

# A rapid systematic review of what we know about alcohol use disorders and brief interventions in the criminal justice system

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## Abstract

**Purpose** – The purpose of this paper is to review the evidence of alcohol use disorders within the different stages of the criminal justice system in the UK. Furthermore it reviewed the worldwide evidence of alcohol brief interventions in the various stages of the criminal justice system.

**Design/methodology/approach** – A rapid systematic review of publications was conducted from the year 2000 to 2014 regarding the prevalence of alcohol use disorders in the various stages of the criminal justice system. The second part of the work was a rapid review of effectiveness studies of interventions for alcohol brief interventions. Studies were included if they had a comparison group. Worldwide evidence was included that consisted of up to three hours of face-to-face brief intervention either in one session or numerous sessions.

**Findings** – This review found that 64-88 per cent of adults in the police custody setting; 95 per cent in the magistrate court setting; 53-69 per cent in the probation setting and 5,913-863 per cent in the prison system and 64 per cent of young people in the criminal justice system in the UK scored positive for an alcohol use disorder. There is very little evidence of effectiveness of brief interventions in the various stages of the criminal justice system mainly due to the lack of follow-up data.

**Social implications** – Brief alcohol interventions have a large and robust evidence base for reducing alcohol use in risky drinkers, particularly in primary care settings. However, there is little evidence of effect upon drinking levels in criminal justice settings. Whilst the approach shows promise with some effects being shown on alcohol-related harm as well as with young people in the USA, more robust research is needed to ascertain effectiveness of alcohol brief interventions in this setting.

**Originality/value** – This paper provides evidence of alcohol use disorders in the different stages of the criminal justice system in the UK using a validated tool as well as reviewing the worldwide evidence for short (< three hours) alcohol brief intervention in this setting.

**Keywords** Criminal justice system, Substance abuse, Young offenders, Offender health, Public health, Harm reduction

**Paper type** Literature review

## Introduction

In the UK, 24 per cent of the general population are reported to have an alcohol use disorder, whereas higher rates of alcohol misuse have been found in the criminal justice system (Fazel *et al.*, 2006; Parkes *et al.*, 2011). In 2008, it was estimated that alcohol was a factor in half of all violent crimes in the UK (Flatley *et al.*, 2010) and that there were approximately 950,000 incidents of alcohol-related violence in the previous year (Kershaw *et al.*, 2008). Although the relationship is complex, there is evidence of an association between alcohol use and offending behaviour

(Pernanen, 1991; Plant *et al.*, 2002; Richardson and Budd, 2003; Boden *et al.*, 2012), with an interplay between the amount drunk, the pattern of drinking and the individual and contextual factors (Graham *et al.*, 2012).

In England and Wales, alcohol-related crime is estimated to cost society £11 billion (2010-2011 costs) (Alcohol Team Home Office, 2013). It has been shown that intervening to reduce alcohol use is cost-effective, generating both long- and short-term savings. The UK Alcohol Treatment Trial found that for every £1 spent on evidenced-based interventions for individuals with alcohol problems £5 would be saved to the public sector (UKATT Research Team 2005). It has also been suggested that providing effective treatment is likely to significantly reduce the costs relating to alcohol as well as increase individual social welfare (Raistrick *et al.*, 2006).

In England, in 2013, the commissioning of services for alcohol moved from the criminal justice system to National Health Service England for prisons, and for offenders in the community this now lies with clinical commissioning groups; however, directors of public health have specific duties to improve the health of offenders (Revolving Doors Agency, 2013).

Given the documented links between alcohol and crime, the various stages of the criminal justice system may be an important place to carry out alcohol screening and brief interventions (Graham *et al.*, 2012). Moreover, the criminal justice setting could potentially capitalise upon the “teachable moment” considered to be conducive of behaviour change, wherein individuals can be encouraged to consider their alcohol use within the context of their offending behaviour and its punitive consequences (Babor *et al.*, 1989). Criminal justice practitioners may therefore be well-placed to conduct brief interventions (Newbury-Birch *et al.*, 2009). The aim of this work is to identify the prevalence rates of alcohol use disorders (using Alcohol Use Disorder Identification Test (AUDIT) ranges) in the UK, and the worldwide evidence for effectiveness of alcohol screening, and brief interventions in the criminal justice system.

