

Table 1: Details of Included Papers from 11 Articles (9 studies)

Author (country); Study type	Setting (% male/female)	Age (ethnicity)	Follow-up period (follow up rates)	Alcohol screening used and cut-off used (who screened)	Intervention [number randomised]	Control [number randomised]
Brief Interventions						
Davis et al, 2003 (USA); RCT	Prison (97% male)	Mean 45.7 SD 7.7 (49% Caucasian; 38% African- American)	2 months (41%)	Form-90 alcohol tool (researcher)	1 session of MI (60 mins) [n=36]	TAU & information on local services [n=37]
Stein et al, 2010 (USA); RCT	Prison/Jail (100% female)	Mean 34.1 SD 8.9 (71% Caucasian; 19% African- American; 7% Hispanic)	1, 3 and 6 months (76%, 79%, 79%)	AUDIT 8+ (researcher)	2 sessions of MI (45-60 mins): Second session after the first follow=up [n=125]	TAU [n=120]
Begun et al, 2011 (USA); RCT	Local Jails (100% female)	Mean 35.7 SD 8.7 (57% African- American; 31% White; 6% Hispanic)	2 months post release (20%)	AUDIT-12 8+ (researcher)	1 session of MI (60-90 mins) [n=468]	TAU [n=261]
Stein, Clair et al, 2011 (USA); RCT	Juvenile Correctional Facility (86% male)	Mean 17.1 SD 1.1 (33% White; 29% Hispanic; 28% African- American)	3 months (86%)	Risk and Consequences Questionnaire- Alcohol (Researcher)	2 sessions of MI (session 1=90 mins; session 2=60 mins) [n=189 randomised, no breakdown given]	2 sessions of relaxation training (session 1=90 mins; session 2=60 mins)
Stein, Lebeau et al, 2011 (USA); RCT	Juvenile Correctional Facility (84% male)	Mean 17.1 SD 1.1 (32% Hispanic; 30% African-American; 30% White)				
Owens et al, 2016 (USA); RCT	Jails (100% male)	Mean age 34.4 SD 9.8 (27.5% Hispanic; 20% Native American/Alaskan Native; 17.5% African American; 7.5% Biracial/multiracial/other)	Between 1 & 3 months (63%)	ASSIST (Researcher)	1 session of MI (50-60 mins) [n=23]	1 session of educational videos (50-60 mins) [n=17]
Longer interventions						
Chance et al, 1990 (USA); Matched group	Prison (100% male)	Not given	30 weeks (68%)	Unsure (unsure)	6-18 months lifeline counselling (reality therapy & control theory) plus AA/ NA attendance & aftercare including AA/NA & family counselling [n=20]	TAU [n=40]
Baldwin et al, 1991 (UK); RCT	Juvenile Correctional Facility (100% male)	Mean 19.4; range 16.9-20.8 (no ethnicity given)	12 months (78%)	More than half of their total offences drink- related (Social worker)	6 sessions of MI (each session 120 mins) [n=14]	TAU [n=13]
Peters et al, 1993 (USA) matched group	Jail (74% male)	Mean 29 SD 7.5 (53% African- American; 44% Caucasian)	12 months (44%)	Addiction Severity Index (Program counsellors)	Cognitive-behavioural, skills based intervention over six weeks (three groups) 1. Special topics group re motivation & commitment; 2. Relapse prevention (1); 3. Relapse prevention (2) 27+ sessions [n=535]	TAU [n=422]
Bowes et al, 2012, (UK); RCT	Prison (100% male)	Mean 24.5 SD 5.7 (93% White)	Unclear (77%)	Alcohol-Related Aggression Questionnaire (unsure)	10 sessions covering selection of topics; 20 hours of group treatment, and 4 hours of individual support over four weeks (COVAID) [n=56]	TAU [n=59]
Bowes et al, 2014, (UK) RCT						

AA: Alcoholics Anonymous; MI; Motivational Interviewing; mins: minutes; NA: Narcotics Anonymous; TAU: Treatment as Usual

