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Report

Effectiveness of school-based life-skills and alcohol education programmes: a review of the literature

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Executive summary

This summary presents the findings of a review of UK and international academic literature published since 2008, undertaken by the National Foundation for Educational Research (NFER) on behalf of Alcohol Research UK, between February and April 2013.

Review objectives:

The review explores:

- the **impact** of alcohol education/life-skills programmes in developing school-age children's: knowledge of, and attitudes towards, alcohol; skills (including confidence, assertiveness, resistance skills; decision-making, and ability to stay safe and healthy); and behaviours (particularly related to consumption patterns, including frequency of drinking and episodes of drunkenness)
- which alcohol education/life-skills programmes offer greatest **value for money**
- the **processes** that facilitate or inhibit the implementation, sustainability and impact of alcohol education/life-skills programmes.

The review builds on a variety of previous literature reviews, which present a mixed picture of the effectiveness of alcohol education initiatives for school-aged pupils. For full details of these reviews, see Section 2 of the report.

Review methods:

The review was underpinned by a systematic process for item searching, selection screening, coding, appraisal and synthesis that resulted in 40 'key items' for review. Each item was reviewed and synthesised using a common review template and according to agreed criteria.

Review findings:

Which programmes have greatest impact on children and young people?

- Previous literature reviews of alcohol education and life-skills programmes present a mixed picture of their effectiveness for school-aged pupils.
- There are difficulties in judging impact due to:
 - the challenge of generalising about effective programme ingredients
 - issues related to programme fidelity. If fidelity has not been investigated through a thorough process evaluation, it is difficult to ascertain whether outcomes are a result of the effectiveness (or otherwise) of the programme, or of the way in which it has been implemented.
- This review found substantial evidence relating to the positive effects of school-based alcohol education and life-skills programmes on pupils' alcohol related-**knowledge**.
- Few of the sources specifically measured the impacts on pupils' **attitudes**. Those that did, have variable and inconclusive findings.
- There is little evidence of the effectiveness of alcohol education and life-skills programmes in improving pupils' alcohol-related **decision-making skills**.



- There is a degree of evidence of the effectiveness of alcohol education and life-skills programmes in reducing the **frequency of alcohol consumption** and episodes of drunkenness among school-aged children. There are, however, limitations to several of the research studies cited.

Which programmes are most cost effective?

- Very few studies have investigated the cost benefits of universal school-based alcohol education programmes.
- There is some limited analysis of the costs incurred in running individual programmes, but no evidence as to how these compare to those of alternative programmes.
- World Health Organisation research suggests that school-based alcohol education is not cost effective in reducing alcohol-related harm in any European region. In contrast, alcohol pricing and taxation policy are cost-effective throughout Europe.
- However, some authors hypothesise that with just a very small effect size in reduced alcohol consumption rates among young people as a result of alcohol education programmes, the cost benefits to society could be substantial.
- There is evidence of one targeted residential programme in the USA (ChalleNGe), and of one specialist drug and alcohol service in the UK that have provided substantial cost benefits to individuals and society. These are not universal alcohol education programmes however.

What factors facilitate or inhibit the success of programmes?

- Programmes are not always transferrable from one situation or context to another. There needs to be caution when transferring lessons from effective programmes.
- Effective alcohol education curricula achieve a good balance between: accurate and consistent information giving and knowledge building; skills development; and sensitivity to factors influencing student attitudes and behaviours.
- Effective teaching and learning approaches include those that are interactive rather than didactic. Passive teaching approaches are associated with less favourable results.
- Course delivery by external professionals such as health workers and counsellors can sometimes lead to more positive outcomes than teacher-led delivery, and specialist school staff achieve more positive results than non-specialist teachers.
- There is tentative, but inconclusive, evidence that effective programmes focus on prevention rather than sanction, and on harm-reduction rather than abstinence.
- The optimum age for effective exposure is unclear, but seems to be somewhere between the ages of 12 and 14. There is evidence that a series of short-duration interventions delivered through childhood, with booster sessions into adolescence, is an effective approach. Whatever age programmes are introduced, the cognitive expectations and teaching and learning approaches must be age appropriate.
- Parents and families act as critical protective agents for young people. Where families have been included in interventions, results are usually positive.
- In some instances, parental support is lacking. In such instances, schools have an increasingly important role to play in fulfilling a protective role.

Finally, we present the key findings of our review in relation to the degree of evidence of impact for different pupil outcomes, using the following terms: *substantial evidence of*



impact; degree of evidence of impact; only a little evidence of impact. Where we are able to, we comment on apparent facilitators or inhibitors of impact.

Substantial evidence of increased knowledge and awareness

The review found substantial evidence relating to the positive effects of school-based alcohol education and life-skills programmes on pupils' alcohol related-knowledge. Programmes include: *Talk About Alcohol* (England); *School Health and Alcohol Harm Reduction Project (SHAHRP)*, Australia and Northern Ireland); *MEDALC* (Wales); *Drug Education in Victorian Schools (DEVS)*, Australia); *Reinforcing Alcohol Prevention (RAP)*, USA); the *Juvenile and Adolescent Substance Abuse Prevention Program (JASAP)*, USA); and the *Life-skills Training Programme* (USA). Across these programmes, pupils developed an enhanced understanding of the effects and risks of alcohol consumption, as well as some of the legal issues related to alcohol use. Specifically, they developed greater accuracy in their understanding of the use, abuse and consequences of alcohol consumption.

The reasons for the effectiveness of alcohol and life-skills programmes in enhancing pupil knowledge of alcohol-related issues are difficult to deduce, because the standard reporting of RCT data rarely provides sufficient programme information to allow researchers to make generalisations. However, we find some common messages about facilitators of programmes which have been found to have an impact on knowledge:

- **appropriate pedagogy** – including equipping teachers with the right skills to deliver the programme, effective teaching and learning approaches that are interactive rather than didactic, and active rather than passive teaching approaches.
- **the protective role of parents/carers** – including the importance of working alongside parents through various home-based activities, parents and families acting as critical protective agents for young people, and involving families in interventions.
- **delivery by external professionals** – examples include pupils receiving training from an external professional rather than a class teacher, and delivery by medical students.

A degree of evidence of improved behaviours

While this review identifies some alcohol and life-skills programmes that have had a positive impact on school-aged children's behaviours, there is also contradictory evidence. There are examples of programmes that have had success in reducing the frequency and quantity of young people's drinking. These include the *Information Psychosocial Competence Protection programme (IPSY)*, Germany); *Take Charge of Your Life (TCYL)*, USA), *SHAHRP* (Australia and UK), *Preventure* (UK) and *DEVS* and *DAPPY:8* (Australia). However, results were sometimes differential, with better effects among those with non-problematic alcohol consumption than those with existing alcohol use. The extent to which outcomes were sustained over time was also mixed. There is some evidence of *negative* outcomes in relation to behaviour change (*keeping' it REAL* and *Project ALERT* in the USA). Suggestions for the low levels of success of some of the programmes in bringing about behavioural change include: age inappropriate pedagogy and use of cognitive techniques too sophisticated for young children; and teacher stress and lack of time.

Evidence of the effectiveness of interventions to reduce episodes of drunkenness among school aged-children is sparse and mixed. One intervention with positive impacts was the



European Drug Addiction Prevention (EU-Dap) programme named *Unplugged*. This programme targets pupils aged 12-14 and incorporates the development of life skills and the correction of normative beliefs about drugs and drug use.

Only a little evidence of improved attitudes, decision-making skills, confidence and assertiveness

The review identifies a small number of alcohol and life-skills programmes that have had a positive impact on school-aged children's attitudes towards alcohol. The best evidence derives from *SHAHRP* (Northern Ireland) and *MEDALC* (Wales), which reported positive attitudinal change among pupils. Pupils involved in *SHAHRP*, for example, were more likely to have 'safe' attitudes towards alcohol than control students. The reasons for this success are unclear, however.

Only a small number of studies focused on decision-making skills as an outcome, and of these, just two reported positive results (*JASAP* and *TCYL* – both in the USA). In the case of *JASAP*, intervention pupils were found to be making more healthy decisions and in the case of *TCYL*, were found to have increased their alcohol refusal and decision-making skills. Similarly, only a small number of studies focused on confidence and assertiveness as an outcome, and of these, just two reported positive results (*IPST* in Germany – although only for pupils with 'normative' alcohol use trajectories - and *Preventure* in the UK). In the latter case, it is of note that the intervention was delivered by a qualified therapist.

Weak evidence of cost-effectiveness

Very few studies have investigated the cost benefits of universal school-based alcohol education programmes. Although some authors hypothesise that with just a very small effect size in reduced alcohol consumption rates among young people as a result of alcohol education programmes, the cost benefits to society could be substantial, there is no concrete evidence of such cost benefits at present and therefore there is more research to be done.

Review conclusion

This review, like others before it, has found mixed evidence of the effectiveness of alcohol education and life-skills programmes. The greatest benefits are in terms of pupils' enhanced knowledge and understanding of alcohol-related issues. In spite of the fact that we cannot always identify conclusive evidence of programme impact, there are a number of messages that can be taken from the review about factors that help to facilitate success. These include: ensuring an appropriate balance between knowledge and skills elements within curricula; giving careful consideration to pedagogy, so that it is age appropriate, delivered by the right people with the right skills and, where possible, is interactive and open; and finally, utilising and drawing on the support of parents and carers wherever possible. Central to this it is important to ensure that programme goals are clear and accessible to both pupils and their families.



1. Introduction

1.1 Review objectives

This report presents the findings of a review of UK and international academic literature published since 2008, undertaken by the National Foundation for Educational Research (NFER) on behalf of Alcohol Research UK, between February and April 2013. It explores:

- the **impact** of alcohol education/life-skills programmes¹ in developing school-age children's:
 - knowledge and awareness of, and attitudes towards, alcohol
 - skills (including confidence, assertiveness, resistance skills; decision-making, and ability to stay safe and healthy)
 - behaviours (particularly related to consumption patterns, including frequency of drinking and episodes of drunkenness)
- the extent to which there are differential effects for different 'types' of young people
- the extent to which programmes have any adverse or unintended effects
- the **processes** that facilitate or inhibit the implementation, sustainability and impact of alcohol education/life-skills programmes.² For example:
 - situation and context (including advantages of learning in different settings, and the challenges of transferring successful outcomes from one context, or one group of individuals, to another)
 - curriculum content (for example, programme components/features that appear to have the greatest impact on children and young people)
 - teaching and learning styles and approaches (including the most advantageous methods and the relative benefits of using external professionals compared to school teachers)
 - age appropriateness
 - parental engagement
- which alcohol education/life-skills programmes offer greatest **value for money** in relation to:
 - economy – how are programmes delivered at minimum cost?
 - efficiency – how do programmes maximise their reach with the available resources (for example, maximising the numbers of pupils impacted)
 - effectiveness – which programmes have the greatest overall impact per unit cost?

¹ With a particular focus on evaluations of specific named programmes/ interventions.

² With a specific focus on a) specific named programmes/interventions, and b) on literature that identifies generic factors/key ingredients for success in implementing such programmes.



1.2 Policy and research context

1.2.1 Policy context

It is widely documented that a lifetime of alcohol use and a combination of frequency of drinking and amount drunk per occasion increase the risk of a wide range of health and social harm. The World Health Organisation (Anderson, 2009) notes that the European Union is the heaviest drinking region in the world and that the overall social cost of alcohol to the EU at the time of publication was estimated to be €125 billion per year, with an intangible cost of some €270 billion per year. In England specifically, the Health and Social Care Information Centre (2012) statistics on the costs and ill health associated with alcohol consumption show that, in 2010/11, there were 198,900 hospital admissions where the primary diagnosis was attributable to the consumption of alcohol using a narrow definition, and 1,168,300 admissions based on a broader measure of alcohol attributable fractions.³ This accounted for 1.3 per cent of all hospital admissions. Moreover, there were 167,764 prescription items issued in 2011 for drugs for the treatment of alcohol dependency, the cost of which amounted to £2.49 million. These statistics include the estimate that in 2008 the cost of alcohol-related harm to the NHS in England was £2.7 billion. In addition, 22 per cent of accident and emergency admissions in England were alcohol-related in 2009. These statistics are just some examples which highlight the monetary, personal and societal 'costs' of alcohol consumption.

According to the 2011 survey of smoking, drinking and drug use among young people in England (Fuller, 2012), 45 per cent of secondary school pupils aged 11-15 had drunk a whole alcoholic drink at least once. Although there is a downward trend in the proportion of 11-15 year olds having drunk alcohol *in the last week*, 12 per cent reporting having done so. Seven per cent of this age group said they usually drank alcohol *once a week*.