## Methods

The study was conducted in two parts. A rapid systematic review of publications was conducted from the year 2000 to 2014 regarding the prevalence of alcohol use disorders in the various stages of the criminal justice system. The year 2000 was chosen to ensure that results were relevant to current working in the criminal justice system. A search of electronic databases (PubMed, Scopus, Medline) was undertaken using the terms alcohol, screening, crime (police, probation, court, prison). Search terms were expanded to include variations on these. Grey literature searches were also conducted, including Google Scholar, the Ministry of Justice, Joseph Rowntree Foundation and the Youth Justice Board. Only studies that used the AUDIT screening tool and were conducted in the UK were included. Study quality was assessed using Newcastle Ottawa Scale for cross-sectional studies (Wells *et al.*, n.d.). We included questions relating to selection and outcome with a maximum of 8 points given. Those that scored 0-2 were scored as high risk; 3-6 medium risk and 7+ as low risk (Wells *et al.*, n.d.).

The second part of the work was a rapid review of effectiveness studies of interventions for alcohol brief interventions. Studies were included if they had a comparison group. Worldwide evidence was included that consisted of up to three hours of face-to-face brief intervention either in one session or numerous sessions. This time frame was chosen so as not to bias the results of “brief” interventions with more substantial interventions. Accredited alcohol programmes within the stages of the criminal justice system that did not fit this criterion were excluded from this part of the review. For this work, systematic reviews that have been carried out were searched and relevant studies meeting the criteria were included (Parkes *et al.*, 2011; Graham *et al.*, 2012) and supplemented with articles found from Scopus and grey literature (as above). Any outcome measure was included in the study. Study quality was assessed using the Cochrane risk of bias tool (Higgins *et al.*, 2011). The Cochrane tool looks at six areas; sequence generation; allocation concealment; blinding of participants, personnel and outcome assessors; incomplete outcome data; selective outcome reporting and other sources of bias (Higgins *et al.*, 2011). Bias was assessed as low risk if the plausible bias was unlikely to seriously alter the results; unclear risk if the plausible bias raised some doubt about the results and high risk if the plausible bias seriously

weakened confidence in the results (Higgins *et al.*, 2011). For both studies one researcher checked all the abstracts and titles and a second researcher checked a 20 per cent sample. Two researchers reviewed all full texts and quality assessments.

## Screening for alcohol use in the criminal justice system

It is important to use a validated screening tool when assessing alcohol use disorders. Although there is no specific criminal justice tool for screening for alcohol use disorders, the AUDIT is considered to be the gold standard in health care settings (Hodgson *et al.*, 2002). The AUDIT can be scored between 0-40. A score of 8+ is referred to as a "positive screen" and indicates an alcohol use disorder; hazardous drinking (score of 8-15), harmful drinking (16-19) or probable dependent drinking (20+), with a sensitivity of 92 per cent and specificity of 94 per cent (Saunders *et al.*, 1993). The AUDIT has been shown to be an effective screening tool in the various stages of the criminal justice system (Coulton *et al.*, 2012).

## Brief interventions

Brief intervention is a secondary preventive activity, aimed at individuals who are drinking excessively or in a drinking pattern that is likely to be harmful to their health or well-being. They are a range of interventions that typically consist of between one and four sessions and are frequently between five and 40 minutes. Brief interventions consist of very short sessions including personalised feedback on alcohol intake in relation to recommended limits, discussion of health and social risks and may comprise of a set of personal targets which can include forms of psychological and motivational interviewing (MI). For example, using the FRAMES approach (feedback, responsibility, advice, menu, empathy, self-efficacy) (Miller and Rollnick, 1991). They are typically delivered opportunistically to individuals whose drinking places them at risk of harm and are delivered by practitioners other than addiction specialists.

Brief intervention typically follows a positive screening result. There are two different approaches to brief interventions: brief advice which seeks to raise awareness through the provision of personalised feedback and practical steps on how drinking can be reduced in order to reduce associated risks; and extended brief intervention which generally involves behaviour change counselling, often based upon MI. Sessions can last between 5 and 60 min, and brief interventions for nontreatment-seeking populations do not tend to exceed five sessions in total (Haighton *et al.*, 2013).

The evidence demonstrates the efficacy of alcohol screening and brief intervention in health care settings in reducing alcohol consumption, most notably within the primary-care setting (National Institute for Health and Clinical Excellence, 2010; O'Donnell *et al.*, 2014) as well as some evidence of short-term efficacy in the inpatient setting (McQueen *et al.*, 2011). However, other studies have not shown efficacy or effectiveness between intervention and control conditions (Drummond *et al.*, 2014).

This present study aims to identify the levels of alcohol use disorders in the various stages of the criminal justice system. Second; to narratively review worldwide studies of the effectiveness of alcohol brief interventions (three hours or less) in the various stages of the criminal justice system.

