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► [Effects of a school-based prevention program on European adolescents' patterns of alcohol use.](#)



Caria M.P., Faggiano F., Bellocco R. et al. [Request reprint](#)
Journal of Adolescent Health: 2011, 48, p. 182–188.

The largest European drug education trial ever conducted tested whether US-style social influence programmes would prove effective in Europe. Among the successes were the reductions in problem drinking documented in this report.

Summary This account is partly based on an [earlier Findings analysis](#) of the same study.

Funded at European level by the European Commission, the [European Drug Addiction Prevention trial](#) (EU-Dap) aimed to test whether 'social influence' school-based drug prevention programmes of the kind developed in the USA will prove effective in Europe. Across [seven countries](#) and 170 schools it recruited 7079 12–14-year-old pupils, the largest sample ever in a European drug education trial.

Developed by the EU-Dap project team, the 12-lesson curriculum they tested is known in English as *Unplugged*. Materials are available on the [EU-Dap web site](#) and the programme's development and approach has [been extensively documented](#). As well as informing pupils about substances and their use, such curricula aim to affect substance use by training pupils how to resist pressure to use, reinforcing attitudes which sustain commitment to continued non-use, and enhancing decision-making, social and life skills. *Unplugged* particularly emphasised correcting pupils' beliefs about the pervasiveness of substance use ('normative beliefs') by contrasting these with data from surveys of pupils of the same age which typically reveal that average use levels are lower. To make the programme more feasible for schools, it was limited to 12 lessons which can be completed within a school year. The schools' own teachers taught the lessons after two and a half days' training in the lessons and materials, and in how to teach them using methods which encourage interaction between pupils and between pupils and teachers, such as role-play and giving and receiving feedback in small groups.

This basic curriculum was supplemented either by meetings led by pupils selected by their classmates, or by workshops for the pupils' parents. While the curriculum was **moderately well** implemented, peer-led activities were **rarely conducted**, few parents **attended** the workshops, and an important element – role-play – was generally omitted.

Schools were randomly allocated to one of these three variants of the *Unplugged* intervention or to act as '**control**' schools which simply carried on with their normal lessons. Taken singly, none of the three variants significantly improved substance outcomes compared to the controls, so reports to date have concentrated on comparing outcomes for all 3547 pupils in the 78 *Unplugged* schools, to the 3532 pupils in 65 control schools. Excluded from this total were the 27 schools which dropped out of the study after being randomised to the interventions but before their students could be surveyed. Among these were **nearly a quarter** of the schools allocated to *Unplugged*. Another five did not conduct the latest follow-up surveys. Of the 7079 pupils surveyed before the lessons, 18 months later (15 months after the *Unplugged* lessons had ended) 5541 provided usable data at the latest follow-up. In between a **a further survey** had assessed pupils' reactions three months after the lessons.

Main findings

At the final follow-up, pupils in *Unplugged* schools were **not significantly** less likely to have been drinking or drinking at least weekly (25% v. 30% in control schools) over the past month. However, they were significantly less likely (7% v. 9%) to report having experienced **problems** related to their drinking over the past year. When the sample was divided up in various ways, this effect remained statistically significant only among pupils not already drinking before the lessons, among those who thought their parents would allow them to drink, and among girls aged 12 or less at the baseline survey.

These results could not include data from the 22% of pupils who did not complete the latest follow-up survey, or who could not be identified as the same individual who completed a baseline survey. On the assumption that they did not change their behaviour or were all non-users, the results remained substantially the same. When instead 'worst case' assumptions were applied to each outcome, none were significantly different to those in control schools.

Because (via an anonymous code) individuals could be linked back to their baseline responses, the researchers could identify transitions in substance use patterns and problems. Of the nine possible drinking transitions, just one – non-drinkers becoming frequent (at least weekly) drinkers – was **significantly** less likely in *Unplugged* schools, though there was also a tendency for these pupils to more often stay non-drinkers and for occasional drinkers to progress less often to frequent drinking. In respect of drink-related problems, the great majority of pupils had not experienced these before the baseline survey; in *Unplugged* schools, these pupils were significantly more likely to stay this way and less likely to progress to frequent problems.

