DRUG & ALCOHOL FINDINGS *Review*

*analysis*



This entry is our analysis of a review or synthesis of research findings considered particularly relevant to improving outcomes from drug or alcohol interventions in the UK. The original review was not published by Findings; click Title to order a copy. Free reprints may be available from the authors – click prepared e-mail. The summary conveys the findings and views expressed in the review. Below is a commentary from Drug and Alcohol Findings.

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## ▶ Effectiveness of brief alcohol interventions in primary care populations.



**Kaner EFS., Beyer FR., Muirhead C. et al.**

**Cochrane Database of Systematic Reviews, 2018**

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*Update of a key document forming the basis of claims that brief interventions work in 'real-world' settings. Combined findings from randomised trials confirm that brief advice in primary care can reduce drinking, but will those reductions be realised in contemporary routine practice?*

**SUMMARY** This is an update of a review published in 2007 (see Effectiveness Bank entry) conducted under the rigorous procedures specified by the Cochrane Collaboration, with an additional 42 studies selected for inclusion (of 61 total). Compared to the earlier review, there was less of a focus on the difference in outcomes between the more tightly controlled 'efficacy' trials and the more real-world tests characterised as 'effectiveness' trials (▶ Skip to relevant section).

The aim was to assess the effectiveness of brief interventions – typically counselling or advice on risky behaviours, delivered in five to 30 minutes – in reducing excessive drinking in hazardous or harmful drinkers in general practice and emergency care settings. It did so by analysing the outcomes of randomised controlled trials involving primary care patients who while not seeking treatment for alcohol problems, were identified as risky drinkers and offered a brief intervention intended to reduce drinking or alcohol-related problems. Participants were all identified through screening as drinking to excessive levels, or experiencing harm as a result of their drinking behaviour. On average they drank 244 g of alcohol a week, equivalent to 30 UK units [lower than the previous review's average of 310 g of alcohol a week or nearly 39 UK units].

### Key points
**From summary and commentary**

The featured review aimed to assess the effectiveness of brief interventions in reducing heavy drinking.

There was moderate-quality evidence that brief interventions, delivered in general practice and emergency care settings, can reduce alcohol consumption in hazardous and harmful drinkers.

As was the case in an earlier 2009 review, the issue now is whether in normal practice supposed benefits will be realised on a grand enough scale to create public health gains.

Most of the trials compared a brief intervention with minimal or no intervention (88%), and were set in general practice (55%) or emergency care (39%).

## Main findings

The primary analysis was a meta-analysis which amalgamated the results of 34 studies totalling 15,197 participants, and measured the effects of brief interventions on quantity of alcohol consumed per week. From this there was moderate-quality evidence that after one year, participants assigned to receive a brief intervention consumed on average 20 g per week less alcohol than participants assigned to minimal or no interventions. However, there was evidence

that this result had been influenced by the analysis disproportionately missing trials which found little or no intervention effect.

On average the reduction in weekly drinking attributed to the brief intervention was greater in trials set in primary care practices than in emergency departments (26 g per week versus 10), but after adjusting for year of publication there remained no significant difference in effect between the two settings. When some kind of alcohol advice or information (eg, a leaflet) had been provided to patients in the comparison group, the 20 g a week advantage for brief interventions fell to 13 g a week.

There was also moderate-quality evidence that brief alcohol interventions had a very small impact on frequency of episodes of 'binge drinking' per week and drinking days per week, no impact on drinking intensity, and moderate-quality evidence of little difference in impacts on quantity of alcohol consumed between extended and minimal interventions.

Five studies offered what was judged very low-quality evidence about possible adverse effects. In two there were no reported adverse effects, in one the intervention was followed by increased episodes of binge drinking among women, and in two there were reports of adverse events related to driving outcomes, but these were no worse among participants assigned to the evaluated intervention versus to minimal or no interventions.

Overall, both men and women experienced significant benefits of brief intervention, with no significant difference in the treatment effect between the sexes.

A total of 20 studies reported a measure of alcohol-related harm. Differences in the way harm was measured were said to preclude a synthesis of these findings, but it was noted that in 16 of the 20 trials the intervention generated no significant reduction in harm compared to control group patients.