### *Results: prevalence*

In total, 714 articles were screened. Of these 15 articles relating to 17 studies were included (Table I). Reasons for exclusion were studies not carried out in the UK or did not use the AUDIT screening tool. All included studies were convenience samples.

### *Police custody suites*

Five studies were identified relating to the police custody suite setting (Hopkins and Sparrow, 2006; Brown *et al.*, 2010; Barton, 2011; Kennedy *et al.*, 2012; McCracken *et al.*, 2012). Three had a low risk of bias (Hopkins and Sparrow, 2006; Brown *et al.*, 2010; Barton, 2011). One study had a low risk of bias (Brown *et al.*, 2010) and the others an unsure risk of bias.

**Table 1** Prevalence of alcohol use disorders in the criminal justice system in the UK

Author	Setting (% m/f) (n.)	Age	AUD positive	AUD ranges	Quality
Hopkins and Sparrow (2006)	Custody suite (89% male) (n = 805)	Mean age 27	88%	Prob dep (35%)	LR
Brown <i>et al.</i> (2010)	Custody suite (81% male) (n = 229)	29.4 (SD 11.0)	134/176 (76%)	None given	LR
Barton (2011)	Custody suite (85% male) (n = 3,900)	17+	64%	Haz (32%) Harm (11%) Prob Dep (21%)	LR
Kennedy <i>et al.</i> (2012)	Phase 1 – custody suite (83% male) (n = 2,177)	18+	84%	Haz (38%) Harm (11%) Prob Dep (38%)	MR
McCracken <i>et al.</i> (2012)	Phase 2 – custody suite (86% male) (n = 4,739)	18+	85%	Haz (36%) Harm (13%) Prob Dep (37%)	MR
Watt <i>et al.</i> (2008)	Magistrates court (100% male) (n = 269)	Intervention 23.6 (SD 4.7) Control 22.8 (SD 4.6)	95%	Prob Dep (39%)	LR
Newbury-Birch <i>et al.</i> (2009)	Probation (86% male) (n = 262)	18+	M = 157/226 (69%) F = 19/36 (53%)	M-Haz n = 59 (26%) M-Harm n = 20 (11%) M-Prob Dep n = 78 (35%) F-Haz n = 9 (25%) M-Harm n = 1 (3%) M-Prob Dep n = 9 (25%)	LR
Orr <i>et al.</i> (2015)	Probation (85% male) [n = 195]	Mean age 31	116/195 (59%)	Prob Dep n = 34 (17%)	MR
Lader <i>et al.</i> (2000)	Prison – remand (92% male) (n = 339)	16+	M = (62%) F = (13%)	M-Haz (28%) M-Harm/Prob Dep (33%) F-Haz (5%) F-Harm/Prob Dep (8%)	MR
Parkes <i>et al.</i> (2011)	Prison – remand (100% male) (n = 137)	Median 27	93/137 (68%)	Haz n = 33 (24%) Harm n = 13 (10%) Prob Dep n = 47 (34%)	MR
Newbury-Birch <i>et al.</i> (2009)	Prison – remand and sentenced (94% male) (n = 411)	18+	M = 230/387 (59%) F = 15/24 (63%)	M-Haz n = 73 (19%) F-Haz n = 5 (21%) M-Harm n = 16 (4%) F-Harm n = 0 M-Prob Dep n = 141 (36%) F-Prob Dep n = 10 (42%)	LR
Graham <i>et al.</i> (2012)	Prison – remand and sentenced 100% male) (n = 96)	Mean age 30	M = 70/96 (73%)	M-Haz n = 24 (25%) M-Harm n = 41 (43%) M-Prob Dep n = 41 (43%)	LR
MacAskill <i>et al.</i> (2011)	Prison – remand and sentenced (100% male) (n = 216)	18-64	M = 189/216 (73%)	M-Haz n = 71 (27%) M-Harm n = 24 (9%) M-Prob Dep n = 94 (36%)	LR
Lader <i>et al.</i> (2000)	Prison – sentenced (68% male) (n = 250)	16+	M = (70%) F = (51%)	M-Haz (34%) M-Harm/Prob Dep (36%) F-Haz (25%) F-Harm/Prob Dep (25%)	MR
McMurrin and Cusens (2005)	Prison – sentenced (100% male) (n = 126)	30.52 (SD 10.3)	86%	None given	MR
Parkes <i>et al.</i> (2011)	Prison – sentenced (100% male) (n = 122)	Median 27	101/122 (83%)	Haz n = 38 (31%) Harm n = 11 (9%) Prob Dep n = 47 (39%)	MR
Newbury-Birch <i>et al.</i> (2015) (8+ AUDIT)	YP – YOT and prison (85% male) (YOT n = 227; prison n = 184)	11 to 17	64%	Haz (22%) Harm (12%) Prop Dep (30%)	LR
Newbury-Birch <i>et al.</i> (2015) (2+ AUDIT)	YP – YOT and prison (85% male) (YOT n = 227; prison n = 184)	11 to 17	81%	Prob Dep (3+) 77%	LR