The authors' conclusions

Findings on alcohol-related problems from the featured study together with **earlier findings** that *Unplugged* retarded growth in episodes of drunkenness indicate that the curriculum's preventive effects are limited to problematic drinking rather than the

frequency of consumption. Possibly this is because in these European countries, drinking at least to a moderate degree is deeply rooted in and largely determined by culture and society. In contrast, very heavy and problematic drinking is determined more by the individual and their circumstances so is more amenable to educational influences. Based on [other findings](#) from the 18-month follow-up, earlier the research team had also concluded that comprehensive social influence curricula can effectively be delivered in the European school setting and help delay onset of substance use, hinder progression to higher levels of use, and facilitate reversion to less intensive patterns of use.

FINDINGS

This study is a valuable addition to the scarce European evidence base on substance use education in schools. Taking earlier reports together with the current report, it is now clear that the curriculum generally had no statistically significant impacts on substance use levels overall, though there were fairly consistent tendencies which suggest that there may nevertheless have been impacts which failed to meet the conventional test for significance. Specifically, there were no significant impacts on the prevalence of smoking, drinking, or using cannabis. Regular use too was generally unaffected, the only significant finding being a short-lived reduction in regular smoking. In respect of cannabis, the narrow failure to achieve statistical significance was possibly due to the small numbers involved. At a more microscopic level, of 45 possible transitions between use or problem levels, just eight were significantly more or less likely in *Unplugged* schools, all in a favourable direction. Of these, all but two concerned alcohol. How much these findings can be relied on is questionable. The favourable direction of most other transitions attenuates but does not eliminate concern that among so many tests, some would have thrown up statistically significant differences purely by chance.

The pattern of findings on problem drinking in this report and on drunkenness in an [earlier report](#) suggest strongly that the lessons did retard the age-related growth in problem drinking if not in drinking or frequent drinking as such. At the 18-month follow-up, significantly more *Unplugged* pupils (87% v. 85%) continued to say they had not been drunk in past month, fewer who had been drunk once or twice in the past month at baseline progressed to more frequent drunkenness (16% v. 33%), and more reverted to not being drunk at all (59% v. 39%).

The fact that *Unplugged* did not significantly reduce alcohol-related problems among pupils who had already drunk or experienced drink-related problems before the lessons may have been due to the small numbers involved. The same cannot be said of the lack of impact among boys or among pupils who thought their parents would not allow them to drink. The latter finding was perhaps indicative of the lessons' inability to improve on the impact of an anti-drinking culture in the home. However, such findings require confirmation in studies designed to test them from the start; when a sample is subdivided in multiple ways, there is a heightened risk that some differences will be statistically significant purely by chance.

By design, at entry to the study [none of the schools](#) were implementing specific drug prevention interventions with strong packages targeted at the relevant school years, a situation which presumably persisted in most control schools, most of which [instead implemented](#) various levels of knowledge-based programmes. In contrast, *Unplugged* was intended to be a strong and sophisticated package which could display its advantages in a study large enough to detect these. It seems probable that *Unplugged* was indeed preferable to knowledge-based programmes known to be ineffective in prevention terms. However, if this was the case, the benefits were quite limited.

Moreover, the findings can only be considered applicable to the roughly half of schools prepared to take on the burden of the research and interventions, and to the minority of the entire pupil population taught in such schools who complete the surveys required by research projects. Among schools which did take on the intervention, the parental and peer-leader supplements did not prove feasible and implementation of the core curriculum itself was "just moderate". There is a counter-argument that in routine implementation schools would choose *Unplugged* rather than being randomly allocated to it, and because of this the programme would have a head start among schools committed to its principles and implementation.

Overall, the findings are not strong enough to alter the view that drug education in secondary schools makes a minor contribution to the prevention of problems related to [drinking](#) and [illegal drug use \(NOTE\)](#), though the evidence in respect of [smoking](#) is stronger.

Mixed and generally inconclusive findings of a prevention impact from school programmes targeting substance use do not negate the possibility that [general attempts](#) to create schools conducive to healthy development will affect substance use along with other behaviours, nor do they relieve schools of the obligation to educate their pupils on this important aspect of our society. [Arguably too](#), while less or safer substance use may be a desirable side-effect, drug education should be assessed against educational and youth development criteria to do with being relevant and useful as assessed by the young people themselves, rather than pre-set behaviour change objectives.

Thanks for their comments on this entry in draft to Maria Paola Caria of the Karolinska Institutet in Stockholm, Sweden. Commentators bear no responsibility for the text including the interpretations and any remaining errors.

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