### 'Efficacy' versus 'effectiveness'

Trials were scored on a spectrum from 'efficacy' to 'effectiveness':
• Studies scoring very low were considered most indicative of efficacy trials, which test interventions under relatively optimal or ideal conditions such as with expert, well trained staff, and selected subjects.
• Studies scoring at the high end were considered most indicative of effectiveness trials, which represent more clinically-relevant and real-world tests of interventions.

Efficacy–effectiveness scores ranged from 4.5 to 12. Half the studies which could be included in the analysis scored below 8.5 and half above. The former were considered the less 'real-world' efficacy trials, the latter the more 'real-world' effectiveness trials. Unchanged from the previous review, the most 'real world' trial was a 2006 nurse-led brief intervention.

Based on the quantity of alcohol consumed at 12 months, there was no significant difference between the pooled findings of efficacy trials versus effectiveness trials:
• The 18 efficacy trials (8106 participants) showed benefits of brief interventions; participants in the intervention groups drank 14 g/week less than participants receiving minimal or no intervention.
• Across the 16 effectiveness trials (7091 participants), intervention participants drank 27 g/week less than participants receiving minimal or no intervention.

However, with each increase in efficacy–effectiveness score, the average difference between intervention and minimal or no intervention increased by 4.1 g; trials that were more clinically representative tended to demonstrate greater effectiveness.

### 'Efficacy' and 'effectiveness' trials

Efficacy trials are more likely than effectiveness trials to recruit participants who share similar characteristics, and to involve practitioners more skilled in delivering alcohol interventions or behavioural change work than generalists working in routine primary care. They may also occur in specialist healthcare or university settings, and be resourced, supported and closely monitored in such a way that the interventions are delivered precisely as intended.

In contrast, effectiveness trials are closer to a real world situation and more representative of routine clinical practice, tend to have a broader range of participants, involve clinicians who routinely work in primary care, and allow more flexibility in the way the intervention is delivered.

### Duration and intensity

Further (and less robust) analyses suggested that people receiving an extended intervention may reduce their consumption compared to participants receiving minimal or no intervention at 12 months, but provided no evidence that extended interventions reduce consumption any more or less than brief interventions. They were based on much smaller groups of participants than the main meta-analysis and may be confounded by the fact that attendance at multiple sessions was not always reported (ie, participants may not all have received a full 'extended' intervention). Extended interventions differed from brief interventions not only in terms of contact time with participants but also because they were more likely to involve counselling (shorter interventions may 'draw on' counselling techniques but are likely to be too short to make full use of them).

Assessing the impact of both duration and type of intervention (advice or counselling) on drinking outcomes, the reviewers found little evidence of a link between treatment exposure time and reported alcohol consumption, which would seem to support the finding above suggesting that there is little difference in impact between brief and extended intervention approaches, and found that counselling-based interventions, despite being more intensive and providing more contact with participants, may be associated with smaller reductions in consumption than advice-based interventions.

Taken together, these additional analyses suggest little evidence of a 'dose–response' effect – whereby the greater the exposure to treatment, either in terms of duration or intensity of intervention, the greater the effect.

## The authors' conclusions

This review identified moderate-quality evidence that brief interventions can reduce alcohol consumption in hazardous and harmful drinkers compared to minimal interventions or no intervention, and found that longer or more intensive interventions have little extra effect on outcomes. Like the previous review, it also found no significant difference in intervention outcomes between 'efficacy' and 'effectiveness' trials.

**COMMENTARY** Like its predecessor, the featured review raised questions about whether benefits observed in trials translate to real-world practice, and whether those benefits will be realised on a grand enough scale to create public health gains. A big gap was its inability to come to a conclusion about the effect of brief interventions on alcohol-related harm, ultimately the outcome targeted by brief intervention programmes. It mean the review could offer no reassurance that small drinking reductions associated with brief interventions have any clinical significance in terms of preventing ill health. When this was measured, in 16 of 20 trials no significant effect was found on alcohol-related problems, and in two others, only fleeting reductions.

