlation data, an effect size of 0.25. GRADE also recommends downgrading the evidence when sample size is smaller than 300 (for binary data) and 400 (for continuous data), although for some topics, these criteria should be relaxed[13].

‖ Indirectness of comparison occurs when a comparison of intervention A versus B is not available but A was compared with C and B was compared with C that allows indirect comparisons of the magnitude of effect of A versus B. Indirectness of population, comparator and/or outcome can also occur when the available evidence regarding a particular population, intervention, comparator, or outcome is not available and is therefore inferred from available evidence. These inferred treatment effect sizes are of lower quality than those gained from head-to-head comparisons of A and B.

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