Notes: M, male; F, female; AUD, AUDIT positive (8+ on AUDIT); Haz, Hazardous drinking (8-15 on AUDIT); Harm, harmful drinking (16-19 on AUDIT); Prob Dep, probably dependent (20+ on AUDIT); LR, low risk of bias; MR, Medium risk of bias

Results showed that between 64 and 84 per cent scored positive for an alcohol use disorder (Hopkins and Sparrow, 2006; Brown *et al.*, 2010; Barton, 2011; Kennedy *et al.*, 2012; McCracken *et al.*, 2012). Prevalence of probable dependence ranged from a low of 21 per cent (Barton, 2011) to between 35 and 38 per cent (Hopkins and Sparrow, 2006; Kennedy *et al.*, 2012; McCracken *et al.*, 2012).

### Magistrates' court

One study with a low risk of bias was found relating to the magistrates court setting (Watt and Shepherd, 2005; Watt *et al.*, 2008). Of those screened 95 per cent scored positive for an alcohol

use disorder whilst 39 per cent ( $n=105$ ) scored positive for probable alcohol dependence (Watt and Shepherd, 2005; Watt *et al.*, 2008). It is important to note though, that eligibility to be screened was that the participant had been sentenced for a violent offence committed whilst intoxicated with alcohol. This may in part explain the high-prevalence rates of alcohol use disorders within this study.

### **Probation**

Two studies were found in relation to the probation study. Newbury-Birch *et al.* (2009) had a low risk of bias and Orr *et al.* (2015) a medium risk of bias.

Newbury-Birch *et al.* (2009) and Orr *et al.* (2015) found that 67 and 59 per cent, respectively, of offenders scored positive for an alcohol use disorder (Newbury-Birch *et al.*, 2009; Orr *et al.*, 2015). In total, 33 per cent scored positive for alcohol dependence in the Newbury-Birch *et al.* (2009) study whilst 17 per cent scored positive for alcohol dependence in the Orr *et al.* (2015) study.

Newbury-Birch *et al.* (2009) found that 40 per cent of those identified as having an alcohol use disorder were not identified using the tool used in the probation service for identifying alcohol misuse (Offender Assessment System) (Newbury-Birch *et al.*, 2009). This suggests that many offenders within the probation setting will not be identified as having alcohol-related need and as such will not receive an intervention.

### **Prison**

Eight studies from six articles were identified (Lader *et al.*, 2000; McMurrin and Cusens, 2005; Newbury-Birch *et al.*, 2009; MacAskill *et al.*, 2011; Parkes *et al.*, 2011; Graham *et al.*, 2012). Three of the included articles were categorised as low risk (Newbury-Birch *et al.*, 2009; MacAskill *et al.*, 2011; Graham *et al.*, 2012) and three as having a medium risk of bias (Lader *et al.*, 2000; McMurrin and Cusens, 2005; Parkes *et al.*, 2011).

Two studies related to prisoners on remand (Lader *et al.*, 2000; Parkes *et al.*, 2011). Lader *et al.* (2000) showed that 62 per cent of males and 13 per cent of females screened positive for an alcohol use disorder. Parkes *et al.* (2011) found that 68 per cent of prisoners scored positive for an alcohol use disorder (Parkes *et al.*, 2011). Lader *et al.* (2000) did not identify possibly dependent ranges separately. Parkes *et al.* (2011) found that 34 per cent screened positive for probable dependency (Parkes *et al.*, 2011).

Three studies included prisoners and remand and those sentenced. Newbury-Birch *et al.* (2009) found that 59 per cent of males and 63 per cent of females screened positive for an alcohol use disorder and 36 per cent of males and 42 per cent of females screened positive for alcohol dependence (Newbury-Birch *et al.*, 2009). Graham *et al.* (2012) and MacAskill *et al.* (2011) both found that 73 per cent scored positive for an alcohol use disorder (Parkes *et al.*, 2011; Graham *et al.*, 2012). Levels of probable dependence were 43 per cent in the Graham *et al.* (2012) and 36 per cent in the MacAskill *et al.* (2011) study.

