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▶ [Web-based alcohol screening and brief intervention for university students: a randomized trial.](#)

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Findings from this multi-university trial in New Zealand seem an example of 'real world' trials of brief alcohol interventions as they would be implemented in routine practice failing to match promising findings from trials conducted in more ideal circumstances.

SUMMARY Web-based alcohol screening and brief intervention has been suggested as a way to reach large numbers of young people, and systematic reviews suggest it might reduce risky drinking. Several trials have been conducted among university students, but most in conditions divorced from the way such programmes would be implemented in practice (eg, in psychology classes rather than as part of a routine, university-wide prevention programme) and no large, multi-site trials have tested the robustness of effects across differing student drinking cultures. The featured study addressed these research gaps by conducting a trial of web-based alcohol screening and brief intervention at seven of New Zealand's eight universities. To make the findings more relevant to practice, the trial employed procedures within the reach of routine programmes. [Another arm](#) of the study had focused on Maori students; the featured trial focused on the remaining 90% of students in New Zealand who do not identify as Maori.

In 2010, over the internet 5,135 students aged 17 to 24 agreed to join the trial from the 14,991 invited to participate. The vast majority of the remainder refused, despite the opportunity to win a high-value supermarket voucher or a tablet computer. Respondents were directed to a web-based questionnaire which included the three questions of the [AUDIT-C](#) screening test for hazardous and harmful drinking, a shortened version of the 10-item [AUDIT screening questionnaire](#). The abbreviated test is known as AUDIT-C because ('C' stands for 'consumption') these are the questions directly about how much and how often someone drinks.

The 3,422 respondents who scored four or more [[indicative](#) of at least heavy or hazardous drinking] and remained in the study were randomly assigned to the [control](#) group who received no further assessment or intervention, or to the group offered the intervention on trial.

To further assess the severity of their drinking, the intervention group only were then asked the remaining seven questions of the full AUDIT questionnaire and the 10 questions of the Leeds Dependence Questionnaire. The [web-based intervention](#) then gave the respondent (99% of the students opened the relevant web page) personalised feedback (see this [example](#)) consisting of: their scores on these two tests; associated health risks and how to reduce those risks; an estimated blood alcohol level for their heaviest drinking episode in the last four weeks, with information on the behavioural and physiological consequences of various levels and the risk of a motor vehicle accident; estimates of monthly expenditure; bar graphs comparing their episodic and weekly consumption with that of other students and the general population of the same age and sex; and hyperlinks for help with drinking problems. Optional web pages offered facts about alcohol, tips for reducing the risk of harm, and information on where to find medical help and counselling. Nearly 60% of study participants were women, and they averaged 20 years of age and about 7 out of 12 on the AUDIT-C test.

Five months later all participants were sent a link to a follow-up questionnaire on their drinking over the past four weeks and on related problems they had experienced as a student, which 83–84% of both control and intervention students completed.

Main findings

Outcome measures were: number of days of drinking; number of standard drinks (10g alcohol) on a typical occasion; average weekly consumption; problem score; and whether the participant had been drinking above recommended limits for avoiding acute risks such as accidents, or chronic risks such as liver disease.

All these measures favoured the intervention students, but only slightly, and (once the criterion had been adjusted to account for the multiple chances of finding a significant result) the only statistically

Key points

This real-world trial of computer-based brief intervention involved seven of New Zealand's eight universities and used screening and intervention procedures feasible in normal practice.

Despite incentives and reminder emails, just a third of students participated in the trial and were randomly allocated to screening only or this plus the brief intervention.

At follow-up five months later, all alcohol-related measures favoured the intervention students, but only slightly and the differences were generally not statistically significant.

The study seem an example of a 'real world' trial of a brief intervention as it would be implemented in routine practice producing findings less favourable than from trials conducted in more ideal circumstances.

been adjusted to account for the multiple chances of finding a significant result) the only statistically significant difference was in the amount of alcohol drunk on a typical occasion – averaging four drinks for intervention group students but five for those in the control group. This finding (and other non-significant differences) might have been due to differences between control and intervention groups in the drinking levels of the students who did not complete the follow-up questionnaire. Non-significant relative reductions among the intervention students included 43% versus 44% at risk of acute forms of harm and 14% versus 15% at risk of chronic forms.

The age, sex, or initial drinking level of the student made no difference to whether the intervention was more effective than screening alone, though it might have been more effective at some universities than others.

The authors' conclusions

Among university students in New Zealand, web-based alcohol screening and brief intervention resulted at best in a small reduction in the amount consumed on a typical drinking occasion, but not in other alcohol consumption measures or in related problems. The findings underline the importance of pragmatic, real-world trials to inform preventive medicine. They indicate that web-based alcohol screening and brief intervention should not be relied on alone to address unhealthy drinking in this population, but should be used in conjunction with effective environmental interventions, such as restricting the availability and promotion of alcohol.

There generally negative results contrast with the more positive results among Maori students of the [companion trial](#) of the same intervention run at the same time and places using identical study procedures, and with those of an [earlier trial](#) of a similar intervention at a single Australian university, which incorporated 'booster' feedback one month after the initial intervention. Results were more similar to those of a [Swedish trial](#) which tested a similar intervention also under real-world conditions and with a large sample, and found little difference between drinking outcomes after assessment, after assessment plus a brief intervention, or after neither [more on this trial in the [commentary](#)]. The interpretation of this pattern of results could be that the more real-world the trial, and the broader its sampling of students, the less likely it is to find brief intervention over the web reduces drinking or related problems. Results among Maori students in the companion to the featured trial could be due to their group identity as a minority in the university setting, so one perhaps more responsive to feedback about how far an individual's drinking exceeds the norm.

