



## Research paper

# Preventing alcohol harm: Early results from a cluster randomised, controlled trial in Victoria, Australia of comprehensive harm minimisation school drug education<sup>☆</sup>



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## ABSTRACT

**Background:** In Australia, the burden of alcohol-attributable harm falls most heavily on young people. Prevention is important, and schools have long been seen as appropriate settings for pre-emptive interventions with this high risk group. This paper evaluates the effectiveness, in relation to alcohol harm prevention, of the Drug Education in Victorian Schools (DEVS) programme, nine months after implementation. This intervention dealt with both licit and illicit drugs, employed a harm minimisation approach that incorporated interactive, skill based, teaching methods and capitalised on parental influence through home activities.

**Methods:** A cluster randomised, controlled trial of the first ten lessons of the DEVS drug education programme was conducted with year eight students, aged 13–14 years. Twenty-one secondary schools in Victoria, Australia were randomly allocated to receive the DEVS programme (14 schools,  $n=1163$ ) or the drug education usually provided by their schools (7 schools,  $n=589$ ). Self-reported changes were measured in relation to: knowledge and attitudes, communication with parents, drug education lessons remembered, proportion of drinkers, alcohol consumption (quantity multiplied by frequency), proportion of student drinkers engaging in risky consumption, and the number of harms experienced as a result of alcohol consumption.

**Results:** In comparison to the controls, there was a significantly greater increase in the intervention students' knowledge about drugs, including alcohol ( $p \leq 0.001$ ); there was a significant change in their level of communication with parents about alcohol ( $p=0.037$ ); they recalled receiving significantly more alcohol education ( $p < 0.001$ ); their alcohol consumption increased significantly less ( $p=0.011$ ); and they experienced a lesser increase in harms associated with their drinking ( $p \leq 0.001$ ). There were no significant differences between the two study groups in relation to changes in attitudes towards alcohol or in the proportion of drinkers or risky drinkers. There was, however, a notable trend of less consumption by risky drinkers in the intervention group.

**Conclusions:** A comprehensive, harm minimisation focused school drug education programme is effective in increasing general drug knowledge, and reducing alcohol consumption and harm.

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## Introduction

Alcohol is commonly used in Australia, with 80.5% of Australians, aged 15 years and older consuming at least one standard alcoholic drink (10g of pure alcohol) in the previous year (Australian Institute of Health and Welfare, 2011). Drinking alcohol is in many ways tied to Australian national identity, and is strongly associated with a range of social events and celebrations (Keane, 2009; Midford, 2005). While most consumption of alcohol is low risk, the harmful effects of consumption accounted

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for 3.3% of the burden of disease and injury in Australia in 2003 (Begg et al., 2007). The national guidelines for alcohol consumption highlight the lifetime risk of excessive alcohol use (National Health and Medical Research Council (NHMRC), 2009). In the short-term, excessive alcohol consumption increases the risk of physical injury from falls, violence and road accidents (National Health and Medical Research Council (NHMRC), 2009). Long-term harms include liver and cardiovascular disease, cancers, obesity, as well as increased risk of mental illness (National Health and Medical Research Council (NHMRC), 2009). Data from 2004/05 estimated the social cost of alcohol consumption in Australia to be \$15.3 billion annually (Collins & Lapsey, 2008).

In Australia the burden of acute alcohol-attributable injury falls most heavily on young people. In the period 1990–97 over half of all alcohol-related serious road injuries involved young people aged 15–24 years (National Health and Medical Research Council (NHMRC), 2009). Between 1993/94 and 2000/01 more than one-third of alcohol-related acute injury hospitalisations were for young people aged 15–29 years (Chikritzhs et al., 2003). Young drinkers have also been found to be particularly at risk of memory loss, violence, and unwanted sexual activity, as a result of alcohol use (Bonomo et al., 2001). This can be attributed to risk-taking behavioural norms associated with young people, as well as their inexperience in dealing with the effects of alcohol (National Health and Medical Research Council (NHMRC), 2009).

In 2011, 74% of Australian secondary school students aged between 12 and 17 years had tried alcohol at least once in their lives (White & Bariola, 2012). Adolescent alcohol use increases with age, with corresponding increases in risky behaviour. For example, while less than 1% of 12 year old students had consumed alcohol at levels that risked acute harm (defined as five or more drinks on one occasion) (National Health and Medical Research Council (NHMRC), 2009) at least once in the week before being surveyed, this figure rose to 18.5% by the age of 17 (White & Bariola, 2012). Although recent research has found that fewer young people are drinking alcohol (Australian Institute of Health and Welfare, 2011), the Victorian Youth Alcohol and Drug Survey found a steady increase in the number of young people consuming very high levels of alcohol (20 or more standard drinks in one session) (Social Research Centre, 2010). The study reported that 31% of 16–17 year olds, and 47% of 18–21 year olds consumed this much at least once in the past twelve months (Social Research Centre, 2010). In other words, more of those young people, who consume alcohol, are doing so at increasingly risky levels (Social Research Centre, 2010). This pattern highlights the need for prevention programmes that provide young people with strategies to minimise the risks associated with their drinking, including strategies to reduce heavy episodic consumption, where acute harmful consequences are most likely.