In relation to offenders sentenced to prison; three studies were found (Lader *et al.*, 2000; McMurrin and Cusens, 2005; Parkes *et al.*, 2011). Lader *et al.* (2000) found that 70 per cent of males and 51 per cent of females scored positive for an alcohol use disorder (Lader *et al.*, 2000). McMurrin and Cusens (2005) and Parkes *et al.* (2011) found that 86 and 83 per cent scored positive for an alcohol use disorder, respectively. Lader *et al.* (2000) and McMurrin and Cusens (2005) did not measure probable dependency whilst Parkes *et al.* (2011) found that 39 per cent scored positive for probable dependence (Parkes *et al.*, 2011).

### **Young people**

Knight *et al.* (2003) have shown that the AUDIT score for use with young people (under the age of 18) should be a lower cut-off to indicate an alcohol use disorder (Knight *et al.*, 2003). Two studies from one article with a low risk of bias was identified relating to young people (Newbury-Birch *et al.*, 2015).

Newbury-Birch *et al.* (2014) surveyed young offenders aged between 11 and 17 on community orders through Youth offending Teams and Youth Offending Institutions in 2008 (Newbury-Birch *et al.*, 2015). Using the AUDIT cut-off 8+, 64 per cent scored positive for an alcohol use disorder and 30 per cent scored possible for probable dependence (20+). When using adolescent cut-offs with the AUDIT of 2+ for an alcohol use disorder (Knight *et al.*, 2003); 81 per cent of the sample scored positive whilst 77 per cent scored 3+ on the AUDIT which has been shown to show probable dependence with young people (Knight *et al.*, 2003). Furthermore, the study showed that the tool used at present for identifying alcohol issues for young people in the criminal justice system (ASSET) did not identify 30 per cent of the young people with an alcohol use disorder (Newbury-Birch *et al.*, 2015).

## Results: interventions

Ten articles were identified from Parkes *et al.* (2011) and Graham *et al.* (2012) and from subsequent searches relating to the effectiveness of alcohol brief interventions (Table II). Because of the heterogeneity of the included studies it was not possible to carry out meta-analyses.

### *Police custody suites*

Two articles from two phases of the same trial were found (Kennedy *et al.*, 2012; McCracken *et al.*, 2012). Both were found to have a high risk of bias.

*Focus.* A scheme to deliver brief interventions (less than 30 minutes) in custody suites after the arrest, or in a noncustody venue, was carried out across 12 police forces in the UK between 2007 and 2010 (Blakeborough and Richardson, 2012) in two phases (Kennedy *et al.*, 2012; McCracken *et al.*, 2012). Both phases used a matched control group and looked at arrest data differences.

*Effect.* No statistically significant differences were found for reoffending at either of the two phases (Kennedy *et al.*, 2012; McCracken *et al.*, 2012).

### *Magistrates' court*

One study of low risk of bias was found in relation to the magistrates' court setting (Watt and Shepherd, 2005; Watt *et al.*, 2008).

*Focus.* Watt *et al.* (2008) carried out a randomised controlled trial (RCT) that compared a control condition of usual care ( $n = 134$ ) to a single 15-20 minute manualised session of brief intervention ( $n = 135$ ) in a Cardiff magistrates' court (Watt *et al.*, 2008). The interventions were based on the works of Miller and Rollnick (1991).

*Effect.* No significant findings were found in any of the alcohol measures (AUDIT or number of drinking days or total number of standard weekly units of alcohol) or reoffending.

### *Probation*

Two studies were found from the UK related to the probation setting (Newbury-Birch *et al.*, 2014; Orr *et al.*, 2015). Newbury-Birch *et al.* (2014) had a low risk of bias and Orr *et al.* (2015) a high risk of bias.

*Focus.* Orr *et al.* (2015) conducted a pilot RCT with offenders given probation or community service orders in Scotland (Orr *et al.*, 2015). In total, 82 offenders were randomised (no information on randomisation group was given for 11 offenders). Newbury-Birch *et al.* (2014) carried out a pragmatic cluster RCT of the effectiveness of two different brief intervention strategies compared to a control condition of feedback on screening outcome and a client information leaflet at reducing hazardous or harmful drinking in the English probation setting (Newbury-Birch *et al.*, 2014). Offender managers were recruited across three geographical regions of England; the North East, South East and London. Offender managers were