The Department for Education (DfE) has the policy lead across Government for young people and alcohol, aiming to reduce the levels of alcohol consumption and the harms of drinking. The current Drug Strategy, launched on December 8th 2010, sets out the Government's approach to addressing the damage that drug and alcohol dependence cause to society. The strategy also outlines measures to prevent alcohol misuse among young people and to intervene early with those who need support. The DfE acknowledges that effective drug and alcohol education is essential to tackling the problem of drug and alcohol misuse, and that education plays an important role in helping to ensure that young people are equipped with the information and skills they need to make informed, healthy decisions.

³ The broad measure is derived by summing the alcohol attributable fraction (the estimate of the proportion of cases of a particular disease or injury that are caused by alcohol consumption) associated with each admission based on the diagnosis most strongly associated with alcohol out of all diagnoses (both primary and secondary). The narrow measure is constructed in a similar way but counts only the fraction associated with the diagnosis in the primary position. The figures based on all diagnoses give an estimate of the number of admissions to hospital caused or affected by alcohol consumption at a particular time or place and hence the pressure put on the health system. Information based only on primary diagnoses allow an uncomplicated picture of trends in alcohol-related admissions over time although will provide an incomplete picture of admissions resulting from or affected by alcohol consumption (as in some cases, the secondary diagnoses will have contributed to the admission to hospital). (Health and Social Care Information Centre, 2012 p. 11)



The current education arrangements require all state maintained schools to teach pupils about the effects of drugs, including alcohol.⁴ This requirement should be covered in all four key stages as part of the statutory National Curriculum for science, and the non-statutory framework for personal, social, health and economic education (PSHE).

In March 2013, the DfE published outcomes of their internal review of PSHE, which emphasised the expectation for schools to use their PSHE education programme to equip pupils with a sound understanding of risk and with the knowledge and skills necessary to make safe and informed decisions. Following the review, the DfE announced it was launching a new evidence-based information service for drug and alcohol education, which will provide practical advice and tools based on the best international evidence. The Centre for the Analysis of Youth Transitions (CAYT) is being funded to develop a database of evaluations of programmes aimed at improving outcomes for young people.

A recent Ofsted (2013) report, evaluating the strengths and weaknesses of PSHE in primary and secondary schools, identified gaps in understanding of the physical and social damage associated with alcohol misuse, including personal safety, and recommended that schools should ensure appropriate learning about these issues.

1.3 Research methods

The review is underpinned by a systematic process for item searching, selection, screening, coding, appraisal and synthesis that resulted in 40 'key items' for the review. Details of the review scope, parameters and systematic searches that were undertaken for this review are provided in Appendix A. Following searching, the review team adopted a four-stage process to filter the search results. This process is outlined in detail in Appendices B and C, but in brief, it consisted of the following:

- **Coding** – all identified items were coded for relevance on the basis of information provided in abstracts. A total of 40 'key items' were identified as a result of this process.
- **Appraisal** – using a detailed appraisal template for each selected item, the review team read and summarised each item under a number of key headings related to programme detail, research design, study findings, and relevance to the review. Each item was categorised as having either a 'strong', 'modest' or 'weak/inconclusive' methodology (see Appendix D for further details). All of the 40 key items that were selected for this review were rated as either strong or moderate.
- **Synthesis** – having appraised the key literature items, the review team began synthesising the literature. This involved analysing the reviewed data in order to draw out emerging themes, patterns, and key messages. The synthesis was guided by the research objectives outlined in Section 1.1 of this report.

⁴ Academies and Free Schools have the freedom to design a curriculum which meets their pupils' needs.



1.4 Report structure

The following section explores the school-based life-skills and alcohol education programmes which are demonstrated as having the greatest impact on children and young people. Section 3 goes on to summarise the somewhat limited evidence of the cost-effectiveness of programmes, before evidence of the factors which facilitate and hinder the success of programmes are discussed in Section 4. Conclusions from the review are drawn in Section 5



2. Which programmes have greatest impact on children and young people?

Key messages:

- Previous literature review findings of alcohol education and life-skills programmes present a mixed picture of their effectiveness for school-aged pupils.
- There are difficulties in judging which alcohol education and life-skills programmes have the greatest impact due to the challenges associated with making generalisations from the research literature about effective programme ingredients, as well as issues related to programme fidelity (i.e. the variation in implementation of programmes across different settings).
- If programme fidelity has not been investigated through a thorough process evaluation, it can be extremely difficult to ascertain whether outcomes are a result of the effectiveness (or otherwise) of the programme, or of the way in which it has been implemented and delivered at the local level.
- Overall, this review of recent UK and international impact evaluations found substantial evidence relating to the positive effects of school-based alcohol education and life-skills programmes on pupils' alcohol related-knowledge.
- Few of the sources selected for this study specifically measured the impact of alcohol and life-skills programmes on pupils' attitudes and those that do, have variable and inconclusive findings.
- There is little evidence of the effectiveness of alcohol education and life-skills programmes in improving pupils' alcohol-related decision-making skills. That which is available is inconclusive; for example, some programmes have been found to support pupils to make informed choices, while others have found no significant differences in the decision-making skills of pupils who participated in alcohol interventions and those who did not.
- There is a degree of evidence of the effectiveness of alcohol education and life-skills programmes in reducing the frequency of alcohol consumption and episodes of drunkenness among school-aged children. There are, however, limitations to several of the research studies cited (for example, the lack of a comparison group of pupils and longer-term follow up) which means there is a need for caution when interpreting positive results.
- Current evidence suggests that the alcohol and life-skills programmes that appear to have the most impact are those with an appropriate pedagogy, often focussing on decision-making and skills development, which are delivered by external agencies or teachers with specialist knowledge and skills.

This section presents literature review findings of the impact of alcohol education and life-skills programmes. Much of the evidence comes from evaluations of specific interventions of what does and does not 'work' for school-age children. The sources cited range from strong to moderate in their methodological robustness (see Appendix D for details), with the majority of findings based on Randomised Controlled Trials (RCTs) or quasi-experimental studies involving pre-and post-testing of pupils receiving school-based interventions. Key messages about the factors that (appear to) facilitate or inhibit the success of alcohol education and life-skills programmes are presented in Section 3.



The section begins with a brief overview of previous literature reviews focusing on the effectiveness of alcohol education and life-skills programmes for school-aged pupils and the methodological considerations involved in judging the impact and effectiveness of such interventions. The section goes on to present evidence from recent UK and international evaluations of the impacts of alcohol education and life-skills initiatives on young people's knowledge, skills and behaviours.

2.1 Alcohol education and life-skills programmes: background context and considerations

Some of the items of literature selected for this study include literature reviews of research evidence relating to the impacts and effectiveness of alcohol education programmes. This section of the report provides a brief overview of these studies in order to establish the context against which the findings of this current review can be placed. It also briefly covers some of the methodological considerations involved in judging the impact and effectiveness of alcohol education and life skills interventions.

2.1.1 Previous literature review findings

Overall, previous literature reviews present a mixed picture of the effectiveness of alcohol education initiatives for school-aged pupils. For example, in a review of universal school-based alcohol misuse prevention programmes, Foxcroft and Tsertsvadze (2011b) identified research evidence that showed no effects of preventive interventions, as well as studies that demonstrated statistically significant effects. While there was evidence to suggest that certain prevention programs can be effective, Foxcroft and Tsertsvadze (2011b) conclude there is no easily discernible pattern in the characteristics of programmes with positive results and those which had no effects.

In another literature review investigating the effectiveness of education in relation to alcohol, Cairns *et al.*, (2011) also surmised that the evidence base for effective alcohol education programmes was not clear enough for best practice to be identified and suggested caution in attributing importance to improved outcomes when evaluation findings were so mixed. They highlighted the difficulties in comparing interventions due to a diversity of outcome measures used across programme evaluations and acknowledged the limitations of studies that suggested positive impacts where effect sizes were small. Despite this, Cairns *et al.* (2011) did find some consensus in the research evidence to suggest that the prevention and control of harmful alcohol consumption should be tackled using multiple methods and strategies. While the most effective combinations could not be identified with certainty, some common themes associated with positive outcomes to emerge from the review include those programmes focusing on social norm change (i.e. those initiatives targeting incorrect perceptions about the attitudes and/or behaviours of peers) and life-skills training combined with initiatives intended to strengthen protective family factors and modify risk factors.

Velleman (2009) concluded that the alcohol interventions that have the best evidence for their efficacy are based on the family and found some evidence that a combination of family- and child focused approaches might work well. He also identified some evidence, although less strong, suggesting that interventions based around altering peer influence can work, by



improving young people's skills to resist peer pressure, or by improving their skills in dealing with general life issues, or by recruiting and engaging with peers to train them to become educators and attitude formation leaders. A systematic review by Karki *et al.*, (2012) also found similar results. The most effective interventions observed were those that improved family functioning, support, monitoring, normative beliefs, social skills, and self-efficacy. Karki *et al.*, (2012) also concluded that interventions which provide information from the beginning of adolescence and integrate individual factors with social factors (e.g. parents, teachers, peer groups, and schools) can help to reduce substance abuse.

In her review of prevention programmes in schools, James (2011) suggests there is still much we have to learn about exactly how alcohol education interventions function, as currently we are not sure why the same programme may produce significant results in one evaluation and not in another. However, she concludes that the alcohol education programmes with the strongest evidence base provide young people with information, correct misconceptions and teach interpersonal skills.

Across the previous literature reviews, three specific programmes were consistently viewed as most effective. This includes two interventions based on social influences and skills management; the *Life-Skills Training programme* and European Drug Addiction Prevention (EU-Dap) *Unplugged* programme, and a classroom behaviour management strategy for young children which aims to improve pupil behaviour and learning; the *Good Behaviour Game*⁵ (James, 2011; Velleman, 2009; Foxcroft and Tsertsvadze, 2011b).

2.1.2 Methodological considerations

The challenges in judging which programmes have had the greatest impact and the reasons for this, is commonly addressed in the literature with a number of studies highlighting that the standard scientific reporting of trial data rarely provides sufficient programme information to allow researchers to make generalisations about effective programme ingredients (Foxcroft and Tsertsvadze, 2011b). A further limitation is that RCTs can usually only determine whether or not a programme has been effective – rarely is it possible to determine the exact component of a programme that has led to its effectiveness (Tawana Bandy and Moore, 2008). Additionally, control groups are often found to be accessing alternative approved anti-substance use programmes, which increases the likelihood of observing a null or negative intervention effect (Hecht *et al.*, 2008).

There are also issues surrounding practitioner understanding of the goals of an evaluation, which can thwart attempts to effectively evaluate impact (McKay *et al.*, 2012). A major issue is that of local-level non-approved adaptation. There is a tension between what programme developers and evaluators want to ensure (near perfect fidelity to the programme's guidelines) and teachers' expectations of a degree of autonomy in their teaching and learning and, in some cases, a professional frustration with a perceived requirement to follow

⁵ The Good Behaviour Game does not have an alcohol-specific focus, and thus it is not a particular feature of this review. However, there is evidence that by keeping children engaged and improving behaviour in the classroom, it can significantly reduce later anti-social behaviour including the probability of developing any symptoms of alcohol abuse (James, 2011).



rigid guidelines (Faggiano *et al.*, 2010; Gazis, 2008; James, 2011; Velleman, 2009). If programme fidelity has not been investigated through a thorough process evaluation, it can be extremely difficult to ascertain whether outcomes are a result of the effectiveness (or otherwise) of the programme, or of the way in which it has been implemented and delivered at the local level. Finally, as the majority of the research evidence comes from other countries, the United States in particular, James (2011) suggests that this limits the extent to which conclusions can be drawn about the effectiveness of programmes in a UK context.

2.2 The impacts of alcohol education and life-skills programmes

Of the evaluations selected for this review, the impacts of alcohol education and life-skills programmes have been categorised into the following key areas:

- knowledge, awareness and attitudes towards alcohol
- alcohol-related decision-making skills and abilities
- alcohol-related behaviours.

These aspects are discussed in the following sections.

2.2.1 Knowledge, awareness and attitudes towards alcohol

Knowledge and awareness

There is substantial research evidence to suggest that school-based alcohol education and life-skills programmes are effective in improving the knowledge and awareness of school-aged children.