The earlier (2007) review was an important document in the field, providing a benchmark for the effectiveness of brief interventions which was fed into cost-effectiveness calculations intended to influence national policy. At the time of the previous version of the review, that benchmark was a reduction in drinking amounting to 38 g a week. Collecting its evidence 11 years later, in the featured review that had nearly halved to 20 g a week. Part of the reason was a significant tendency for studies published most recently to record lesser effects. In fact, by 2015 the 'best fit' graph of this tendency suggested studies were on average finding zero effect. A number of credible explanations were given for this tendency, but it does mean that contemporary practitioners should have much less confidence than their predecessors that diverting the scarce resource of time to brief interventions is worthwhile.

The earlier review also formed the basis for the reassuring assertion that brief interventions not only work in the unrealistic context of a tightly controlled research study with expert, well-trained staff, and selected participants, but also in the less controlled context of routine primary care. The verdict that the research *would* generalise to routine practice rested largely on the finding that impacts in

the more real-world trials did not significantly differ from those of the more tightly controlled trials. However, the Effectiveness Bank analysis (and in greater detail the background notes) of the review cast considerable doubt over whether the average drinking reduction seen in the trials would be replicated if the interventions were 'scaled up' to practices in general, and applied by the general run of doctors to the general run of patients. In essence, after combing through the studies labelled the most indicative of routine practice, it asked whether they were indeed 'real-world' or just *relatively* real-world within the evidence base.

The featured review, which admittedly had less of a focus on efficacy–effectiveness, also found no significant difference between the pooled findings of efficacy trials versus effectiveness trials. Despite an additional 42 studies being considered, what was judged to be the most real-world trial (rated 12 on the scale) remained unchanged. In this nurse-led brief intervention only a quarter of the practices approached were recruited and just over 1 in 10 contributed data to the analysis, suggesting that the results may not be reflective of what would happen in a practice less motivated or less well placed to get involved in, and complete, a brief intervention trial.

Closely behind was an opportunistic screening and brief intervention delivered in emergency departments by clinicians, rated 11.5. This study revealed large differences in screening rates – one clinician screening 700 attendees, and others, none – which the authors acknowledged may have been affected by the requirement of the research (not the intervention itself) to obtain consent from patients to participate if they screened 'positive' for risky drinking.

Seven trials were rated 11 on the efficacy–effectiveness scale, two of which were acknowledged in the extensive background notes prepared for the previous review:
• One study, which selected practices from among those affiliated to a special health promotion network, was only able to gain data from under a quarter of the doctors it recruited, and able to follow up half of the patients they saw.
• Another selected its practices on the basis of their expressed interest in alcohol research; screening and assessment was conducted by a researcher; the results were used in the intervention; and around a third of patients could not be followed up.

Regarding the five new additions rated as being indicative of clinically-relevant (effectiveness) trials:
• The SIPS study (1 2), led by the primary author of the featured review, was intended to be the definitive test of brief interventions in England. To maximise real-world applicability, usual staff were designated to undertake screening and intervention, with the exception of lifestyle counselling, which in probation and emergency departments was delegated to a specialist alcohol worker and presumed to mimic what would happen routine practice. Usual staff also undertook the research tasks involved in recruiting patients to the trial and collecting baseline information. Despite these strengths as an effectiveness trial, the fact that the average practice identified just two risky drinkers per month suggests implementation problems and/or considerable selectivity in the recruitment of patients to the trial.
• The generalisability of the results of a brief motivational intervention in primary care in Thailand was limited by a failure to report the total number of people screened, from which 126 participants were then recruited, and the brief intervention itself being unusually composed of three scheduled sessions.
• Although doctors delivered the brief interventions in Project SHARE (Senior Health and Alcohol Risk Education) (3 4), a specialist health educator (a role perhaps not widely found or resourced in primary care) provided follow-up telephone counselling, including assessment and direct feedback, negotiation and goal setting, behavioral modification techniques, self-help-directed bibliotherapy, and reinforcement among patients after the initial assessment, then at three months, and six months.
• In a self-declared 'pragmatic' trial, a term indicating measurement of the

benefits of an intervention in routine clinical practice, participating doctors were self-selected and therefore likely to have had higher levels of motivation than usual.
• Recruitment in another trial (5 6 7) was limited to five health care providers that served a predominantly employed population with health benefits through medical insurance, limiting generalisability.

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