**Table II** Brief intervention studies in the criminal justice system

Author (country); study type	Setting; % male/female	Interventions (number randomised)	Follow-up period	Follow-up rates	Results	Quality
Kennedy <i>et al.</i> (2012) UK	Phase 1: police custody suite 83% male	Intervention: 1-3 sessions of MI (up to 60 mins) ( <i>n</i> = 1,053) Control: matched control group ( <i>n</i> = 2,070)	6 months	na	No statistically significant differences were found in relation to numbers of arrests between groups	HR
McCracken <i>et al.</i> (2012) UK	Phase 2: police custody suite 86% male	Intervention: 1-3 sessions of MI (up to 60 mins) ( <i>n</i> = 4,739) Control: matched control group ( <i>n</i> = 4,711)	6 months	na	No statistically significant differences were found in relation to numbers of arrests between groups	HR
Orr <i>et al.</i> (2015)	Probation	Intervention: 1 session of MI (15 mins) ( <i>n</i> = 28)	3 months	15%	No results could be ascertained because of the low-response rates at 3 and 6 months	HR
Scotland Newbury-Birch <i>et al.</i> (2014)	85% male Probation	Control: feedback and a leaflet ( <i>n</i> = 43) Intervention 1: 1 session of brief advice (5 mins) ( <i>n</i> = 178). Intervention 2: 1 session of brief advice (5 and 20 mins of MI) ( <i>n</i> = 163)	6 months 6 months	10% 68%	At both time points, there was no significant advantage of more intensive interventions compared with the control group in terms of AUDIT status. Those in the brief advice and brief lifestyle counselling intervention groups were statistically significantly less likely to reoffend (36 and 38%, respectively) than those in the client information leaflet group (50%) in the year following intervention	LR
(UK) RCT Watt <i>et al.</i> (2008)	85% male Magistrates Court	Control: feedback and leaflet ( <i>n</i> = 184) Intervention: 1 session of MI (15-20 mins) ( <i>n</i> = 135)	12 months 3 months	60% 87%	Injury was significantly less likely in the intervention group (27.4%) than the control group (39.6%); 95% confidence interval (CI) = -0.23, -0.009). At 3-month follow-up, significantly more in the intervention group (31%) than control group (16%) showed an increase in their readiness to change drinking behaviour ( $\chi^2 = 8.56$ ; <i>df</i> = 2; <i>p</i> = 0.014), but not at 12-month follow-up	LR
(Wales) RCT Davis <i>et al.</i> (2003)	100% male Prison	Control: treatment as usual ( <i>n</i> = 134) Intervention: 1 session of MI (60 mins) ( <i>n</i> = 36)	12 months 2 months	75% 41%	Those in the intervention group were statistically more likely to schedule appointments at a veteran clinic with 60 days (67 vs 41% <i>p</i> < 0.03). The study was underpowered	UR
USA; RCT Stein <i>et al.</i> (2010)	Unknown Prison/jail	Control: treatment as usual and information on local services ( <i>n</i> = 37) Intervention: 2 sessions of MI (45-60 mins): second session after the first follow-up ( <i>n</i> = 125)	1 month	76%	Intervention effects on abstinent days was statistically significant at 3 months (odds ratio = 1.96, 95% CI 1.17, 3.30). Not significant at 6 months	LR
USA; RCT	100% female	Control: treatment as usual ( <i>n</i> = 120)	3 months 6 months	79% 79%		

(continued)

**Table II**

Author (country); study type	Setting; % male/female	Interventions (number randomised)	Follow-up period	Follow-up rates	Results	Quality
Begun <i>et al.</i> (2011)	Local jails	Intervention: 1 session of MI (60-90 mins) ( $n = 468$ )	2 months post-release	20%	Mean reduction in AUDIT score from baseline to follow-up were greater in the in intervention group ( $F(1, 148) = 6.336, p \leq 0.001$ )	UR
USA; RCT	100% female	Control: treatment as usual ( $n = 261$ )				
Stein <i>et al.</i> (2011a)	Juvenile correctional facility	Intervention: 2 sessions of MI (90 mins) at baseline and 60 min booster session	3 months	98%	No statistically significant differences were found in relation to alcohol consumption between groups	LR
USA; RCT	86% female	Control: 2 sessions of relaxation training				
Stein <i>et al.</i> (2011b)	Juvenile correctional facility	Intervention: 2 sessions of MI (session 1 = 90 mins; session 2 = 60 mins)	3 months	83%	The intervention group showed a 65.0% reduction in % of days they drank more than five drinks compared to the control group (20.8%). For adolescents low in depressive symptoms early in incarceration, the intervention group showed a 32.1% reduction in drinks per drinking day and a 55.3% reduction in % of days used marijuana; compared to the control group that showed reductions of 4.6% and 33.0%, respectively	LR
USA RCT	84% male	Control: 2 sessions of relaxation training (session 1 = 90 mins; session 2 = 60 mins)				

**Notes:** LR, low risk of bias; UR, unsure risk of bias; HR, high risk of bias

randomised to one of three interventions, each of which built on the previous one; feedback on screening outcome and a client information leaflet control group, five minutes of structured brief advice, and 20 minutes of brief lifestyle counselling.