In England, the *Talk About Alcohol* resources developed by the Alcohol Education Trust for young people aged 11-16 have been found to be effective. The resources focus on harm minimisation and give teachers tools to encourage pupils to make informed decisions and manage difficult situations. Lynch *et al.*, (2012) compared the survey responses of young people from schools using the *Talk About Alcohol* resources with a matched comparison group of pupils in schools which did not. Pupils were surveyed soon after starting in Year 8 (aged 12-13 years old) before they received the intervention, then again at an interim stage, at least four to six months later. The interim findings from this longitudinal study showed that there was a statistically significant positive association between receiving the intervention and pupils' knowledge of alcohol. Pupils in the intervention group were also most likely to report having received helpful information about alcohol from PSHE lessons in which the intervention ran. A final follow-up in Year 9 had not yet taken place. The study had yet to seek feedback from teachers on the use of the intervention, so *reasons* for impact had not been determined.

The *School Health and Alcohol Harm Reduction Project (SHAHRP)*, adapted from the Australian version for use in Northern Ireland, has also been shown to make a significant difference to pupils' knowledge around alcohol. *SHAHRP* combines a harm reduction philosophy with skills training, education and activities designed to encourage positive



behavioural change concerning the harms experienced as a result of drinking alcohol. Pupils' knowledge was assessed at baseline and 12, 24 and 32 months after baseline. Compared to a control group, pupils (aged 14–16) receiving *SHAHRP* demonstrated increased levels of knowledge. Furthermore, when an external provider delivered *SHAHRP*, pupils were more likely to have higher knowledge gain than those receiving the same programme from teachers (for further details on the benefits of external professionals versus school staff see Section 3). These effects were maintained over an 11-month period, although some effects were diminished at the final follow-up. There were also differences among groups of pupils receiving *SHAHRP*, those classed as 'abstainers' at baseline showed greater increases in knowledge over time. In addition, the development of 'supervised' drinkers' knowledge (i.e. those who only drank under parental supervision) was less than half that of 'unsupervised' drinkers' knowledge development (McKay *et al.*, 2012).

Similarly, the *MEDALC* alcohol education programme, delivered by medical students in Wales, had a positive impact on pupils knowledge around alcohol. Young people aged 13–15 years old in seven secondary schools receiving the *MEDALC* programme self-rated their alcohol knowledge as significantly greater immediately after the sessions than beforehand. There was also evidence of instances where pupils had gone on to apply their knowledge gain, for example, a group of young people in one school subsequently led an assembly about alcohol issues. Although positive impacts were identified by comparing pupils' knowledge scores pre-intervention and post-intervention, the absence of a control group limits the wider applicability of these research findings (Alcolado and Alcolado, 2011).

International studies also confirm the benefits of school-based alcohol education and life-skills programmes on pupil's knowledge and awareness around alcohol. In Australia, the *Drug Education in Victorian Schools (DEVS)* programme for secondary school students in Years 8 and 9 (13-15 years old) was found to be beneficial for the young people involved. *DEVS* is a single programme for alcohol, tobacco and illegal drugs and places an emphasis on the influence of parents (through home-based activities) and the use of appropriate pedagogy (including equipping teachers with the right skills to deliver the programme). Research by Midford *et al.*, (2012) measured the differences among pupils who received the *DEVS* programme and a control group and found that the alcohol-related knowledge of *DEVS* pupils increased in comparison to the control group. Similarly, in their study of *PRIME for Life*, an alcohol risk reduction program for Swedish high-school students (aged 18-19) Hallgren *et al.*, (2011) found pupils' knowledge about the effects of alcohol consumption on health significantly increased after the intervention. However, these effects eroded over time (measured at 20 months post-intervention) which somewhat limits the efficacy of the program.

In the USA, a number of programmes have also been found to be effective. The *Reinforcing Alcohol Prevention (RAP)* program which teaches pupils about alcohol's harmful effects, led to particularly positive outcomes for the young people involved. In a study by Will and Sabo (2010), RAP was administered to 8th, 9th and 10th graders (13-16 years old) at four schools. Pupils' knowledge and awareness of alcohol risks improved significantly over time. Findings from the study showed that pupils were generally misinformed about alcohol and its related risks prior to the intervention, for example, mistakenly believing that alcohol is a stimulant; that binge drinking cannot lead to death; and misunderstanding the law/penalties relating to



alcohol, but were no longer misinformed afterwards. The *Juvenile and Adolescent Substance Abuse Prevention Program (JASAP)*, a curriculum-based prevention and health promotion program for young people between the ages of 13 to 18 years also achieved positive results. In an evaluation of *JASAP* by Talpade *et al.* (2008), a pre-test was administered to pupils establish their knowledge and attitudes baselines for substance abuse. After participating in the programme, pupils showed an increase in knowledge on the post-test verses the pre-test to questions related to decisions about drug and alcohol use. Pupils could more accurately list the 'pros' and 'cons' of engaging in substance abuse and also agreed with the statement that they knew significantly more about drug and alcohol misuse than they did before. No control groups or longer-term follow-ups were used in these studies, so only limited conclusions can be drawn.

Attitude change

Few of the sources selected for this study specifically measured the impact of alcohol and life-skills programmes on pupils' attitudes, although some authors examining the impact of programmes on alcohol consumption (see section 2.3) argue that attitude change is implicit in any reduced consumption behaviours. The studies that do focus on alcohol-related attitudes indicate variability in the extent to which alcohol and life-skills programmes can influence school-aged pupils. Overall, research finds very limited evidence of long-term positive effects on attitudes to alcohol.

One of the key studies to examine the effects of attitudinal change among school-aged children was an RCT carried out by Kovach Clark *et al.* (2010) who assessed the impact of *Project ALERT*, a USA school-based substance use prevention program on the pro-drug beliefs of adolescents (aged 11-16). The research examined *Project ALERT*'s effects on pupils' intentions to use substances (including alcohol) in the future, beliefs about the consequences of substance use, normative beliefs and resistance self-efficacy. *Project ALERT* instructors taught 11 core lessons to 6th graders (age 11-12) and three booster lessons to 7th graders (age 12-13). Pupils were assessed in the 6th Grade prior to the onset of the intervention, in 7th Grade after the completion of the curriculum, and again one year later in 8th Grade (age 13-14). However, the study found no evidence to suggest that *Project ALERT* had a positive impact on any alcohol or pro-drug beliefs. Similarly, in Australia, Midford *et al.* (2012) investigated the prevention effects of *the DEVS programme*. This study measured the difference in attitudes relating to alcohol and other drugs between pupils (13-15 years old) who received the intervention and a control group by means of self-report questionnaire. Results at follow-up showed that the programme did not engender more responsible attitudes towards drinking, although these were found to be already high at baseline for both groups.

More positive findings were identified by studies carried out in the UK. An evaluation of *SHAHRP* in Northern Ireland (for pupils aged 14-16) demonstrated that participants who received *SHAHRP* were significantly more likely to have 'safer' alcohol-related attitudes than participants in the control group. These effects were maintained over an 11-month period, although some effects were diminished at final follow-up. The study also identified differences between male and female pupils. Female attitudes towards alcohol became 'safer' with time compared to males' attitudes (McKay *et al.*, 2012).



Furthermore, in an evaluation of the *MEDALC* alcohol education programme for school-aged pupils in Wales, there was evidence from one of the schools involved of pupils' attitudinal change. Nine months after the medical student-led education sessions, the attitudinal survey conducted by the school revealed lower than average alcohol related risk-taking attitudes among its pupils, the first time this had been in case. Although anecdotal, teachers felt the sessions may have contributed to this result (Alcolado and Alcolado, 2011).

Finally, in an evaluation of the *Life-Skills Training Program* targeted at pupils' aged between 7 to 12 years old, Anderson and Moore (2009) in a quasi experimental study, surveyed the views of pupils' pre- and post-intervention. They found pupil's pre-existing views of Alcohol, Tobacco and other Drugs (ATOD) significantly differed from their post-intervention views, indicating that the *Life-Skills Training Program* provided participants with a more accurate understanding of substance abuse.

2.2.2 Alcohol-related decision-making skills and abilities

Decision-making abilities

Evidence of the effectiveness of alcohol education and life-skills programmes in improving pupils' alcohol-related decision-making skills is limited and varies. Overall, there is little research evidence demonstrating the effects of alcohol education and life-skills programmes on pupil's decision-making abilities. That which is available is inconclusive.

Positive impacts were identified for pupils participating in the *JASAP* prevention programme in the USA. *JASAP* is a curriculum based prevention programme which promotes healthy decision-making skills in order to help support pupils to make informed choices surrounding drug and alcohol use. Health outreach workers teach participants to identify and resist social pressure through role-play, discussion and small group activity. Talpade *et al.*, (2008) carried out pre and post tests of pupils (average age 13 years old) receiving *JASAP*, and results indicated that the majority of participants (94 per cent) made significantly more healthy decisions. Participants demonstrated progress along the 'stages of change' and 'readiness to change' scales used in the evaluation to measure impact, indicating that they had gained resources enabling them to peruse, maintain and apply the healthy decision-making skills learned in the programme to their life. Significant impacts were also observed among pupils from the USA in 7th (age 12-13) and 9th Grades (age 14-15) who received the *Take Charge of Your Life (TCYL)* programme. In another quasi-experimental study, Stephens *et al.*, (2008) administered a pretest survey to pupils prior to the program delivery both in the 7th grade and the 9th grade and a posttest survey following each curricula component approximately 90 days later. In analysis of pre and post tests, Stephens *et al.*, (2008), found that pupils who were exposed to the *TCYL* curricula and who gave more positive ratings of their instructor in terms of credibility and enthusiasm showed a small increase in their ATOD refusal and decision-making skills. No control groups were used in these studies, so only limited conclusions can be drawn.

Other programmes, found to have no impact on alcohol related decision-making, include the *keeping' it REAL (kiR)* programme and the *All Stars curriculum*. In an RCT carried out by (Hecht *et al.*, 2008), the *kiR* adapted for 5th Grade (age 10-11) pupils appeared no more effective than control schools' programmes in changing pupils' decision-making skills.



Similarly, when Wyrick *et al.* (2010) evaluated the distance-learning version of ATOD unit of the *All Stars curriculum* (which aims to reinforce positive qualities, including positive ideals and future aspirations, positive norms and personal commitments), they found no significant differences in the impulsive decision-making skills of pupils who received the All Stars curriculum and those who did not.

Confidence, assertiveness and resistance skills

There is little research evidence of the effectiveness of alcohol education and life-skills programmes in improving pupils' confidence and assertiveness/resistance skills. That which is available is inconclusive.

A small number of sources selected for the review evaluated the impacts of alcohol and life-skills education on pupils' confidence and resistance skills. A programme found to have some success was the *Information Psychosocial Competence Protection (IPSY)* programme. *IPSY* is a school-based intervention that combines the training of general life-skills with the acquisition of substance specific skills. In a longitudinal study of pupils in Germany, Spaeth *et al.*, (2010) found that *IPSY* decreased adolescent pupils' (aged 10.5 – 13) likelihood of drinking by enhancing their resistance skills. However, results were only found for young people with a 'normative' alcohol use trajectory. *IPSY* was not effective in reducing the acceleration of alcohol consumption for those students with a problematic alcohol use trajectory. *Preventure*, a personality-targeted intervention delivered by a qualified therapist and a co-facilitator, was also found to be effective for pupils in the UK. An RCT carried out by Conrod *et al.* (2011) found there was some evidence of effects on the drinking motivations of pupils (average age 14) with particular personality risk-factors. There was evidence of differential effects on drinking motivations for young people with particularly high levels of anxiety and those scoring highly on the 'sensation seeking' measure.

In contrast, two USA alcohol education programmes reviewed for this study were shown to have little effect on the resistance behaviours of pupils. In an evaluation of the *All Stars programme* delivered by distance learning, Wyrick *et al.* (2010) found no program differences for enhancing pupils' resistance skills. Two studies examined the effectiveness of *kiR* in improving pupils' alcohol resistance skills. While Hecht *et al.* (2008) found that *kiR* had no impact, Elek *et al.*, (2010) found negative outcomes. Students receiving *kiR* in either Grade 5 or Grade 7 (ages 10-11 and 12-13) weakened more than the control group in their personal norms against substance use, demonstrated by smaller increases in the number or resistance strategies they used. Furthermore, pupils in the control group (who did not receive *kiR*) increased in refusal self-efficacy more than those receiving *kiR*. As previously noted, both the *All Stars* and *kiR* were found to have no effect in relation to young people's alcohol-related decision-making which suggests a repeat negative effect of these specific programmes.

2.2.3 Behaviours

Frequency and quantity of drinking

There is a degree of evidence that alcohol education programmes reduce the frequency of consumption among pupils.



