

**Table 2**

*Characteristics of Included Studies*

Study	Objectives	Study setting	Type of dual diagnosis	Sample description	Study design	Main findings
Coffey et al. (2016) USA <sup>a</sup>	To evaluate the efficacy of mPE <sup>b</sup> , relative to the traditional TSF <sup>c</sup> , for treating PTSD <sup>d</sup> in participants with co-occurring substance dependence.	Community residential SUD <sup>e</sup> treatment facility, in-patient.	PTSD + alcohol dependence	$n = 126$ $\bar{x}$ age = 34 years Gender: M <sup>f</sup> – 53.97%; F <sup>g</sup> – 46.03% Race/ethnicity: W <sup>h</sup> – 79.4%; B <sup>i</sup> – 19%; O <sup>j</sup> – 1.6%	Randomised controlled trial <b>Experiment:</b> mPE + MET-PTSD <sup>k</sup> + TAU <sup>l</sup> , <i>integrated</i> <b>Experiment:</b> mPE + TAU, <i>integrated</i> <b>Control:</b> HLS <sup>m</sup> + TAU, <i>non-integrated</i>	Both the mPE and mPE + MET-PTSD conditions achieved significantly better PTSD outcomes than the control condition. The mPE + MET-PTSD and mPE conditions did not differ from one another on PTSD symptoms at the end of treatment, three-, or six-month follow-up. Substance use outcomes did not differ between groups. Clinically significant improvement in trauma symptoms, 75.8% of the mPE participants, 60% of the mPE + MET-PTSD participants, and 44.4% of the HLS participants at the end-of-treatment.
Courbasson et al. (2012) USA	To examine the preliminary efficacy of adapted DBT <sup>n</sup> , relative to TAU, for treating patients with a co-occurring ED <sup>o</sup> and SUD.	Specialised substance use and mental health clinic, out-patient.	ED (binge eating d/o <sup>p</sup> , bulimia nervosa and anorexia nervosa) + SUD (both substance abuse and/or dependence, excluding nicotine)	$n = 25$ $\bar{x}$ age = 32.53 years Gender: F – 100% Race/ethnicity: W – 100%	Matched randomised controlled trial <b>Experiment:</b> DBT, <i>integrated</i> <b>Control:</b> TAU, <i>integrated</i>	DBT condition evidenced a superior retention rate relative to the TAU condition at various study time points, including post-treatment (80% versus 20%) and follow-up (60% versus 20%). DBT condition revealed that the intervention had a significant positive effect on behavioural and attitudinal features of disordered eating, substance use severity and use, negative mood regulation and depressive symptoms. Increases in participants' perceived ability to regulate and cope with negative emotional states were significantly associated with decreases in emotional eating and increases in

Foa et al. (2013) USA	To compare the efficacy of an evidence-based treatment for alcohol dependence and an evidence-based treatment for PTSD, their combination, and supportive counselling.	Center for the Treatment and Study of Anxiety and the Philadelphia Veterans Affairs Hospital, out-patient.	PTSD + alcohol dependence	<p><math>n = 165</math></p> <p><math>\bar{x}</math> age = 42.73 years</p> <p>Gender: M – 65.5%; F – 34.5%</p> <p>Race/ethnicity: W – 30.4%; B – 63.6%; H<sup>a</sup> – 4.2%; NA<sup>r</sup> – 0.6%; O – 1.2%</p>	<p>Single-blind, randomised controlled trial</p> <p><b>Experiment:</b> PTSD exposure therapy + naltrexone, <i>non-integrated</i></p> <p><b>Experiment:</b> PTSD exposure therapy + pill placebo, <i>non-integrated</i></p> <p><b>Experiment:</b> Supportive counselling + naltrexone, <i>non-integrated</i></p> <p><b>Control:</b> Supportive counselling + pill placebo, <i>non-integrated</i></p>	<p>confidence levels to resist urges for substance use.</p> <p>Participants in all four treatment groups had significant reductions in the percentage of days drinking.</p> <p>However, those who received naltrexone had lower percentages of days drinking than those who received a placebo.</p> <p>There was also a reduction in PTSD symptoms in all four groups, but the main effect of prolonged exposure therapy was not statistically significant.</p> <p>Six months after the end of treatment, participants in all four groups had increases in the percentage of drinking days. However, those in the prolonged exposure therapy plus naltrexone group had the smallest increases.</p>
Garland et al. (2016) USA	To compare the effectiveness of MORE <sup>s</sup> , relative to CBT <sup>t</sup> and TAU, for treating previously homeless men residing in a therapeutic community.	Modified therapeutic community programme in an urban area, out-patient.	Psychiatric d/o + SUD	<p><math>n = 180</math></p> <p><math>\bar{x}</math> age = 37.63 years</p> <p>Gender: M – 100%</p> <p>Race/ethnicity: W – 42.2%; B – 44.5%; O – 13.3%</p>	<p>Pragmatic randomised controlled trial</p> <p><b>Experiment:</b> MORE, <i>integrated</i></p> <p><b>Experiment:</b> CBT, <i>integrated</i></p> <p><b>Control:</b> TAU, <i>non-integrated</i></p>	<p>From pre- to post-treatment, MORE was associated with modest yet significantly more significant improvements in substance craving, post-traumatic stress, and negative affect than CBT, and more significant improvements in post-traumatic stress and positive affect than TAU.</p> <p>A significant indirect effect of MORE on decreasing craving and post-traumatic stress by increasing dispositional mindfulness was observed.</p>