Table 2: Outcome Measures and Significant Results of Included Studies

Author	Outcomes (measures)	Significant results
Brief Interventions		
Davis et al, 2003	P: Engagement with services with VA substance abuse services (TSR) S: Contact with other substance abuse services (TSR) S: substance use (Form 90) S: Consequences (SIP) S: Addiction Severity (ASI) S: Readiness to change (Readiness to Change Questionnaire)	Those in the IG were statistically more likely to schedule appointments at both VA services with 60 days (66.7 vs. 40.5%; $X = 5.01, p = 0.025$).
Stein et al, 2010	Drinking diary Alcohol use disorders (AUDIT)	Intervention effects on abstinent days were statistically significant at 3 months (odds ratio = 1.96, 95% CI 1.17, 3.30).
Begun et al, 2011	P: Engagement with substance abuse treatment services P: Level of reported alcohol use (AUDIT-12)	Mean reduction in AUDIT score from baseline to follow-up were greater in the intervention group ($F(1,148)=6.336, p \leq 0.001$).
Stein, Clair et al, 2011	Risk and consequences of drinking (RCQ-A) Depression (CES-D)	No significant results related to alcohol.
Stein, Lebeau et al, 2011	Alcohol and drug use (structured clinical interview for DSM-IV) Depression (CES-D) Alcohol use (TLFB)	No significant results related to alcohol.
Owens et al, 2016	Feasibility Pre-intervention motivation and confidence ratings IDPA to assess social networks ASI criminal and treatment history Alcohol and substance use Form-90	No significant results related to alcohol.
Extended interventions		
Chance et al, 1990	P: Sobriety (weekly urine sample) S: Changes in attitude towards self and others (self-perception profiles) S: Control over life (staff self perception profiles)	No significant results related to alcohol.
Baldwin et al, 1991	P: Drinking behaviour (MAST; SADQ) P: Offending behaviour (self-report) S: Wellbeing (General Health Questionnaire)	The IG reported less drinking in units per session than CG ($p < 0.05$). The IG had significantly less 'rules and regulations' offences than the CG ($p < 0.05$). The IG averaged fewer offences against the person compared to the CG ($p < 0.05$). The CG increased average number of alcohol units per week compared to the IG $F(1,19)=4.546 (p < 0.05)$; The CG increased average alcohol units per drinking session compared to the IG $F(1,19)=6.753 (p < 0.05)$. The IG reduced the average number of offences against property compared to the CG $F(1,13)=6.489 (P < 0.05)$.
Peters et al, 1993	P: Recidivism (arrest data)	The IG had significantly more days free before arrest compared to the CG $t(418)=3.0 (p=0.01)$. Significantly less arrests $t(418)=2.7 (p=0.01)$. Significantly less jailed time served $t(418)=2.4 (p=0.05)$.
Bowes et al, 2012	P: Alcohol related aggression (ARAQ-AA) S: Anger (STAXI-2) S: Impulsivity (IVE) S: Self-Efficacy (CDSSES)	There were significant main effects of time, with lower scores at Time 2 for the following measures: ARAQ AA,

		<p>$F(1, 87) = 4.81, p = .03, \eta^2 = .05$, CDESES OC, $F(1, 87) = 15.78, p < .001, \eta^2 = .15$, CDESES CCFC, $F(1, 86) = 20.88, p < .001, \eta^2 = .20$, CDESES NA, $F(1, 87) = 20.16, p < .001, \eta^2 = .19$, CDESES PM, $F(1, 87) = 5.92, p = .01, \eta^2 = .06$, CDESES quantity, $F(1, 86) = 4.81, p < .001, \eta^2 = .15$, CDESES frequency, $F(1, 87) = 11.37, p = .001, \eta^2 = .12$, total CDESES, $F(1, 86) = 25.14, p < .001, \eta^2 = .23$, STAXI-2 Anger Expression Out, $F(1, 86) = 10.69, p = .002, \eta^2 = .11$, STAXI-2 Anger Expression In, $F(1, 86) = 4.04, p = .05, \eta^2 = .05$, STAXI-2 Anger Control Out, $F(1, 86) = 4.42, p = .04, \eta^2 = .05$, STAXI-2 Anger Expression Index, $F(1, 86) = 12.57, p = .001, \eta^2 = .13$, and IVE I, $F(1, 87) = 16.77, p < .001, \eta^2 = .16$.</p> <p>There were significant Group \times Time interactions, with the COVAID group reporting significantly greater change scores in the desired directions on ARAQ AA ($\eta^2 = .05$), ARAQ Total ($\eta^2 = .05$), CDESES OC ($\eta^2 = .09$), CDESES CCFC ($\eta^2 = .11$), CDESES NA ($\eta^2 = .12$), CDESES PM ($\eta^2 = .04$), CDES Frequency ($\eta^2 = .07$), CDESES Quantity ($\eta^2 = .07$), CDESES Total ($\eta^2 = .14$), and the IVE empathy subscale ($\eta^2 = .04$).</p>
Bowes et al, 2014	Reconviction.	No significant results found.