There were some positive effects on the drinking behaviours of school-aged pupils were found for adolescents (aged 10.5 –13) participating in the *IPSY programme*. *IPSY*, which combines the training of general life-skills with the acquisition of substance specific skills, reduced pupils' propensity to drink and the quantity of drinking per occasion during early adolescence. However, similar to findings of impacts on resistance skills (see above), positive effects were only identified among for those young people with a 'normative' alcohol use trajectory (Spaeth *et al.*, 2010). In another evaluation of a USA programme, *TCYL*, Stephens *et al.* (2009), found that pupils who were exposed to the *TCYL* curricula, and who gave more positive ratings of their instructor, had smaller increases in substance use over time. The effects however, were small.

Impacts on drinking and binge drinking levels were also found in a UK RCT which examined the long term effects of *Preventure*, a personality-targeted intervention for alcohol use in early adolescence. Although there were significant effects at six months post-intervention these effects were not sustained over the full 24 month follow-up period (Conrod *et al.*, 2011). The Australian programme, *DEVS* also had an impact on the drinking behaviours of pupils in Years 8 and 9 (13-15 years of age). Those taking part in the intervention were less likely to drink to get drunk, and those who drank, were persuaded to drink less (Midford *et al.*, 2012). However, the intervention could not be considered to be effective in terms of persuading students to remain abstinent: at the 20 month follow up, those receiving *DEVS* were no less likely to have tried alcohol than their control group peers.

Other programmes were found to influence the consistency of drinking behaviours among school aged children. A study examining the impact of SHAHRP in Northern Ireland, for example, found that pupils (aged 14–16) involved in SHAHRP were more likely to have drinking patterns that remained relatively low, at 32 month follow up, than to have patterns of growth; or patterns that were consistently high (McKay *et al.*, 2012). Similarly, Gazis (2008) examined the outcomes of DAPPY:8 in Australia (a drug prevention program based on social influence and alcohol harm minimisation models) and found that compared with their counterparts in control schools, Year 8 students (aged 12-13) who received the DAPPY:8 curriculum were more likely to remain as non-drinkers. Gazis (2008) also found a small increase in frequent alcohol use among pupils in the comparison group although the findings of this study are limited due to the lack of a long-term follow up phase.

There were mixed findings concerning the effectiveness of the *All Stars* curriculum on alcohol consumption. Positive impacts were identified by Giles *et al.* (2010), who investigated the relationship between pupil characteristics, teacher delivery skills and program outcomes. They found that pupils 'with a need for cognition' (i.e. individuals who are more likely to centrally process messages and who are better at recalling evidence than individuals who are less in need for cognition), were less likely to drink alcohol if their teachers used student-centered methods such as asking original questions, repeating questions and asking probing questions (for further details on teaching approaches see Section 3). Ringwalt *et al.* (2009), however, found no differences in alcohol use for those receiving the *All Stars* curriculum from a teacher who had received expert coaching or not. In the case of this particular study, there were limitations with the research design, as alcohol use at baseline was more than twice as high in the non-coached as in the coached teaching group. When the ATOD unit of the *All Stars curriculum* was adapted for distance delivery via



teleconferencing, Wyrick *et al.* (2010) found that the consumption of several specific drinks and drugs were reduced among students (including the consumption of wine). The differences between pupils receiving *All Stars* and the comparison group however, were non-significant.

This review also identified studies where school-based alcohol education programmes made no significant difference to the frequency of alcohol consumption among young people. In England, for example, the evaluation of the impact of '*Talk About Alcohol*' resources developed by the Alcohol Education Trust (Lynch *et al.*, 2012) found that there was an increase between the baseline and interim surveys (four to six months later) in the number of pupils saying they were drinking frequently (once a month or more) in both the intervention and comparison groups. However, the authors note that this increase is expected with age as exposure to alcohol increases. In addition, this was an interim finding prior to a follow-up one year later when impact of the resources might be expected. In a study of *PRIME for Life*, Hallgren *et al.*, (2011) found that while pupils' overall quantity (units per occasion) of alcohol consumed was lower five months after the intervention, the differences were the same for pupils who had *PRIME for Life* and those in the control group who did not.

Other studies found negative effects of school-based drug prevention programs. In an RCT investigating the effectiveness of *the kiR* programme in the USA, pupils were randomly assigned to different conditions (those receiving *kiR* in 5th Grade only (age 10-11); *kiR* in 7th grade only (age 12-13); *kiR* in 5th and 7th grade and a comparison group). The study found that students receiving *kiR* in the 5th grade reported greater increases in substance use (recent and lifetime) than control students (Elek *et al.*, 2010). This relates to similar research findings for other areas of impact, suggesting *kiR* has consistently negative effects. In an RCT of *Project ALERT* a substance use prevention curriculum (targeting cigarette, alcohol, marijuana and inhalant use) Kovach Clark *et al.* (2011) looked at how effective the programme was for schools making adequate yearly progress (AYP) and those not making AYP (i.e. non-AYP schools). Schools were randomly assigned either to receive *Project ALERT* or to a control group. In non-AYP schools, it appeared that students who received *Project ALERT* consumed more alcohol in the last 30 days than non-AYP schools in the control group, suggesting that *Project ALERT* had a negative effect on pupils in schools that fail to make AYP. Despite not being rigorously investigated as part of the research, Kovach Clark *et al.* (2011) suggest that the negative effects found in non-AYP schools may possibly be due to student-level learning issues (such as more difficulty understanding and utilising the cognitive strategies employed and higher levels of substance abuse leading to lower motivation/poorer achievement) and higher levels of teacher stress/lack of time to nurture relationships that act as protective factors.

Episodes of drunkenness

Evidence of the effectiveness of interventions to reduce episodes of drunkenness among school aged-children is limited and the findings are sparse and mixed.

An intervention with positive impacts was the *EU-Dap Unplugged* programme. *Unplugged*, based on a 'social influence' approach (incorporating the development of life-skills and correction of normative beliefs), aims to tackle pupil's experimental and regular use of



alcohol, tobacco and illegal drugs. The *EU-Dap Unplugged* curriculum is delivered by class teachers to 12–14 year-olds and consists of 12 one-hour units taught once a week by class teachers who underwent a 2.5-day training course. The first three units of the programme deal mainly with knowledge and attitudes, the second part of the programme focuses on normative beliefs and the final part of the programme centers on intrapersonal skills. In a European RCT, (which measured behavioral impacts, rather than changes in knowledge, skills and attitude) the *EU-Dap Unplugged* programme was found to be effective, both in hindering progression of substance use (particularly alcohol) and facilitating regression towards less intensive patterns use of among pupils (aged 12–14) compared to a control group who received a standard school curriculum. At the six-month follow-up, pupils showed decreased prevalence of episodes of drunkenness in the past 30 days, this effect persisted at the 18-month follow up. In addition, the percentage of pupils that remained with no episode of drunkenness in the past 30 days (from baseline to 18-month follow up) was significantly higher than in the control group. Among students declaring sporadic episodes of drunkenness at the baseline, a significantly higher percentage of control students than intervention students progressed to frequent episodes, and a significantly lower percentage progressed to no episodes (Faggiano *et al.*, 2010).

In contrast, in an evaluation of a Swiss school-based motivational interviewing programme delivered by drug and alcohol counselors, Gmel *et al.* (2012) found no significant differences for the frequency of pupils' heavy drinking occasions. In addition, no significant changes were observed for the number of drinks pupils consumed in a typical week or maximum number of drinks consumed on any one occasion. Pupils in the control group, who did not receive the intervention, had a greater reduction in consumption than those involved in the motivational interviewing programme. For females, there was a borderline significant reduction in frequency of heavy drinking occasions; while for males, there was a borderline significant reduction in number of drinks in a typical week in the last 30 days.

2.3 Summing up

This section of the review has identified studies that showed no effects of school-based alcohol education and life-skills programmes on young people (and in a small number of instances negative/harmful impacts) as well as studies that demonstrated positive outcomes. The strongest evidence base related to the benefits of providing young people with knowledge about alcohol. This finding corresponds to other reviews of the effectiveness of substance misuse programmes (for example, Foxcroft and Tsertsvadze, 2011b; Cairns *et al.*, 2011; Velleman, 2009; Karki *et al.*, 2012). A likely interpretation of the findings is that some school-based interventions are only effective for particular students in particular settings. From the impact studies selected for this review, it is not always clear why some prevention interventions seem to work and others do not. Section 4 aims to distinguish the characteristics that distinguish programmes with positive results from those with no effects.



3. Which Programmes are most Cost Effective?

Key Messages:

- Very few studies have investigated the cost benefits of universal school-based alcohol education programmes.
- There is some limited analysis of the costs incurred in running individual programmes, but no evidence as to how these compare to those of alternative programmes.
- World Health Organisation research suggests that school-based alcohol education is not cost effective in reducing alcohol-related harm in any European region. In contrast, alcohol pricing and taxation policy are cost-effective throughout Europe.
- However, some authors hypothesise that with just a very small effect size in reduced alcohol consumption rates among young people as a result of alcohol education programmes, the cost benefits to society could be substantial.
- There is evidence of one targeted residential programme in the USA (ChalleNGe), and of one specialist drug and alcohol service in the UK that have provided substantial cost benefits to individuals and society. These are not universal alcohol education programmes however.

There are just a small number of identified studies that consider the costs and benefits of alcohol education and related programmes, and across these there is a lack of conclusive evidence as to cost effectiveness. When appraising these studies, we were mindful of the three main strands of any assessment of value for money:

- **Economy** – how are programmes delivered at minimum cost?
- **Efficiency** – how do programmes maximise their reach with available resources?
- **Effectiveness** – which programmes have the greatest impact per unit cost?

The reviewed studies provide some evidence of the economy of programmes and of their effectiveness, but we have no substantial evidence related to efficiency. The main issue, however, is that very few of the studies have investigated the economy or effectiveness of **universal school-based** alcohol education programmes specifically. In the interests of providing some commentary on the value for money of alcohol-related interventions, we have increased the scope of this section of the review to include:

- Voluntary, extra-curricular or targeted educational programmes (either alcohol specific, or more broadly related to substance misuse).
- Specialist drug and alcohol prevention services, which are non-school or non-education based.

Additionally, we have been able to draw on the findings of a small number of reviews. These cite evidence that is outside the date parameters of this review, but nonetheless relevant to our interests.



3.1 Economy – at what cost are programmes delivered?

Kilmer *et al.* (2011) undertook a detailed cost analysis of project *CHOICE* – an after-school voluntary alcohol and drug prevention programme for 11 to 14 year olds in the USA. The median overall ‘societal’⁶ cost to deliver project *CHOICE* across eight schools was found to be \$20,823.10 and the median cost per participant was \$226.26. The authors also undertook some hypothetical variation analysis (by using nationally representative (rather than local-level) data for labour, space and displaced class time costs), and showed as a result, that the median cost per participant may have been as low as \$182.06. The authors do not provide any indication of how these costs compare to those of other similar programmes however.

Alcolado and Alcolado (2011) note that the *MEDALC* programme – an alcohol education programme for 13-15 year old students in Wales, which was delivered by medical students – was delivered at relatively low cost to schools. This was because it was delivered by medical students as an element of their own curriculum time with no direct costs to the schools involved. Teaching materials, equipment and administrative support were all provided through pre-existing undergraduate funding allocations. No analysis of the indirect costs of providing the programme have been calculated however, so the overall cost of *MEDALC* is unclear.

3.2 Effectiveness – what is the impact per unit cost?

Most evaluations of cost effectiveness consider not just the impact of programmes on young people’s outcomes, but the duration of that impact. This is because most economic models assume that, for real savings to be made to the public purse, or for differences to be made to young people’s long-term life chances and their ability to contribute as effective members of society, then there needs to be some lasting effect in terms of their reduced consumption patterns. Consideration needs to be given to both long-term health benefits for the individual and to wider societal benefits (such as reduced health service, criminal justice service, and welfare costs) (James, 2011).

Research undertaken by the World Health Organisation (Anderson, 2009) summarises evidence from across Europe on the cost effectiveness of interventions to reduce alcohol-related harm. The review is wide ranging and focuses on many policies and interventions – not just those that are educational. This enables the authors to make a judgement about the types of intervention that have greatest effectiveness. The headline finding from the review is that: *‘there is extensive and consistent evidence that school-based and education programmes do not lead to sustained changes in [drinking] behaviour’* (p. 32). However, the authors find some evidence that such programmes can impact on student knowledge and attitudes. School-based education is found not to be cost effective in reducing alcohol-related harm in any European region. In contrast, the most cost-effective policies, according to WHO’s analysis model, related to alcohol pricing and taxation policy (tax increases of 20-50 per cent were found to be highly cost-effective throughout Europe).

⁶ ‘Societal’ costs include both monetary and non-monetary inputs – for example travel time.