FINDINGS COMMENTARY A [commentary](#) accompanying the featured article explained the study's significance: incorporating seven of New Zealand's eight universities, it was "as near to a real-world evaluation in a population of university students as is likely to be achieved". As such it reinforced [concerns](#) about whether – as implemented in routine practice – brief intervention can reduce the burden of alcohol-related harm across an entire population. However, the 'intervention' in this case (see [this example](#)) was largely feedback of assessment results with little advice on what to do about this and no interactive elements to bolster motivation or commitment to change. A more extensive intervention might have been more effective, but might also have been skipped by more students. As the authors argue, reducing the affordability and availability of alcohol for students [seems](#) a more promising strategy than seeking to persuade them that their drinking is harmful or atypically heavy.

The first striking thing about the trial is that despite incentives and reminder emails, just a third of students participated. Outside the context of a study more might have done, but this seems to indicate that a feasibly intensive recruitment drive will attract only a minority of students to alcohol screening if their participation is voluntary rather than made a requirement of university attendance, accommodation or progression. Next is that even among these volunteers, the impact of a well structured assessment and brief intervention was so small that – given possible biases – in reality it might have been zero. Both sets of students seem to have reduced their drinking from 7.5 drinks per typical occasion to 4 or 5, the sole measure to have shown a significantly greater reduction among the intervention students.

In finding at best small effects, the trial was typical of trials of computer-based brief interventions among students. A [review](#) of such interventions among students and non-students found a much smaller reduction in drinking among student populations. Though amalgamated across all the trials the reduction was statistically significant, in most of the individual trials it was not. Possibly because in these studies students were drinking less than older people, and perhaps too in a setting where heavy drinking is an accepted rite of passage, students had less incentive to act on information and advice which would lead heavier drinkers responsible for families and jobs to cut back. [Another review](#) focused on the featured study's tactic of comparing the student's drinking to the norm. It found "no substantive meaningful benefits ... associated with social norms interventions for prevention of alcohol misuse among college/university students". Such significant findings as there were might have been due to bias, and many of the studies lacked relevance to university-wide programmes because they were confined to psychology students or and/or to high-risk students only.

Since in the featured trial students were initially selected for the study on the basis of their relatively heavy drinking, the apparent remissions seen five months later could have been due to students sampled at an unusually high point in their drinking [trending](#) towards a more typical level, regardless of screening or intervention. As the British [SIPS](#) trials in surgeries, emergency departments and probation did, the trial also leaves open the possibility that there was an impact, but that nearly all of it was due to recruitment to the study and the initial screening questions (plus in the SIPS trials a brief warning to those drinking at risky levels), with little if nothing added even by what was constructed to be a high quality brief intervention. The Swedish trial described below suggests this might have been the case.

Swedish trial tests whether screening is the active ingredient

A [Swedish trial](#) among university students addressed the issue of whether screening is itself an active ingredient by incorporating a [control](#) group of students whose first contact with the study was to be assessed at the three-month follow-up point, when all the students in the study were led to believe they were engaging in a lifestyle survey, not a study focused on their drinking. Three months before, another two sets of students had been sent emails from the universities' health care services asking them to complete an [on-line alcohol screening assessment](#), and one of these sets also received an intervention in the form of feedback on their scores and the implications of their results.

As in the featured trial, only about a third of students invited to be screened completed the process

As in the featured trial, only about a third of students invited to be screened completed the process. Also, only half the followed-up students had accepted their invitations to be screened. It meant that any impacts of screening and intervention across the entire followed-up sample would be diluted by the fact that a high proportion intended to experience these procedures had not – as would probably be the case in the normal practice approximated by the trial.

The results were notable mainly for the very minor and generally statistically insignificant differences between drinking in the three sets of students. Though screening along and this plus intervention did lead to some extra reductions in risky drinking, on no measure did adding feedback to screening significantly improve outcomes.

Another analysis was confined to the followed-up students who had undertaken screening three months before and, if allocated to this, received an intervention in the form of feedback, giving the intervention element the maximum chance to show that it really did add value. Still there were no statistically significant advantages from adding intervention to screening, until the research team added an unplanned comparison of weekly consumption, a manoeuvre which [reduces confidence](#) in the finding because it opens up the possibility of capitalising on a chance significant result.

For the researchers, their results revealed the “striking” impact of screening alone. However, the reliability of all these findings as an indicator of university-wide impact is compromised by the fact that only just over half the students completed the follow-up survey.

Truly real-world trials of brief interventions are few ([1](#) [2](#) [3](#)) and like the Swedish trial and the featured study, they tend to find that the interventions are often not delivered and do not affect drinking to a statistically significant degree. More promising results from trials more selective about their participants and in which there is non-routine support to promote implementation seem not to survive the loss of these controls and supports.

For more on the degree to which brief alcohol interventions can improve population health see this [Effectiveness Bank hot topic](#).

Thanks for their comments on this entry in draft to Richard Saitz of the Boston Medical Center in the USA. Commentators bear no responsibility for the text including the interpretations and any remaining errors.

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