Schools have long been identified by government as an appropriate site for drug prevention interventions. This is because interventions here can be pre-emptive, wide ranging and cost effective (Caulkins, Pacula, Paddock, & Chiesa, 2004; Midford, 2007; Ministerial Council on Drug Strategy, 2011). School-based drug education programmes as a whole, however, have not been demonstrably effective at reducing drug use, including the licit drugs, alcohol and tobacco, amongst young people (Foxcroft & Tsertsvadze, 2011; Midford, 2010). One possible explanation for this poor effectiveness is the emphasis given in many education programmes to outcomes based on abstinence rather than minimisation of harm (Vogl et al., 2009). Strengthening this argument in the case of alcohol use are the results of a systematic review of different types of prevention programmes, which found that the most common positive outcomes of the reviewed studies related to binge drinking and drunkenness (Foxcroft & Tsertsvadze, 2012). This suggests that relying solely on abstinence as a measure of success may lead to programs being dismissed as ineffective, whereas,

if assessed in terms of minimising harm, they would have been seen as beneficial.

A school drug education programme based on harm minimisation principles acknowledges that some young people use drugs, and focuses on alcohol as the drug that causes the greatest harm. A harm minimisation programme should aim to provide practical knowledge and skills to enable young people to make safer decisions in regard to drug use and should be evaluated in terms of reduction in risk and harm. Abstinence remains a prevention strategy within a harm minimisation approach, but it is not the measure of programme effectiveness (Lenton & Midford, 1996). The great advantage of a harm minimisation approach is that it provides for flexibility and relevance, allowing the curriculum to meet students at their individual level of experience and knowledge in relation to drug issues (Marlatt & Witkiewitz, 2010). At the same time, research indicates that teaching harm minimisation strategies does not increase up take amongst non-users (Hamilton, Cross, Resnicow, & Shaw, 2007; McBride, Farringdon, Midford, Meuleners, & Phillips, 2004).

In Australia, the Federal Government drug strategy supports drug education as a prevention measure and explicitly endorses a harm minimisation framework based on three pillars: demand reduction, supply reduction, harm reduction (Ministerial Council on Drug Strategy, 2011). Preventative drug education is also supported by the state governments, with Victoria, for example, requiring the provision of research-derived, harm minimisation approaches to drug education in secondary schools. Consequently, a well evaluated programme based on harm minimisation principles meets school requirements and aligns well with the state's Alcohol and Drug Strategy (Department of Health, 2012).

The Drug Education in Victorian Schools (DEVS) programme comprises 18 lessons, provided successively over two years to junior secondary school students. The intervention is grounded in social learning theory, but also draws on two other theoretical models, poststructuralist subjectivity and cognitive dissonance to understand how the self-concept of students, and hence their drug use can be influenced, and how the dissonance between competing conceptions of drug use can be used to reinforce ownership of responsible behaviour (Davies, 2006; Festinger, 1957; McAlister, Perry, & Parcel, 2008). Greater detail as to the conceptual underpinnings of the programme is provided in the study protocol (Midford, Cahill, Foxcroft, et al., 2012). The programme focuses primarily on alcohol, but includes discussion of other drugs. It also considers the role of alcohol in interconnecting health issues, such as mental health, violence, anti-social behaviour and sexual vulnerability. Comprehensive drug programmes are considered to be useful in tackling interrelated issues leading to risk behaviours (Stead & Stradling, 2010). An integrated approach is both economical and reinforcing in that learned skills are readily transferable to a range of situations. For example, decision-making, problem-solving and help-seeking skills are crucial across all health domains. The contrary argument is that each drug requires a slightly different focus, and that a programme dealing with multiple substances may lead to a confused or unclear message (Werch et al., 2005). The weight of evidence, however, counters this concern. A review of the literature found that alcohol-specific programmes were no more effective than comprehensive programmes that included alcohol amongst other drugs (Tobler et al., 2000). More recently, a systematic review found that comprehensive programmes were more effective in the long term, and concluded that the evidence supports generic programmes over those with an alcohol-specific focus (Foxcroft & Tsertsvadze, 2011).

This research builds on the findings of the DEVS pilot study, which produced promising results in relation to student alcohol use. Using an earlier version of the drug education curriculum taught in the current study, the pilot study results showed that

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