Some individual evaluations of the cost effectiveness of specific interventions paint a slightly more positive picture however. In their evaluation of the *EU-Dap Unplugged* substance use prevention programme, Faggiano *et al.* (2010), conclude that this classroom-based curriculum contributed to a delay in the onset of substance use. They present a hypothesis that the impact of the program, measured by Numbers Needed to Treat (NNTs), is encouraging and sustainable over time:

Implementing the program in one to two classes could prevent one case of alcohol abuse, as well as one case of cannabis use. The size of NNTs is comparable to that of several effective public health interventions, such as vaccination for flu, treatment of hypertension in the elderly and statins for primary prevention of myocardial infarction, which suggests a favourable cost-effectiveness, given the overall low expenditure of the program. (pp. 62–63)

Similarly, Foxcroft and Tsertsvadze (2011b) claim that even where the effects of universal programmes in delaying initiation into substance use for a few years are small, this can lead to important savings to society over an individual's lifetime. They also note:

The United Kingdom National Institute for Health and Clinical Excellence (NICE, 2010) has estimated that a national alcohol misuse prevention program in schools would be a cost effective use of public money if it cost £75 million and achieved at least a 1.4% absolute reduction in alcohol consumption amongst young people, a very small effect size (p. 3).

However, all of these examples are hypotheses rather than firm evidence of the cost effectiveness of universal alcohol education programmes, and work on the assumption that a reduction in adolescent consumption can be achieved through education-based programmes. A small number of the reviewed items undertake full cost effectiveness analyses, and the results of these are presented below. It is important to note here that none of these are analyses of universal alcohol education programmes, however.

a) Cost effectiveness of a targeted residential drug and alcohol programme

Perez-Arce *et al.* (2012) undertook a cost-benefit analysis of the *National Guard Youth Challenge Program (ChalleNGe)* in the USA. This programme is an intensive residential and mentoring programme for young people who have dropped out of high school and are aged 16-18. The evaluators found that the estimated return on investment in *ChalleNGe* supports ongoing public investment in it. The *ChalleNGe* programme was found to generate \$2.66 in benefits for \$1 spent on it (a return on investment of 166 per cent). The evaluators considered outcomes that related to education and employment only, and comment that there are likely to be a variety of wider social benefits that were not captured by the data. They surmise that their assessment of the cost benefit of the *ChalleNGe* programme is probably an underestimation as a result.

b) Cost effectiveness of specialist drug and alcohol services

Frontier Economics (2011) undertook a cost-benefit analysis of the costs and benefits associated with a specialist drug and alcohol treatment service for young people. The young



people identified for treatment were aged 16-18 and had some form of existing drug dependency. Alcohol was identified as the primary drug dependency for 37 per cent of programme participants. This is a UK study that was produced for the Department for Education (DfE). The evaluators conclude that the benefit to society of providing such treatment is likely to significantly outweigh the cost of provision. In the short term, benefits are due to the immediate impacts of a reduction in rates of offending. In the longer term, treatment can prevent the escalation of young people's substance abuse and can have a significant impact in reversing a lifetime reduction in earnings. Overall, the evaluators estimate a benefit of £4.66 to £8.38 for every £1 spent on young people's drug and alcohol treatment.

3.3 Summing up

Findings such as those above are encouraging, and suggest that intervening with young people can make a positive difference both to themselves, and to wider society. However, the evidence related to the cost benefits of universal alcohol education programmes is, at best, hypothetical and, at worst, negative. There appears to be a current need for more detailed cost benefit analyses of a range of universal alcohol education programmes, in order to establish the overall value for money of such approaches.



4. What factors facilitate or inhibit the success of programmes?

Key messages:

- Programmes are not always transferrable from one situation or context to another. There needs to be caution when transferring lessons from effective programmes.
- Effective alcohol education curricula achieve a good balance between: accurate and consistent information giving and knowledge building; skills development (including refusal, self management, assertiveness and self efficacy skills); and sensitivity to factors influencing student attitudes and behaviours.
- Effective teaching and learning approaches include those that are interactive rather than didactic and those that generate an atmosphere of openness. Passive teaching approaches are associated with less favourable results.
- Course delivery by external professionals such as health workers and counsellors can sometimes lead to more positive outcomes than teacher-led delivery, and specialist school staff achieve more positive results than non-specialist teachers.
- There is tentative, but inconclusive, evidence that effective alcohol education programmes focus on prevention rather than sanction, and on harm-reduction rather than abstinence.
- It is possible to introduce alcohol education programmes too young or too old. The optimum age for effective exposure is unclear, but seems to be somewhere between the ages of 12 and 14. There is evidence that a series of short-duration interventions delivered through childhood, with booster sessions into adolescence, is an effective approach. Whatever age programmes are introduced, the cognitive expectations and teaching and learning approaches must be age appropriate.
- Parents and families act as critical protective agents for young people. Where families have been included in interventions, results are usually positive. Programmes must be designed to be accessible for parents and carers.
- In some instances, parental support is lacking and parents/carers cannot be engaged. In such instances, schools have an increasingly important role to play in fulfilling a protective role.

This section draws upon a range of sources. Some are research studies and reviews that explore various features of alcohol education and life-skills curricula. Others are evaluations of specific interventions (many of which have been discussed in the previous section). We have drawn on the latter items in order to apply relevant learning about the factors that enable or prevent programme effectiveness. Unlike section 2, this section is less concrete in its assessments of what does and does not 'work'. Rather, it attempts to identify key messages about the factors that appear to facilitate or inhibit the success of alcohol education and life-skills programmes. Where there is scant evidence on a particular issue, this is highlighted in the text. Where there are current gaps, these are identified. All themes covered in this section have emanated from the topics discussed within the reviewed items.



4.1 Situation and context

When considering the transferability or replicability of a programme, it is important to be mindful of the situation and context in which it has been implemented. Foxcroft and Tsertsvadze (2011b) demonstrate that a prevention programme shown to be effective in a setting or country where there is a low prevalence of adolescent alcohol misuse, may be ineffective in a setting where adolescent drinking is the norm and where social and cultural pressures to drink are powerful. At a micro level, child-centred factors can have a similar effect. Gazis (2008) evaluating the *DAPPY:8* school drug education programme with Year 8 students in Australia, found that levels of classroom disruption were associated with programme ineffectiveness. This suggests that, while there are a number of messages in this review about programmes that have had a positive impact on children and young people's outcomes, there should be a degree of caution when considering transferable lessons from those programmes, especially where they have been implemented and trialled overseas.

There is some, very limited, evidence that positive outcomes may be achieved for more young people by introducing flexibility in the ways in which a programme is implemented and accessed. Anderson and Moore (2008), evaluating a school-based education and counselling programme in the USA, found that programme effectiveness was enhanced by adoption of a 'multiple setting' approach. They comment: '*Such interventions should include various settings, such as school counselling, private practice, group homes, inpatient settings etc.*' (p. 17). Increasing the range of settings may, in some cases, improve outcomes.

4.2 Programme and curriculum content

A substantial number of the reviewed items focus on programme and curriculum content issues when identifying the factors that facilitate or inhibit programme success. There is a reasonable amount of evidence on desirable curriculum content. However, the literature does not always shed a great deal of light on some of the questions about the best structure of alcohol education programmes. For example, are alcohol education programmes best delivered in combination with education about other substances?; should alcohol education be taught discretely, or as part of broader personal, social and health education (PSHE) lessons?; or is alcohol education best taught through long or short courses? In terms of curriculum content, the main messages are that effective curricula:

- achieve a good **balance** between: accurate and consistent information giving; skills development; and sensitivity to factors influencing student attitudes and behaviours;
- are preventative, rather than punitive, in nature; and focus on harm-reduction rather than abstinence.



4.2.1 Curriculum balance

Taking the issue of balance first, a number of authors find that educational preventative programmes are most effective when they are grounded in theory, supported by empirical evidence and combine anti-drug information giving with skills development:

Effective school-based intervention should have a clear theoretical and conceptual basis [and should] combine psycho-educational and skills-building components' (Karki et al., 2012, p. 408).

Prevention efforts which utilise multimodal approaches, usually knowledge, skills enhancement and affective approaches appear to be superior in their impact over those which seek to enhance only knowledge (McKay et al., 2012):

Tze *et al.* (2012) identify a range of programme features which, collectively, have the scope to create a well-rounded programme. These include:

a) Knowledge building

Adolescents are often reported to consider themselves unique and invulnerable. Therefore, equipping them with knowledge of the effects of drugs (including alcohol) is important in helping them to develop an understanding of the need to refuse advances: *'By discussing the adverse effects of substance abuse in an intervention program, adolescents can be better prepared to reason and make sensible decisions when they receive drug use offers'* (Tze *et al.*, p.125). Citing a variety of authors in their review of substance use interventions, Karki *et al.* (2012) note that provision of information about the effects of alcohol and other substances to adolescents was reportedly the most effective means of reducing or preventing substance use. Ogenchuk (2012) notes that all information provided to young people must be accurate and current, and consistent with other messages received through school and via the media.

b) Empathising with and responding to the 'adolescent experience'

Adolescence is a time of experimentation and attempts to develop a sense of identity (Tze *et al.*, 2012). In some cases, preventative programmes may need to address underlying mental health and social issues, which predispose some young people to engage in risky behaviours (Lemstra *et al.*, 2010). Indeed, the fact that some adolescents have complex needs suggests that there can be a need for interventions that address multiple adolescent health behaviours simultaneously, rather than single risk behaviours such as alcohol misuse in isolation (Lemstra *et al.*, 2010). Irrespective of the nature of the intervention however, all preventative programmes have an important role to play in providing opportunities for:

- **social skill and decision-making development** – for example through developing refusal, self-management, and assertiveness skills
- **social learning** – by tackling issues related to peer influence and *'engaging students in learning how to resist social pressure to use drugs'* (Tze *et al.*, 2012, p. 127). Effective programmes also focus on developing appropriate normative beliefs towards substance abuse: *'that emphasise the rarity and unacceptability of drug use'* (Hansen, 2010, p. 92)



- **self efficacy** – research demonstrates that an individual's personal ability to refuse substances negatively predicts his or her future drug and alcohol use (Tze *et al.*, 2012; Walker *et al.*, 2011). Programmes that enhance students' refusal self efficacy and develop reasoning skills can be effective.

Reinforcing all of the above points, Velleman (2009) in a review of UK and international literature, finds that a 'life-skills' training approach, which teaches social resistance and general social and personal competence skills, is the most promising approach among interventions that are wholly school based.

4.2.2 Harm-reduction versus abstinence?

Two of the reviewed items suggest that harm-reduction strategies may have more beneficial effects on young people than abstinence-based programmes. Neither of these items have rigorously tested this theory however, so this remains an assertion at present. McKay *et al.* (2012), in their evaluation of an adapted version of *SHAHRP* in Northern Ireland, believe that programmes such as *SHAHRP* are based on a realistic premise that some young people do drink, and therefore that programmes focusing on harm reduction are likely to lead to healthier outcomes for young people than those promoting abstinence alone. The authors comment:

One observation on abstinence-based approaches with young people is that they do not support the individual to develop their own knowledge and skills about ways to avoid use-related harms. Although harm reduction interventions for young people are sometimes controversial, they are supported by national alcohol policy in the United Kingdom and our data showed no iatrogenic effects of participation in SHAHRP (p. 117).

Similarly, Midford *et al.* (2012), in their evaluation of the Australian programme *DEVIS*, found that intervention students who were already drinking were more likely than similar control students to drink less overall and to reduce their planning to get drunk as a result of an effective harm-reduction focus. They were also more likely to talk to their parents about alcohol. However, there were no differences between the groups in terms of their abstinence levels.

4.2.3 Preventative versus punitive approaches?

In similar vein, there is some evidence that preventative programmes are more effective than punitive approaches (such as school-based drug testing for example) in reducing adolescent alcohol consumption. The reality though is that few of the reviewed items explore the relative benefits of these two approaches, so these findings must be considered tentative. Tze *et al.* (2012) conclude, on the basis of their review of the effectiveness of these two prominent approaches, that school-based prevention programming is more effective than drug testing in preventing and reducing substance abuse. Their arguments are based around the following points:

- Drug testing is limited to deterring substance abuse at the time of the offence, and does not equip adolescents with the necessary knowledge about the effects of drug use to help them make informed decisions in the future.



- Drug testing may worsen the adolescent-school relationship, limiting the opportunities for healthy school attachment. School can be an important protective factor for students who have a weak attachment to their parents and communities and who are vulnerable to drug abuse: ‘A significant protective factor against later misuse of drugs is attachment to school’ (James, 2011, p. 11).
- Drug testing does not attempt to rectify misconceptions of social norms – i.e. that substance use is common and acceptable among young people.