*Effect.* In the Orr *et al.* (2015) study only 22 per cent ( $n = 16$ ) of the sample were followed up, therefore, no effectiveness data were available (Orr *et al.*, 2015). Follow-up rates were 68 per cent at six months and 60 per cent at 12 months for Newbury-Birch *et al.* (2014). At both time points there was no significant advantage of more intensive interventions compared to the control group in terms of AUDIT status. Those in the brief advice and brief lifestyle counselling intervention groups were statistically significantly less likely to reoffend (36 and 38 per cent, respectively) than those in the client information leaflet group (50 per cent) in the year following intervention. However, all participants in the control group received feedback on their score. The authors conclude that brief advice or brief lifestyle counselling provide no additional benefit in reducing hazardous or harmful drinking compared with feedback on screening outcome and a client information leaflet (control).

### *Prison*

There has been no effectiveness studies of alcohol screening and brief intervention carried out in the prison system in the UK. Three studies were found from the USA (Davis *et al.*, 2003; Stein *et al.*, 2010; Begun *et al.*, 2011). Stein *et al.* (2010) showed a low risk of bias whereas the other two had an unsure risk of bias.

*Focus.* Davis *et al.* (2003) carried out an RCT of veterans in a USA county jail. Participants were recruited in the month prior to leaving jail. Despite various attempts to contact people at the two-month follow-up period, only 41 per cent of participants were followed up. An RCT to evaluate brief intervention for alcohol use and risky sexual behaviour among women in a prison in the USA was carried out by Stein *et al.* (2010). Women were eligible for the trial if they had consumed alcohol at a hazardous level (four or more drinks on at least three occasions in the previous three months or identified as a hazardous drinker in the past year using the AUDIT) and if they had recently engaged in risky sexual behaviour. The first session of MI was delivered in prison with the second taking place approximately one to three months after leaving prison. Participants were followed up at three and six months.

*Effect.* In the Davis *et al.* (2003) study no differences were found between groups for any alcohol measures. Those in the intervention group were more likely to schedule appointments at a veterans' addiction clinic following their release (31 vs 14 per cent;  $p < 0.08$ ) (Davis *et al.*, 2003). Stein *et al.* (2010) found that participants randomised to MI had significantly fewer drinking days (OR = 1.96, 95 per cent CI 1.17, 3.30) and reported fewer alcohol-related problems at three months ( $b = -4.96$ , 95 per cent CI  $-8.91, 1.02$ ,  $p < 0.05$ ). Although, this effect was not maintained at six month follow-up. There was no significant difference between participant groups for the number of drinks consumed per drinking day. The study suggests that brief MI may be effective at reducing the frequency of alcohol use in the short term but further sessions may be necessary to maintain the effect in the longer term. Because of a low-response rate (20 per cent) Begun *et al.* (2011) could not test any effectiveness of the intervention. The lack of a pure control group (with no active ingredients) is an issue that is faced in criminal justice research and work in the health setting, primarily because of ethical arrangements for research (Kaner *et al.*, 2013; Drummond *et al.*, 2014).

### *Young people*

No studies were found relating to young people in the UK. Two studies with a low risk of bias were found from the USA (Stein *et al.*, 2011a, b).

*Focus.* Two studies have been carried out looking at two sessions of MI compared to relaxation therapy for young people in juvenile correctional facilities (Stein *et al.*, 2011a, b). The RCTs were designed to evaluate the effects of depressive symptoms on reducing alcohol and marijuana use (Stein *et al.*, 2011a, b).

*Effect.* Stein *et al.* (2011a) did not find any significant effects between groups. Stein *et al.* (2011b) found that participants who received MI reported a significantly lower average number of alcoholic drinks consumed per day, a lower percentage of heavy drinking days, and a lower percentage of days where more than five drinks were consumed at three months post-release. Participants were automatically enrolled in the facility's substance misuse treatment programme, which involved two hours per week of psycho-education for substance use over a period of eight weeks. It is unclear if this contributed to the results (Stein *et al.*, 2011b).

## Discussion

It could be argued that the stages in the criminal justice system described above are analogous to the health care system. Police stations are busy and chaotic very like accident and emergency departments. Probation is similar to primary care, appointments made and an emphasis on dealing with the underlying issues, whereas prison is similar to hospital wards in as much as often the person is there for a period of time.