Gouzoulis-Mayfrank et al. (2015) Germany	To evaluate the efficacy of a long-term, trans-sector integrated treatment programme relative to TAU for treating dual diagnosis patients with a follow-up period of 12 months under standard treatment conditions.	Large psychiatric hospital, in-patient and out-patient.	Schizophrenia, schizophreniform, or schizoaffective d/o + substance misuse or dependence	<p><math>n = 100</math></p> <p><math>\bar{x}</math> age = 30.97 years</p> <p>Gender: M – 84%; F – 16%</p> <p>Race/ethnicity: Not indicated</p>	<p>Randomised controlled trial</p> <p><b>Experiment:</b> InT<sup>u</sup>, <i>integrated</i></p> <p><b>Control:</b> TAU, <i>non-integrated</i></p>	<p>The patients in the intervention group developed higher abstinence motivation than those in the control group and transiently reduced their substance use to a greater extent.</p> <p>Their global functioning and retention rate were also higher, but these differences did not reach significance.</p>
Graham et al. (2016) UK <sup>v</sup>	To assess the effectiveness and feasibility of a BIMi <sup>w</sup> , relative to TAU, for improving engagement in drug and alcohol misuse treatment.	Acute mental health hospital, in-patient.	Schizophrenia, schizoaffective or delusional d/o; bipolar affective d/o + alcohol and/or drug abuse/dependence	<p><math>n = 59</math></p> <p><math>\bar{x}</math> age = 38.6 years</p> <p>Gender: M – 84.75%; F – 15.25%</p> <p>Race/ethnicity: W – 47.6%; B – 25.35%; A<sup>x</sup> – 16.95%; M<sup>y</sup> – 10.05%</p>	<p>Randomised controlled trial</p> <p><b>Experiment:</b> BIMi, <i>non-integrated</i></p> <p><b>Control:</b> TAU, <i>non-integrated</i></p>	<p>85% of participants were retained in the study at follow-up and 70% of participants engaged in the BIMi with a good level of exposure to it</p> <p>Both groups remained in the “low” readiness to change category for alcohol and drugs at follow-up.</p> <p>Assessment of motivation to change indicated that both groups at baseline similarly rated the importance to change their substance use.</p> <p>Both groups reduced the number of days they used by more than half. However, the effect was not significant.</p> <p>No evidence of a treatment effect on HADS<sup>z</sup> Anxiety. The HADS Depression, although not significant, was in line with a modest effect on that outcome suggesting that the TAU had higher depression scores.</p>
McGovern et al. (2011) USA	To determine the potential efficacy of ICBT <sup>aa</sup> , relative to IAC <sup>ab</sup> .	Community addiction treatment	PTSD + SUD	<p><math>n = 53</math></p> <p><math>\bar{x}</math> age = 37.3 years</p>	<p>Stage I phase III randomised controlled trial</p>	<p>ICBT was more effective than individual addiction counselling in reducing PTSD re-experiencing symptoms and PTSD diagnosis.</p>

		programmes, out-patient.		Gender: M – 41.65%; F – 58.35% Race/ethnicity: W – 91.35%; O – 8.65%	<b>Experiment:</b> ICBT, <i>integrated</i> <b>Control:</b> IAC, <i>non-integrated</i>	IAC was comparably effective to ICBT in substance use outcomes and on other measures of psychiatric symptom severity. Participants assigned to IAC with severe PTSD were less likely to initiate and engage in the therapy than those assigned to ICBT. In general, participants with severe PTSD were more likely to benefit from ICBT. PTSD symptoms reduced in all conditions with no difference between them.
McGovern et al. (2015) USA	To assess the efficacy of ICBT, relative to IAC and standard care alone, on substance use and PTSD symptoms.	Addiction treatment agencies, out-patient.	PTSD + SUD	$n = 221$ $\bar{x}$ age = 35.3 years Gender: M – 40.7%; F – 59.3% Race/ethnicity: W – 95.5%; O – 4.5%	Single-blind, three-group, repeated measure, parallel-group, randomised controlled trial <b>Experiment:</b> ICBT + SC <sup>ac</sup> , <i>integrated</i> <b>Experiment:</b> IAC + SC, <i>non-integrated</i> <b>Control:</b> SC only, <i>non-integrated</i>	ICBT produced more favourable outcomes on toxicology than IAC or SC and had a more significant reduction in reported drug use than SC. ICBT patients had better therapy continuation versus IAC.
Mills et al. (2012) Australia	To evaluate the efficacy of COPE <sup>ad</sup> , relative to TAU for substance dependence, to achieve greater reductions in PTSD and substance dependence symptom severity.	Substance use treatment services, out-patient.	PTSD + substance dependence	$n = 103$ $\bar{x}$ age = 33.7 years Gender: M – 37.9%; F – 62.1% Race/ethnicity: AB <sup>ac</sup> – 84.5%; Ab <sup>af</sup> – 5.8%	Randomised controlled trial <b>Experiment:</b> COPE + TAU, <i>integrated</i> <b>Control:</b> TAU only, <i>non-integrated</i>	From baseline to nine-month follow-up, significant reductions in PTSD symptom severity were found for both the treatment group and the control group. However, the treatment group demonstrated a significantly greater reduction in PTSD symptom severity. No significant between-group difference was found concerning improvement in the severity of substance dependence, nor were there any significant between-group differences concerning changes in substance use, depression, or anxiety.