4.3 Teaching and learning styles and characteristics

The literature also draws our attention to the importance of good teaching and learning in promoting effective alcohol-related outcomes for children and young people. At a broad level, evidence suggests that programme deliverers need certain characteristics. They need to be approachable and empathetic, and viewed as relevant and credible by young people. Younger children are more likely than older children to rely on their instructor as a source of information and expertise, as they are less likely to have experience of the topics discussed, whereas older children are more likely to need someone who can empathise and help develop coping strategies and skills (Stephens *et al.*, 2009).

4.3.1 What are the best teaching and learning styles?

A number of themes emerge from the reviewed literature. In summary these are:

- External professionals or specialist school staff can sometimes achieve better results than non-specialist teachers, although the evidence is not conclusive.
- Interactive and open strategies have more positive effects than didactic approaches.
- Effective use of audio-visual and ICT resources can have positive impacts on some young people.

a) External professionals versus teachers

There is some evidence that where external professionals such as health and drug workers or counsellors are involved in programme delivery, the impacts on young people’s outcomes are enhanced. Cairns *et al.* (2011), through a systematic review of school and family linked alcohol education programmes, found that involvement of external specialists in alcohol education programmes was frequently associated with effective outcomes. Additional specific examples are identified below:

- Alcolado and Alcolado (2011) found that students in Wales responded well to tuition about alcohol by medical students due to high levels of specialist knowledge and the medical students’ ability to relate well to the school students.
- Talpade *et al.* (2008) found that students in the USA involved in a substance abuse prevention programme related well to health outreach workers who acted as their mentors. The authors surmise that the support provided by specialist health workers made the students more receptive to the information received.

However, one review of drug prevention in UK and international schools found that when programmes were delivered by police officers the effects on students were no greater than when delivery was by school teachers. The same study also found that evidence about the



relative benefits of peer delivery is inconclusive (James, 2011). Similarly, Cairns *et al.* (2011) note that although involving young people in the design, development and implementation of alcohol education interventions has been recommended as an effective approach, there is no evidenced relationship between such an approach and improved alcohol behavioral outcomes.

b) Specialist versus non-specialist school staff

In their evaluation of the *All Stars* substance abuse prevention programme in the USA, Ringwalt *et al.* (2009) found that students who were taught by their regular classroom teachers generally manifested poorer outcomes than those who were taught by other types of school staff such as counsellors or physical education teachers. In fact, classroom teachers' effects on all measured outcomes were uniformly negative compared to non-teacher colleagues.

Although the evidence cited above is often international in nature and sometimes based on findings from evaluations of substance abuse programmes rather than those specific to alcohol abuse prevention, it does suggest that where 'experts' of one type or another are used, there is a greater likelihood that student outcomes will be improved than where programmes are delivered by non-specialist school staff.

Of course, the reality is that resources are not always available to employ specialist staff to deliver, or part-deliver, alcohol education programmes. With this in mind, the following sections identify features of effective teaching and learning that can be learned from and built upon when developing training for those delivering alcohol education programmes, whoever they may be.

c) Interactive teaching and learning strategies

A number of authors provide evidence of interactive strategies having more positive effects on young people's outcomes than didactic approaches (Anderson and Moore, 2008; Giles *et al.*, 2008; James, 2011; van der Kreeft *et al.*, 2009; Tze *et al.*, 2012). Tobler *et al.* (2000) claim: '*Research has shown that interactive curricula have been far more effective than non-interactive ones in preventing both illicit and legal drug use among adolescents*' (p. 169). This finding is reinforced by Giles *et al.* (2008)'s evaluation of the delivery of the *All Stars* substance use prevention programme in the USA. The authors found that teachers who accepted students' ideas and asked original, repeated and probing questions (loaded on a factor called 'student-centred methods' in the statistical analysis) saw improvements in students' levels of idealism about their futures and in their beliefs that substance use was not normal among their peers. Midford *et al.* (2012) also note that delivery styles that are 'memorable' for students help with their recall and retention of learning. In contrast, passive teaching approaches and variable levels of teacher enthusiasm are associated with null or negative results.

Gazis (2008), in an evaluation of the *DAPPY:8* programme in Australia, found that teachers often perceived interactive teaching styles as having a greater propensity for class disruption and tended to perform fewer interactive tasks in favour of passive activities. Similarly, Giles *et al.* (2010) found that heavy use of classroom management strategies was associated with



reduced levels of student engagement. The authors comment that: *'teachers' delivery skill has been found to be particularly important in promoting interactivity in prevention programs'* (p. 396). This suggests that the skills needed to create an interactive learning environment should not be assumed, and in some instances will need to be nurtured and developed.

Tobler *et al.* (2000) note that interactive programmes should include developmentally appropriate methods such as peer discussion, group problem solving, and decision-making. Certainly, discussions with adolescents involved in the *RAP* programme in the USA, showed that the young people themselves preferred hands-on activities to lecture-style information (Will and Sabo, 2010).

d) Audio-visual and ICT resources

There is very limited, and sometimes contradictory, evidence about the relative benefits of the use of audio-visual and ICT resources in supporting young people's learning. This is partly because the evidence is piecemeal – providing evidence about specific types of technology or approach, rather than about the use of ICT as a learning resource in general.

Wyrick *et al.* (2010), in an evaluation of a drug prevention programme in the USA delivered by distance learning, found a number of positive benefits to this approach. Students found the distance education class more interesting than their regular health class because:

- the distance instructor held their attention better than their regular class teacher
- they were able to participate in online activities that they thought did an excellent job of facilitating learning
- they competed with another distance learning class on a daily basis
- they felt less intimidated about being honest with their instructor due to the separation by distance
- individualised feedback was quickly received.

The reasons for many of these positive benefits are possibly less to do with the distance-learning approach and the technology used than to do with highly effective teaching and learning strategies (that could also be applied in a classroom setting) and the use of expert instructors. However, the finding that the distance between student and instructor seemed to reduce inhibitions is interesting, and is worthy of consideration in the future development of programmes.

Students interviewed in relation to the *RAP* programme in the USA, which targeted young people of driving age, said that they found the use of motor vehicle crash photographs and related videos very powerful and memorable (Will and Sabo, 2010). However, James (2011) and Ogenchuk (2012) found that programmes that used fear-based approaches and 'scare mongering' were ineffective and that students disliked the use of such tactics. 'Shock' images are only one type of audio-visual resource of course. There is little evidence in the literature about the relative benefits of different types of resources. This suggests that audio-visual aids must be accessed and used carefully and judiciously alongside other classroom-based strategies that develop knowledge and build personal skills.



4.4 Age appropriateness

This review has not been able to find definitive answers to the question of when it is best to introduce alcohol interventions to children and young people, although some studies have suggested age ranges that may be too early or late and therefore make a useful contribution to the debate. It is important to note here, that evidence of the optimum age for introducing alcohol education is inconclusive.

Alcolado and Alcolado (2011), in their evaluation of an alcohol education programme delivered by medical students in Wales, found that Year 10 students (aged 14-15) believed that their sessions should have been delivered at a younger age, before some of them had started drinking. Year 9 students (aged 13-14), however, received the same programme well. Evidence that it is possible to introduce programmes too late is illustrated in a study by Hallgren *et al.* (2011). The authors' evaluation of *PRIME for Life*, an alcohol risk reduction programme in Sweden, found that the age group targeted (18-19 year olds) was much too old to have beneficial effects. On the whole, students in this study showed patterns of alcohol consumption that were similar to those of adults. Some were already showing patterns that were similar to people with an established pattern of misuse and hence educational effects were minimised.

Although it is possible to introduce a programme too late, there can be benefits in having follow-up and information refresher courses as students become more mature. Students in Canada highlighted a need for an information refresher at the age of 16-17 when alcohol use is becoming more prevalent, and when students are beginning to consider driving. Cairns *et al.* (2011), in their systematic review of school and family linked alcohol education programmes, found that short-duration interventions were highly effective, particularly when reinforced with booster initiatives as children and young people become older. The authors suggest that a succession of short-duration interventions delivered through childhood and adolescence is an ideal approach.

Although it is possible to introduce a programme too **late**, there is inconclusive evidence about how **early** programmes should be introduced. The evaluation of the 5th Grade (age 9-11) *Keepin' it REAL* substance use prevention programme in the USA showed no positive effects for the intervention group over the control group and, indeed, found that intervention students were significantly more likely than control students to think that a proportion of their peers had tried substances (Hecht *et al.*, 2008). The authors surmise that this might indicate that a 'norms and resistance skills' model is inappropriate for use with a young cohort. In other words, the programme had the undesirable effect of sowing seeds of understanding about substance use (especially among those with limited prior exposure) rather than succeeding in actively encouraging resistance. This suggests that careful thought needs to be given both to the appropriate introductory age for alcohol prevention programme involvement, but also to the best teaching and learning strategies for use with different age groups.



4.5 Parental engagement

A number of the reviewed items highlight that parents and families are critical protective agents for young people, helping to prevent future alcohol abuse and acting as an important source of information and advice (Anderson and Moore, 2008; Lynch *et al*, 2012). It is generally accepted that involving parents or carers in students' learning is a positive goal. Karki *et al.* (2012) note that many studies have shown positive outcomes for substance use by including the family, and emphasise the importance of ensuring that programmes are easily accessible to families. van der Kreeft *et al.* (2009) identifies three programme components that can be applied to help parents/carers to support their children effectively:

- General parenting skills that help parents to maintain cohesion and positive control, as well as to solve conflicts.
- Information and skills related to substances to increase parents' knowledge and help them communicate to their children appropriate attitudes and behaviours.
- Skills supporting self-confidence as parents.

Velleman (2009), in a review of alcohol education programmes, found that interventions based on the family were the most effective at moderating adolescent alcohol consumption and attitudes: *'Family-based prevention approaches have effect sizes of between two and nine times greater than approaches that are solely child based'* (such as school-based alcohol education programmes) (p. 4). However, the author also finds some evidence that combinations of family- and child-based interventions can work well, and additional evidence (albeit less strong) that interventions working solely with young people (such as school-based educational programmes), can also be effective.

Inevitably, in some instances parents cannot be engaged and parental support is lacking (although there is a lack of evidence of why parents can be hard to engage and whether this differs by 'type' of parent). An evaluation of the *EU-Dap Unplugged* programme, Faggiano *et al.* (2010) found, for example, that average attendance at parent seminars was very low. In such instances, on occasions where children are at high risk, or as children become more mature and less willing to be influenced by their parents or carers, schools and other institutions (and the programmes that they offer) have an increasingly important role to play in fulfilling a protective role. Anderson and Moore (2008) comment:

Protective factors from substance use are undoubtedly enhanced by parental involvement...However, for youths who are at greater risk, intervention and education becomes an important preventative measure to be incorporated (p. 17).

4.6 Summing up

In spite of the fact that we do not have conclusive research evidence about all the factors that facilitate or inhibit the success of programmes, this section has suggested that effective alcohol education and life-skills programmes contain a number of key elements. Typically, they consider effective curriculum content, adopt inspiring teaching and learning approaches, take account of the optimum age at which interventions should be introduced, and endeavour to work in conjunction with the parents or carers of young people. When



programmes are developed with these key components in mind, they have the capacity to make a positive difference to the lives of young people.



5. Conclusions

Research data gathered through RCTs or quasi-experimental studies often provides mixed messages about the effects of alcohol and life-skills programmes on pupil outcomes. In spite of this challenge, our review identifies a range of beneficial outcomes for children and young people from involvement in alcohol education and life-skills programmes, and also highlights some of the features of effective programmes that appear to lead to success.

This review has found that the most effective alcohol education curricula seek to maintain a good balance between: accurate and consistent information giving and knowledge building; skills development; and sensitivity to factors influencing student attitudes and behaviours (See Section 4.2). However, we have also found that pupil's gains have been greater in relation to some of these objectives than others. In order to summarise these gains, we use the classification: substantial evidence; degree of evidence; and little evidence. It is important to note that this classification relates to the strength of reported impact on young people, rather than to the methodological strength or robustness of the reviewed items. We assessed the methodological robustness of items as part of our selection process, as outlined in Appendix D.

- **There is substantial evidence** of alcohol and life-skills programmes having a positive impact on school-aged children's knowledge and awareness of alcohol-related issues.
- **There is a degree of evidence** that alcohol and life-skills programmes sometimes have a positive impact on school-aged children's behaviours (more so in relation to frequency and quantity of drinking than in relation to episodes of drunkenness).
- **There is only a little evidence** of alcohol and life-skills programmes having a positive impact on school-aged children's attitudes, decision-making abilities and confidence and assertiveness skills. The evidence base for all of these outcomes is patchy, and the findings of different studies are often contradictory.