In order to compare levels of alcohol use disorders across settings and compare to the general population we only included studies that used the AUDIT which is a limitation to the work. Although the AUDIT has been shown to be an effective tool in the criminal justice system (Coulton *et al.*, 2012) it is possible that individual score higher on question 9 (have you or somebody else been injured as a result of your drinking?) and question 10 (has a relative or friend, doctor or other health worker been concerned about your drinking or suggested that you cut down?) could increase an individual scores for individuals in the criminal justice system.

This review consisted of rapid review of the literature and found levels of alcohol use disorders in the UK are very high at all stages in the criminal justice system for adults and young people and disproportionately higher than the 24 per cent found in the general population (NHS Information Centre for Health & Social Care, 2009). Using the AUDIT screening tool, between 64 and 88 per cent of individuals in the policy custody setting had an alcohol use disorder. In the magistrates court this was 95 per cent; 53-69 per cent in the probation setting and between 13 and 86 per cent in the prison system. In relation to dependence, between 21 and 38 per cent of individuals were shown to have probable alcohol dependence in the police custody suite setting; 39 per cent in the magistrate court system; 17-35 per cent in the probation setting and between 34 and 43 per cent in the prison system. This compares to 6 per cent in the general population (NHS Information Centre for Health & Social Care, 2009). Furthermore, for young people, levels of alcohol use disorder are high (64 per cent) and levels of probable dependence are also high (30 per cent) using adult cut-offs. These high levels of alcohol use disorders and probable alcohol dependence indicate high levels of need in the criminal justice system in the UK and indicates that there are different needs at different points in the system. More work is needed to understand why the levels are different across the different points in the criminal justice system.

Although the evidence base relating to prevalence rates in the criminal justice system in the UK is growing, to date there is very little evidence of either efficacy or effectiveness studies of alcohol brief interventions in the criminal justice system in the UK. There have been no studies to date in the prison system in the UK. This is primarily because of the issues related to when and how you measure alcohol consumption when someone is incarcerated for a long period of time. The studies that have been carried out in the UK in other criminal justice areas have shown no effect on reduced drinking (Watt *et al.*, 2008; Newbury-Birch *et al.*, 2014). However, effects relating to fewer injuries have been shown and there is some promising work with young people in the USA (Stein *et al.*, 2011a). Furthermore, the Screening and Brief Intervention Programme work in the probation setting has shown promising results in relation to reoffending rates being lower in the year post-intervention, however, more robust evidence is needed in relation to all stages in the criminal justice system. The lack of good evidence is due to a number of issues including some staff reporting they are too busy to carry out alcohol screening and brief interventions (Brown *et al.*, 2010; Newbury-Birch *et al.*, 2014) although some studies have indicated that staff do consider

screening and brief interventions for alcohol to be part of their role in the criminal justice system (Brown *et al.*, 2010; Newbury-Birch *et al.*, 2014; Orr *et al.*, 2015). Moreover, more work is needed to understand who are the best people in each of the criminal justice settings to deliver screening and brief interventions.

Research studies have also shown that it is very difficult to follow-up with participants due to their sometimes chaotic lifestyles (Orr *et al.*, 2015). Issues related to low follow-up rates could be addressed by researchers considering using outcome measures that do not rely on following up individual participants. These could include using police data (arrest and charge) or conviction data as the main outcome measure as well as looking at data linkage with health data. This, however, does not provide any self-reported alcohol data, which itself is an issue when evaluating the effectiveness of brief interventions in the criminal justice system, as this does not allow for measurement of individual alcohol use disorder. The studies included in this review used a mixture of health and criminal justice outcomes, both self-reported and computerised data. It is important to work with criminal justice agencies to identify what the most appropriate outcome should be. However, it is important to note that the criminal justice systems main success criteria is reducing recidivism and, therefore, using reoffending data as the main outcome measure may be more in line with their work.

Evidence tells us that interventions that target high-risk offenders, which are intensive, work best for reducing recidivism (Andrews and Bonta, 2010) and these are where the resources are being placed. However, criminal justice agencies are currently advocating the use of alcohol screening and brief interventions. The results of this review have shown that levels of alcohol use disorders are high in the UK and there is some evidence of effectiveness in some settings but there is not enough evidence yet to tell us that they will not do any harm. There is no doubt that more robust research studies, at all stages in the criminal justice system in the UK for adults and young people are needed before the evidence of effectiveness of alcohol brief interventions can be ascertained and to understand whether brief interventions can work and for who.

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