STAXI-2: State-Trait Anger Expression Inventory; IVE: Impulsivity, Venturesome and Empathy Scale; CDESES: Controlled Drinking Self-Efficacy Scale; ASI: Addiction Severity Index; IG: Intervention Group; CG: Control Group; RSQ-A: Risks and Consequence Questionnaire – Alcohol; TSR: Treatment Services Review; SIP: Short Inventory of Problems; P: Primary outcome; S: Secondary outcome; DSM-IV: Diagnostic and Statistical Manual of Mental Disorders, 4th. Edition; CES-D: Center for Epidemiological Studies - Depression; TLFB: Time Line Follow Back; AUDIT: Alcohol Use Disorders Identification Test; VA: Veterans Association; MAST: Michigan Alcohol Screening Test; SADQ: Severity of Alcohol Dependence Questionnaire; ARAQ-AA: Alcohol Related Aggression Questionnaire – Alcohol Aggression Scale; CDESES PM: Controlled Drinking Self-Efficacy Scale Positive Mood; CDESES CCFC: Confidence Controlling Frequency and Consumption; CDESES NA: Controlled Drinking Self-Efficacy Negative Affect; CDESES OC: Controlled Drinking Self-Efficacy Overall Confidence; IDPA: Important People Drug and Alcohol Interview

Table 3: Quality Assessment of Included Studies

Author	Did the trial address a clearly focused issue?	Was the assignment of patients to treatments randomised?	Were participants blinded?	Were the groups similar at the start of the trial?	Were the groups treated equally?	Were all participants accounted for at conclusion?	How large was the treatment effect?	How precise was the estimate of the treatment effect?	Can the results be applied in the local population context?	Were all important outcomes considered?	Are the benefits worth the harms and the costs?	Level of risk (quality assessment)
Brief interventions												
Davis et al, 2003	YES	YES	NO	NO	YES	NO	YES	YES	UNSURE	NO	UNSURE	HR
Stein et al, 2010	YES	YES	R: YES P: NO	YES	YES	UNSURE	YES	YES	YES	NO	NO	LR
Begun et al, 2011	YES	YES	NO	NO	YES	NO	YES	YES	UNSURE	NO	YES	MR
Stein, Clair et al, 2011 & Stein, Lebeaue et al, 2011	YES	YES	R: YES P: UNSURE	UNSURE	UNSURE	NO	YES	YES	NO	NO	YES	MR
Owens et al, 2016	YES	YES	NO	NO	YES	NO	NO	NO	NO	YES	NO	MR
Extended interventions												
Chance et al, 1990	YES	NO	NO	UNSURE	NO	NO	NO	NO	NO	UNSURE	UNSURE	HR
Baldwin et al, 1991	YES	YES	UNSURE	NO	NO	NO	YES	YES	NO	YES	YES	MR
Peters et al, 1993	YES	NO	UNSURE	NO	NO	NO	YES	YES	NO	YES	UNSURE	HR
Bowes et al, 2012 & 2014,	YES	YES	UNSURE	NO	YES	NO	YES	YES	NO	NO	YES	MR

R=Researchers. P=Participants. HR=High risk of bias. MR=Medium risk of bias. LR=Low risk of bias.