5.1 Substantial evidence of increased knowledge and awareness

This review has identified a number of programmes, both in the UK and overseas, that have increased pupils' knowledge and awareness of alcohol-related issues. These programmes include, in the UK: *Talk About Alcohol* resources (England), *SHAHRP* (Northern Ireland) and *MEDALC* (Wales); and internationally: *DEVS* (Australia), *RAP*, *JASAP* and the *Lifeskills Training Programme* (USA) (see Section 2.2.1 for full details). Across these programmes, pupils developed an enhanced understanding of the effects and risks of alcohol consumption, as well as some of the legal issues related to alcohol use. Specifically, they developed greater accuracy in their understanding of the use, abuse and consequences of alcohol consumption.

This overall finding is supported by cost effectiveness research undertaken by the World Health Organisation (Anderson, 2009), cited in Section 3.2. This study summarises evidence from across Europe on the cost effectiveness of interventions to reduce alcohol-related harm. While the study found that school-based and education programmes do not lead to sustained changes in drinking behaviour, such programmes were found to have an impact



on student knowledge about alcohol. While there is substantial evidence identified in this review relating to improved knowledge and awareness, this is partly because more evaluations measure knowledge and awareness than behaviour change.

The reasons for the effectiveness of alcohol and life-skills programmes in enhancing pupil knowledge of alcohol-related issues are difficult to deduce, because the standard reporting of RCT data rarely provides sufficient programme information to allow researchers to make generalisations about effective programme ingredients. However, by building on the small number of details about specific programme features outlined in Section 2, and the broader programme facilitators identified through the generic literature on alcohol education outlined in Section 3, we can begin to identify some of the reasons for programme success in relation to enhanced knowledge and awareness. We find some common messages between the following programme facilitators (outlined in Section 3) and specific features of the named programmes found to be effective in Section 2 of this report:

- **The importance of appropriate pedagogy** – The *DEVS* programme in Australia saw an increase in knowledge in intervention compared to control pupils. This programme emphasises the importance of appropriate pedagogy, including equipping teachers with the right skills to deliver the programme (See Section 2.2.1). Effective teaching and learning approaches include those that are interactive rather than didactic. Passive teaching approaches are associated with less favourable results (See Section 4.3.1).
- **The protective role of parents/carers** – The *DEVS* Programme in Australia which saw positive knowledge gains for intervention pupils emphasises the importance of working alongside parents through various home-based activities (see Section 2.2.1). Parents and families act as critical protective agents for young people. Where families have been included in interventions, results are usually positive (see Section 4.5).
- **Delivery by external professionals** – Pupils involved in *SHAHRP* in Northern Ireland who received tuition from an external professional rather than a class teacher had higher knowledge gains. Similarly, the *MEDALC* programme in Wales, which was delivered by medical students, led to positive knowledge outcomes for pupils (see Sections 2.2.1 and 4.3.1), although there was no robust testing of the benefits of external professionals in the latter study.

5.2 A degree of evidence of improved behaviours

While this review identifies some alcohol and life-skills programmes that have had a positive impact on school-aged children's alcohol-related behaviours, it is important to note that there is also contradictory evidence. Unlike our findings for the outcome of knowledge and understanding, the balance of evidence relating to behavioural change is mixed rather than substantial. Additionally, we have more evidence of an impact on the frequency and quantity of drinking than we do on episodes of drunkenness. Evidence related to episodes of drunkenness is sparse and mixed (see Section 2.3.3).

There are examples of programmes that have had particular success in reducing the frequency and quantity of young people's drinking. These include *IPST* (Germany) and *TCYL* (USA), *SHAHRP* and *Preventure* (UK) and *DEVS* and *DAPPY:8* (Australia) (see



Section 2.2.3 for more details). Although many of these programmes had positive impacts on pupils' propensity to drink and the quantity of their drinking, results were sometimes differential, with better effects among those with non-problematic alcohol consumption than those with existing alcohol use. The extent to which outcomes were sustained was also mixed. Adding to the complexity of the picture, other programmes had mixed (*All Stars*), non-significant (*Talk About Alcohol* resources⁷), or negative outcomes (*KiR* and *Project ALERT*) in relation to behavioural change. Unfortunately, contextual information relating to these projects and the ways in which they were implemented is too sparse to enable any firm conclusions about the reasons for their lack of success to be drawn. Some suggestions for the low levels of success of some of the programmes in bringing about behavioural change include:

- **Age-inappropriate pedagogy** – Grade 5 students receiving *KiR* in the USA reported increased substance use compared to control students. The authors suggest that this negative outcome may have resulted from a use of cognitive techniques that was too sophisticated for young children. In effect, it introduced them to the idea of taking substances, rather than effectively challenging their use. A similar point is made in relation to pupils in schools that were not making adequate yearly progress involved in *Project ALERT* (see Sections 2.2.3 and 4.4).
- **Teacher stress and lack of time** – this issue may be particularly prevalent in schools in challenging circumstances (for example, those not making adequate yearly progress). The need for nurture as a protective factor is critically important in such schools but, ironically, staff working in such environments are sometimes least well placed to develop nurturing relationships with their pupils.

5.3 Little or inconclusive evidence of improved attitudes, decision-making abilities, confidence and assertiveness

Finally, the review identifies a small number of alcohol and life-skills programmes that have had a positive impact on school-aged children's attitudes towards alcohol (including beliefs of the consequences of alcohol use and normative beliefs), and on their decision-making abilities, confidence and assertiveness. However, on balance, the evidence relating to these outcomes is sparse and is often mixed in its message. Therefore, we can conclude only that alcohol education and life-skills programmes can sometimes have beneficial effects on children and young people. More research is needed to build up a strong and conclusive evidence base in relation to these outcomes.

- **Pupil attitudes** - encouragingly, the best evidence of programmes having an impact on pupil attitudes derives from the UK. Both *SHAHRP* (Northern Ireland) and *MEDALC* (Wales) reported positive attitudinal change among pupils. Pupils involved in *SHAHRP*, for example, were more likely to have 'safe' attitudes towards alcohol than control students. The reasons for this success are unclear, however.
- **Decision-making abilities** – only a small number of studies focused on decision-making as an outcome, and of these, just two reported positive results for intervention pupils (*JASAP* and *TCYL* – both in the USA). In the case of *JASAP*, intervention pupils were

⁷ Although the findings reported here are interim only (4-6 months after intervention).



found to be making more healthy decisions and in the case of *TCYL*, were found to have increased their alcohol refusal and decision-making skills.

- **Confidence and assertiveness/resistance skills** – again, only a small number of studies focused on confidence and assertiveness as an outcome, and of these, just two reported positive results (*IPST* in Germany – although only for pupils with ‘normative’ alcohol use trajectories and *Preventure* in the UK). In the latter case, it is of note that the intervention was delivered by a qualified therapist. This chimes with evidence cited in Section 5.1 above that better outcomes are often found when external professionals are involved in delivery.

5.4 Summing up

In conclusion, similar to previous literature review findings (for example, Foxcroft and Tsertsvadze, 2011a; 2011b; Cairns *et al.*, 2011; Vellerman, 2009; Karki *et al.*, 2012) this study has found mixed evidence of the effectiveness of alcohol education and life-skills programmes, with the greatest benefits being evidenced in relation to pupils’ enhanced knowledge and understanding of alcohol-related issues. Additionally, very few studies have investigated the cost benefits of universal school-based alcohol education programmes. Although some authors hypothesise that with just a very small effect size in reduced alcohol consumption rates among young people as a result of alcohol education programmes, the cost benefits to society could be substantial, there is no concrete evidence of such cost benefits at present and therefore there is more research to be done.

In spite of the fact that we cannot always identify conclusive evidence of programme impact, there are a number of messages that can be taken from this review about factors that help to facilitate success. These include: ensuring an appropriate balance between knowledge and skills elements within curricula; giving careful consideration to pedagogy, so that it is age appropriate, delivered by the right people with the right skills and, where possible, is interactive and open; and finally, utilising and drawing on the support of parents and carers wherever possible. Central to this it is important to ensure that programme goals are clear and accessible to both pupils and their families.



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Appendix A: Search strategy

This appendix contains details of the search strategy adopted for the review and of the search results. The search was informed by the following review parameters, which were agreed with Alcohol Research UK at the outset of the study:

Publication date:	Work published from the year 2008
Geographical scope:	United Kingdom and key international literature
Language:	Published in English
Study type:	Empirical research and/or evaluation; published literature (peer and non-peer reviewed)
Age range	School aged children (aged five to 18)

The search used three types of source to ensure thorough coverage of the evidence base:

- A range of general bibliographic databases.
- Websites of key organisations.
- Reference lists of previous reviews.

The first stage in the process was for the NFER's information specialists to match database keywords to the review's objectives and agree the search strategy with Alcohol Research UK. The keywords are itemised in the detailed search strategy that follows.

The next stage in the process was to carry out searching across various databases and web resources. These websites were searched on main keywords and/or the publications/research/policy sections of each website were browsed as appropriate. References were extensively harvested from previous reviews and subject experts.

Database searches

A brief description of each of the databases searched, together with the keywords used, is outlined below. The search strategy for each database reflects the differences in database structure and vocabulary. Smaller sets of keywords were used in the more specialist databases. Throughout, the abbreviation 'ft' denotes that a free-text search term was used, the symbols * and \$ denote truncation of terms.

A trial search was initially carried out on the British Education Index and subsequent database searches were modified accordingly.

The database searches were supplemented by scanning the reference lists of key documents, mostly literature reviews, thus identifying further studies.



Applied Social Sciences Index and Abstracts (ASSIA)

(searched via CSA 7/03/13)

ASSIA is an index of articles from over 500 international English language social science journals.

#1	Alcohol program* (ft)	#18	Personal social and health education (ft)
#2	Alcohol education	#19	Life-skills
#3	Alcoholic education materials (ft)	#20	#1 or #2 or...#19
#4	Alcohol abuse	#21	Young children
#5	Alcohol misuse (ft)	#22	Children
#6	Alcohol intoxication	#23	Nursery schools
#7	Substance abuse	#24	Infant schools
#8	Drinking	#25	Primary schools
#9	Alcoholic beverages	#26	Elementary schools
#10	Alcoholism	#27	Pupils
#11	Alcoholic consumption (ft)	#28	Students
#12	Alcohol education curriculum (ft)	#29	Secondary education
#13	Alcohol intervention (ft)	#30	Adolescents
#14	Drug education	#31	Teenagers (ft)
#15	Drug abuse	#32	#21 or #22 or...#31
#16	Personal and social education (ft)	#33	#20 and #32
#17	PSHE (ft)		

Australian Education Index (AEI)

(searched via Dialog Datastar 4/03/13)

AEI is Australia's largest source of education information covering reports, books, journal articles, online resources, conference papers and book chapters.

#1 Alcohol program* (ft)	#15 Alcohol intervention (ft)	#29 Primary schools
#2 Alcohol education	#16 Drug education	#30 Elementary schools (ft)
#3 Alcohol abuse	#17 Drug abuse	#31 Pupils (ft)
#4 Alcohol misuse (ft)	#18 Personal and social education (ft)	#32 Students
#5 Binge drinking (ft)	#19 PSHE (ft)	#33 Secondary schools
#6 Alcoholic intoxication (ft)	#20 Personal social and health education (ft)	#34 High schools
#7 Alcohol drinking (ft)	#21 Social Norms Analysis Project (SNAP) (ft)	#35 Primary schools
#8 Liquor (ft)	#22 School Health and Alcohol Harm Reduction Project (SHARP) (ft)	#36 Secondary education
#9 Substance abuse	#23 #1 or #2 or ...#22	#37 Middle schools
#10 Drinking	#24 Young children	#48 Teenagers (ft)
#11 Alcoholic beverages	#25 Children	#39 Adolescents
#12 Alcoholism	#26 Nursery schools	#40 #24 or #25 or...#39
#13 Alcohol education curriculum	#27 Kindergarten	#41 #23 and #40
#14 Alcohol education materials	#28 Infants	#42 Author search – McBride, N.

British Education Index (BEI)

(searched via Dialog Datastar 28/02/2013)

BEI provides information on research, policy and practice in education and training in the UK. Sources include over 300 journals, mostly published in the UK, plus other material including reports, series and conference papers.