Sannibale et al. (2013) Australia	To assess the efficacy of ICBT, relative to CBT for AUD only, for patients with PTSD and co-existing AUD.	Mental health clinics, out-patient.	PTSD + AUD <sup>ag</sup>	$n = 62$ $\bar{x}$ age = 41.18 yrs. Gender: M – 47%; F – 53% Race/ethnicity: Not indicated	Randomised controlled trial <b>Experiment:</b> IT <sup>ah</sup> for PTSD + AUD, <i>integrated</i> <b>Control:</b> AS <sup>ai</sup> , <i>non-integrated</i>	Reductions in PTSD severity were evident in both groups. IT participants who had received one or more exposure therapy sessions exhibited a twofold greater rate of clinically significant change in CAPS <sup>aj</sup> severity at follow-up than AS participants. AS participants exhibited more significant reductions than IT participants in alcohol consumption, dependence and problems within the context of greater treatment from other services during follow-up.
Wüsthoff et al. (2014) Norway	To investigate the effectiveness of IT, relative to TAU, for patients with SUD with co-occurring anxiety and/or depression.	Community mental health centres, out-patient.	Anxiety and/or depression (with or without a personality d/o) + d/o of abuse or dependence from drugs and alcohol	$n = 76$ $\bar{x}$ age = 37.25 years Gender: M – 52.6%; F – 47.4% Race/ethnicity: N <sup>ak</sup> – 95.8%; O – 4.2%	Pragmatic, group randomised controlled trial <b>Experiment:</b> IT, <i>integrated</i> <b>Control:</b> TAU, <i>non-integrated</i>	Both groups reduced their alcohol and substance use during the trial, while there was no change in psychiatric symptoms in either group. However, the intervention group had a more significant increase in motivation for substance use treatment after 12 months than had the control group.

<sup>a</sup> United States of America.

<sup>b</sup> Modified Prolonged Exposure.

<sup>c</sup> Twelve-Step Facilitation Therapy.

<sup>d</sup> Posttraumatic Stress Disorder.

<sup>e</sup> Substance Use Disorder.

<sup>f</sup> Male.

<sup>g</sup> Female.

<sup>h</sup> White.

<sup>i</sup> Black.

<sup>j</sup> Other.

<sup>k</sup> Modified Prolonged Exposure + Trauma-Focused Motivational Enhancement.

<sup>l</sup> Treatment as Usual.

<sup>m</sup> Health Information-Based Control Condition.

<sup>n</sup> Dialectical Behavioural Therapy.

<sup>o</sup> Eating Disorder.

<sup>p</sup> Disorder.

<sup>q</sup> Hispanic.

<sup>r</sup> Native American.

<sup>s</sup> Mindfulness-Oriented Recovery Enhancement.

<sup>t</sup> Cognitive Behavioural Therapy.

<sup>u</sup> Integrated Treatment.

<sup>v</sup> United Kingdom.

<sup>w</sup> Brief Integrated Motivational Intervention.

<sup>x</sup> Asian.

<sup>y</sup> Mixed.

<sup>z</sup> Hospital Anxiety and Depression Scale.

<sup>aa</sup> Integrated Cognitive Behavioural Therapy.

<sup>ab</sup> Individual Addiction Counselling.

<sup>ac</sup> Standard Care.

<sup>ad</sup> Concurrent Treatment of PTSD and Substance Use Disorders Using Prolonged Exposure.

<sup>ae</sup> Australian-Born.

<sup>af</sup> Aboriginal or Torres Strait Islander.

<sup>ag</sup> Alcohol Use Disorder.

<sup>ah</sup> Integrated Treatment.

<sup>ai</sup> Cognitive Behavioural Therapy for Alcohol Use Disorder + supportive counselling.

<sup>aj</sup> Clinician-Administered Posttraumatic Stress Disorder Scale.

<sup>ak</sup> Norwegian.