Table 4: TIDieR results of included Brief Intervention Studies

	Davis et al, 2003	Stein et al, 2010	Begun et al, 2011	Stein, Clair et al, 2011 & Stein, Lebeaue et al, 2011	Owens et al, 2016
Provide the name or a phrase that describes the intervention.	Brief MI	MI	MI	MI	MI
Describe any rationale, theory, or goal of the elements essential to the intervention.	MI based on work of Miller & Rollnick, 2002.	MI based on work of Miller & Rollnick, 2002.	MI based on work of Miller & Rollnick, 2002.	MI based on work of Miller & Rollnick, 2002.	MI based on work of Miller & Rollnick, 2002.
Materials: Describe any physical or informational materials used in the intervention. Provide information on where the materials can be accessed.	None given.	Manual was used.	Resource folder (including information about treatment, support services, housing, clothing, healthcare) and a 3-month calendar.	Handouts were given (e.g. goals chosen).	Manual that targeted alcohol & other drug use.
Procedures: Describe each of the procedures, activities, and/or processes used in the intervention, including any enabling or support activities.	Personalised feedback provided (pre-incarceration drinking rates relative to national averages, performance on neuropsychological tests compared to national averages, & ratings of physical & emotional health.) Participants were also given graphical information re: types of situations in which they reported commonly using substances, self-reported problems & dependence criteria endorsed, & their reported readiness for change. Interviewers were non-confrontational in tone, asked open-ended questions & used reflective listening skills. Interviewers allowed participants to come to their own conclusions, if any, about the feedback & need for treatment. VA referral information was reviewed at the end of the interview.	Initial session (during incarceration) - Interventionist used MI techniques re: goal setting & strategies to deal with obstacles/barriers that might affect these goals. Due to RIDOC regulations, participants were not allowed to keep any materials from the session. Upon release, the feedback report & change plan handouts, payment for the baseline interview, community resources, condoms & the next appointment date were mailed to participant. Follow-Up Session - Based on participant's goal(s) & change plan from initial MI session. Sessions focused on progress, assessment of barriers, & developing concrete strategies for meeting new goals.	Feedback intervention to engage the women in an exploration of their own motivation & commitment to behavior change. The objectives were to explore & resolve ambivalence, address decisional balance (the pros and cons of changing and not changing their substance-related behaviors), explore options (including self-change attempts, informal systems, & formal services), & resolve perceived barriers specific to engaging with substance abuse services.	MI focusing on empathy, not arguing, developing discrepancy, self-efficacy, & personal choice. Sections of the MI included developing rapport, exploration of motivation (pros & cons), personalized assessment feedback, imagining the future with & without change, & establishing goals. Focus of the intervention was on reduction of alcohol and/or marijuana use & associated risky behaviors & consequences of use (e.g., injuries while drunk or high).	MI session following a manual that targeted alcohol & other drug use, & if relevant, participants social networks & engagement in treatment. Open-ended questions elicited participants' reasons to change. Normative feedback was not included.
For each category of intervention provider, describe their expertise, background & any specific training given.	Clinical Research Staff who had completed/ were completing Masters Degrees. 12 hours of training in MI. Training: didactics & observed practices &		Graduate social workers trained in research protocol engaged women in initial demographic & brief screening interview.	Research counsellors delivered both type of intervention. Treatments were manualized & 20 hours training was given as well as weekly supervision.	Delivered by advanced clinical psychology graduate tutors who were trained in MI & had experience of delivering MI.

	experiences & supervision provided.				
Describe the mode of delivery of the intervention & whether it was provided individually or in a group.	One on one sessions.	One on one sessions.	One on one sessions.	One on one sessions.	One on one sessions.
Describe the type(s) of location(s) where the intervention occurred, including any necessary infrastructure or relevant features.	Private room in the jail	First session in prison (no details). Second session in hospital based community research site (no details).	Private room in the jail	Juvenile correctional facility	Private room at the jail that had windows to ensure the safety of study staff & participants but offered auditory confidentiality.
Describe the number of times the intervention was delivered & over what period of time including the number of sessions, their schedule, & their duration, intensity or dose.	One session of 60 mins per person.	Two sessions of between 30-45 mins per person.	One session of 60-90 mins per person.	One 90 minute session & one 60 min booster session.	One session of 50-60 mins per person.
If the intervention was planned to be personalised, titrated or adapted, then describe what, why, when & how.	Personalised MI intervention based on results of screening.	Personalised MI intervention based on results of screening.	Personalised MI intervention based on results of screening.	MI: personalised intervention. RT: personalised as individual described relaxing place – individual to them.	Personalised MI intervention based on results of screening.
If the intervention was modified during the course of the study, describe the changes (what, why, when & how).	N/A	N/A	N/A	N/A	N/A
Planned: if intervention adherence of fidelity was assessed, describe how & by whom, & if any strategies were used to maintain or improve fidelity, describe them. & Actual: describe the extent to which the intervention was delivered as planned.	N/A	MITI was used to train & to monitor the MI skills of the interventionists during biweekly supervision. The MITI allows for assessment of threshold competence for therapists & a measure of integrity of MI interventions using two global scores (“empathy” & “spirit,” score range 1–7) & seven behavior counts (e.g. “giving information”, “MI adherent”).	N/A	Adolescents & research counsellors completed evaluation forms assessing whether core components of the interventions occurred.	Sessions were recorded for supervision with a certified MI trainer & to assess treatment fidelity.

MITI: MI Treatment Integrity Code Version 2.0

Table 5: TIDieR Results of Included Extended Intervention Studies

	Chance et al, 1990	Baldwin et al, 1991	Peters et al, 1993	Bowes et al, 2012 & 2014
Provide the name or a phrase that describes the intervention:	Lifeline Drug & Alcohol Treatment Programme.	Alcohol Education Course (AEC).	In-Jail Treatment Programme.	COVAID.
Describe any rationale, theory, or goal of the elements essential to the intervention:	Reality therapy counselling	AEC similar to other behavioural AECs with the omission of context inappropriate material.	Cognitive behavioural, skills based approach that includes a focus on relapse prevention. Goals are to encourage long-term abstinence through prevention of lapse & relapse to substance abuse.	Cognitive behavioural treatment aimed at reducing alcohol related aggression.
Materials: Describe any physical or informational materials used in the intervention. Provide information on where the materials can be accessed	Inmates completed a weekly self-perception profile that addressed attitudes to oneself & others within program. Each participant kept a diary.	AEC materials.	None mentioned.	Manualised COVAID intervention.
Procedures: Describe each of the procedures, activities, and/or processes used in the intervention, including any enabling or support activities.	Weekly self-perception profile, individual counselling sessions & diary keeping.	Materials were presented so offender clients could acquire info/skills in reduced drinking/offending. Control group received nothing. MSI interview, follow up & collateral interview.	Three types of groups offered: 1. Special Topics Group - Focus on issues related to orientation to treatment (inc. motivation & commitment, ambivalence about adopting a drug-free lifestyle, family issues, shame & guilt associated with substance abuse, & health-related consequences of substance abuse). 2. Relapse Prevention – Level One. 27 sessions: two hours per day, five days per week. 3. Relapse Prevention – Level Two. For inmates who have completed Level One, Level Two groups focus on relapse prevention skills in greater depth.	The 10 sessions covered: explaining alcohol-related aggression, crime harm reduction, managing anger & stress, modifying drinking, altering triggers, weakening the expectancies that contribute to alcohol-related violence, identifying & coping with high-risk situations, & enhancing problem solving skills.
For each category of intervention provider, describe their expertise, background & any specific training given.	Director of program selected due to commitment to Lifeline & understanding of prisons. Other personnel given reality therapy training. Lead author was therapy certified & given ongoing training, as were inmates when they became peer counsellors.	Each worker (social worker, prison psychologist, teacher) had achieved criterion performance with the Motivational Screening Instrument.		Trained facilitators employed by the probation service or prison group work facilitators. Trained by Delight Training (www.delight.co.uk)

Describe the mode of delivery of the intervention & whether it was provided individually or in a group.	Individual & group counselling sessions as well as participation in self help programmes including AA.	Interviews (additional collateral interviews held with spouses/relatives/friend/drinking partners).	In groups of 8-12 people.	In groups of 8-10 people & individual sessions.
Describe the type(s) of location(s) where the intervention occurred, including any necessary infrastructure or relevant features.	N/A	N/A	N/A	N/A
Describe the number of times the intervention was delivered & over what period of time including the number of sessions, their schedule, & their duration, intensity or dose.	No pre-established length of time: ranged from 6 – 18 months.	6 weekly sessions of two hours.	27 sessions, 2 hours per day, 5 days per week. Level 2 then provides opportunity to focus on more. Average length of stay in program was 45 days.	20 hours of group treatment & 4 hours of individual support. Altogether 10 sessions.
If the intervention was planned to be personalised, titrated or adapted, then describe what, why, when & how.	Individual counselling with sessions personalised.	N/A	Inmates work to design a long-term recovery plan & to develop a balanced lifestyle through participating in drug free pleasurable activities.	4 hours of individual support – including looking at personal coping strategies
If the intervention was modified during the course of the study, describe the changes (what, why, when & how).	N/A	N/A	N/A	N/A
Planned: if intervention adherence of fidelity was assessed, how & by whom, & if any strategies were used to maintain or improve fidelity, describe them & Actual: the extent to which the intervention was delivered as planned	N/A	N/A	N/A	N/A