#1 Alcohol programmes (ft)	#26 Alcohol (ft)	#51 Goal setting (ft)	#76 Middle schools
#2 Alcohol education	#27 Intoxication	#52 Social norms (ft)	#77 Secondary schools
#3 Alcohol education curriculum (ft)	#28 Alcoholic beverages	#53 Behaviour standards	#78 Sixth forms
#4 Alcohol education materials (ft)	#29 Liquor (ft)	#54 Self respect (ft)	#79 Adolescents
#5 Alcohol intervention (ft)	#30 Substance abuse	#55 Group identity (ft)	#80 Teenagers (ft)
#6 Drug education	#31 Decision-making skills	#56 Interpersonal relationship	#81 #67 or #68 or...#80
#7 Health education	#32 Interpersonal competence	#57 Peer influence	#82 (#21 or #66) and #81
#8 Health education curriculum	#33 Communication skills	#58 Pupil attitudes	#83 Programme implementation
#9 Health programmes	#34 Daily living skills (ft)	#59 Adolescent attitudes	#84 Programme improvement
#10 Health materials	#35 Social skills	#60 Student attitudes	#85 Programme administration
#11 Health promotion	#36 Coping	#61 Aspirations (ft)	#86 Programme development
#12 School health services	#37 Self empowerment	#62 Misconceptions	#87 Programme delivery (ft)
#13 Sex education	#38 Persistence	#63 Concept formation	#88 Process evaluation
#14 Sex and relationships education (ft)	#39 Knowledge (ft)	#64 Understanding (ft)	#90 Programme fidelity (ft)
#15 Personal and social education (ft)	#40 Awareness (ft)	#65 Values	#91 #83 or #84 or...#90
#16 PSHE (ft)	#41 Problem solving	#66 #22 or #23....or #65	#92 #21 and #81 and #91
#17 Personal social and health education (ft)	#42 Life-skills	#67 Young children	#93 #66 and #81 and #91
#18 Personal finance (ft)	#43 Well being	#68 Children	#94 Economy (ft)
#19 Citizenship education	#44 Self esteem	#69 Nursery school education	#95 Efficiency
#20 Civic responsibility (ft)	#45 Assertiveness	#70 Infant school education	#96 Cost effectiveness
#21 #1 or #2 or....#20	#46 Self motivation	#71 Primary education	#97 Cost benefit (ft)
#22 Alcohol abuse	#47 Self awareness (ft)	#72 Primary secondary education	#98 Cost benefit analysis (ft)
#23 Drinking (ft)	#48 Risk taking (ft)	#73 Pupils	#99 #94 or #95 or ...#98
#24 Binge drinking (ft)	#49 Self concept	#74 Students	#100 #21 and #81 and #99
#25 Alcoholism	#50 Self confidence (ft)	#75 Schools	#101 #66 and #81 and #99

Education Resources Information Center (ERIC)

(searched via Dialog Datastar 5/03/13)

ERIC is sponsored by the United States Department of Education and is the largest education database in the world. Coverage includes research documents, journal articles, technical reports, program descriptions and evaluations and curricula material.

#1 Alcohol (ft)	#16 Liquor (ft)	#31 Primary school
#2 Alcoholism	#17 Alcohol education curriculum (ft)	#32 Elementary school
#3 Drug Abuse	#18 Alcohol education materials (ft)	#33 Pupils
#4 Drinking	#19 Alcohol interven* (ft)	#34 Students
#5 Alcohol education	#20 Personal and social education (ft)	#35 Secondary school
#6 Drug education	#21 Personal social and health education (ft)	#36 High school
#7 Alcohol abuse	#22 PSHE (ft)	#37 Primary education
#8 Substance abuse	#23 Social norms analysis project (ft)	#38 Secondary education
#9 Alcohol program* (ft)	#24 School health and alcohol harm reduction project (ft)	#39 Middle school
#10 Alcohol misuse* (ft)	#25 #1 or #2 or ... #24	#40 Teenagers
#11 Binge drink* (ft)	#26 Young children	#41 Adolescents
#12 Alcoholic intoxication (ft)	#27 Children	#42 #26 or #27 or ...or #41
#13 Drunk* (ft)	#28 Nursery school	#43 #25 and #42
#14 Alcoholic beverages (ft)	#29 Kindergarten	
#15 Alcohol drink* (ft)	#30 Infant school	

Idox

(searched online 9/03/13)

The IDOX Information Service covers all aspects of local government. Key areas of focus include public sector management, economic development, planning, housing, social services, regeneration, education, and environmental services.

- | | |
|------------------------------------------|-------------------------|
| #1 Alcohol education | #14 Children |
| #2 Alcohol education programmes | #15 Nursery schools |
| #3 Alcohol education curriculum | #16 Infant schools |
| #4 Alcohol education materials | #17 Primary schools |
| #5 Alcohol intervention* | #18 Elementary schools |
| #6 Alcohol misuse | #19 Pupils |
| #7 Drug education | #20 Students |
| #8 Personal and social education | #21 Secondary education |
| #9 PSHE | #22 Adolescents |
| #10 Personal social and health education | #23 Teenagers |
| #11 Life-skills | #24 #13 or #14 or...#23 |
| #12 #1 or #2 or...#11 | #25 #12 and #24 |
| #13 Young children | |

Pubmed

(searched 8/03/13)

PubMed comprises more than 20 million citations for biomedical literature from MEDLINE, life science journals, and online books.

- | | |
|---------------------------------------|---------------------------------------|
| #1 Alcohol education programme* (ft) | #5 Alcohol intervention stud* |
| #2 Alcohol intervention (ft) | #6 Alcohol intervention trial* |
| #3 Alcohol intervention program* (ft) | #7 Alcohol intervention intervention* |
| #4 Alcohol intervention research | |

Social Policy & Practice

(searched via Ovid SP 8/03/13)

Social Policy and Practice is a bibliographic database with abstracts covering evidence-based social policy, public health, social services, and mental and community health. Content is from the UK with some material from the USA and Europe.

- | | |
|------------------------------------------|--------------------------|
| #1 Alcohol education | #14 Children |
| #2 Alcohol education programme\$ | #15 Nursery school\$ |
| #3 Alcohol education curriculum | #16 Infant school\$ |
| #4 Alcohol education materials | #17 Primary school\$ |
| #5 Alcohol intervention\$ | #18 Elementary school\$ |
| #6 Alcohol misuse | #19 Pupil\$ |
| #7 Drug education | #20 Student\$ |
| #8 Personal and social education | #21 Secondary education |
| #9 PSHE | #22 Adolescent\$ |
| #10 Personal social and health education | #23 Teenager\$ |
| #11 Life-skills | #24 #13 or #14 or ...#23 |
| #12 #1 or #2 or ...#11 | #25 #12 and #24 |
| #13 Young children | |

Website searches

Website	Number of results
Alcohol and Drug Findings	3
Alcohol Education Trust	0
Alcohol in Moderation	0
Alcohol Research UK	0
Botvin LifeSkills Training	0
Centre for Excellence and Outcomes in Children and Young People Services (C4EO)	4
Cochrane Collaboration	6
Department for Education	6
Department for Education and Child Development (Australia)	4
Department of Health	3
Drinkaware	0
Drug and Alcohol Education Services	0
Drugscope	0
EU-DAP	0
European Monitoring Centre for Drugs and Drug Addiction	3
Foundation for Alcohol Research and Education (FARE)	2
General Google searches	6
Institute of Alcohol Studies	0
Joseph Rowntree Foundation	6
Life Unplugged	0
Mentor UK	6
National Children's Bureau	0
National Drug Research Institute	0
National Institute for Clinical Excellence	0
National Institute for Health Research	2
National Institute of Drug Abuse (NIDA)	0
PSHE Association	0
RAND	2
SAMHSA's National Registry of Evidence-based Programs and Practices (NREPP)	0
School Health and Alcohol Harm Reduction Project (SHAHRP)	8
School of Health and Social Care Oxford Brookes University	0
Substance Abuse and Mental Health Services Administration (SAMHSA)	0
Talk about Alcohol (Alcohol Education Trust)	0
World Health Organisation	3



Appendix B: Coding strategy

On completion of literature searching (See Appendix A for search strategy and results), all the identified items (149) were entered into an excel spreadsheet. In agreement with Alcohol Research UK, the review team developed coding criteria to help make an initial assessment of the relevance of each item, based on its abstract (or where unavailable, on the basis of the full item). The **coding criteria** applied were:

B1. Impact studies

a) Methodological robustness:

Order of priority:

- Well-conducted Randomised Controlled Trials (RCTs)
- Well-conducted Quasi-experimental Design studies (QEDs)
- Large-scale quantitative or qualitative studies that give good explanation of the results seen.

This ranking resulted in a majority of studies from the USA, although included any relevant UK studies that were robust (even if not RCTs). However, we did not include UK studies, purely because they emanate from the UK, if their design was weak.

b) Outcomes measures:

We aimed to ensure even coverage of the following outcomes (where possible):

- Knowledge and understanding of alcohol-related issues
- Confidence (for example, to manage peer pressure)
- Decision-making skills
- Resistance skills (for example, ability to say 'no')
- Changed behaviours (e.g. in relation to consumption; desirability of getting drunk etc.)
- Differential effects (for different groups)
- No effects/unintended effects

c) Age range:

We attempted to ensure even coverage of programmes designed for younger (age 5-10) and older (age 11-18) children and young people where possible.

d) Programme features:

We prioritised evaluations of universal, school-based, provision, rather than evaluations of community or family-based provision; or of provisions designed for and targeted at specific 'at risk' groups.



B2. Process studies

a) Methodological robustness:

The nature of the research (whether qualitative or quantitative, or a review) is less of a concern than for impact studies. However, we ensured that all included items were robust in design – having large enough sample sizes, or adequate triangulation of stakeholder views, to enable the results to be considered reliable and replicable.

b) Country focus:

We prioritised UK studies, unless they were especially weak in design, for the process element of the review, because the UK context is particularly important in terms of understanding the factors that facilitate or inhibit success.

c) Item focus:

Order of priority:

- Focuses on facilitating or inhibiting factors
- Focuses on a range of context-specific factors including:
 - Explanatory factors for observed/measured impacts
 - Degree of reported local course fidelity/adaptation
 - Context of operation (including country/state/region; programme setting; whether the provision is stand alone or integrated with other learning)
 - Mode of delivery/types of activity
 - Type/skills of deliverer (e.g. school staff; external expert; combination)
 - Age range covered by the programme.

B3. Value for money studies

Only a small number of relevant studies were identified through our initial screening of search results and some of these are a little tangential to the key focus on alcohol education/life-skills programmes in schools. However, they are all related in some way and hence we reviewed them, because they provided cost effectiveness or cost benefit analyses – the results of which may be transferrable.

B4. Item selection

The review team coded each of the 149 items, using the coding criteria outlined above and on the basis of abstracts (or full text for items where no abstract was available). We extracted data on the relevancy of the studies to the review topic, the research methods used, the sample size (where relevant) and the locality of origin. As a result of the coding, a list of 40 'priority items' was developed for review.



Appendix C: Appraisal and synthesis strategy

Once our 40 priority items for review had been selected and ordered, the review team began the process of appraising and synthesising the literature in preparation for reporting.

Appraising the literature

The review team used the following template to assist the process of appraising (summarising) each item of literature. This ensured that each item was appraised in a systematic fashion.

Figure C1: Literature appraisal template

*All direct quotes from the literature should be in italics and include page numbers.

Full reference

Research summary/overview

Research aims

Key findings

About the source

Focus of the literature

(e.g. impact study; process study; VfM study; cross-cutting)

Type of literature

(e.g. research report; evaluation report; journal article; literature review; meta analysis; opinion piece; statistical analysis; review of local needs)

Country/area involved

(e.g. England, Scotland, Wales, Northern Ireland, Europe, USA, Canada, Australia, New Zealand, Other. If regional or local level – state name of area)

Study population

(only applies to research/evaluation projects - e.g. number, age and key characteristics of study population.)

Research method

(e.g. quantitative; qualitative; mixed; lit review, etc. State if not research.)

Research design

(e.g. RCT; QED; face-to-face interviews; telephone interviews; case studies; electronic/virtual methods; lit review etc.)

Information from source relevant for background/context

Findings relating to the IMPACT of alcohol/life-skills education programmes

Evidence of effect of programme(s) on:

- knowledge and awareness of alcohol issues
 - confidence and assertiveness
 - decision-making skills
 - behaviours (including alcohol consumption, ability to stay safe and healthy)
-

Evidence of differential effects for different 'types' of young people (e.g. disadvantaged groups; boys/girls; different cultural groups)

Evidence of adverse or unintended effects (+ please note any evidence of no significant effects; or of negative effects)

Findings relating to the PROCESS of delivering alcohol/life-skills education programmes

Evidence of factors that facilitate or inhibit the implementation, sustainability and impact of alcohol/life-skills programmes – i.e. why they do or don't have impact; e.g:

- course fidelity/buy-in from staff/degree of adaptation
- programme setting
- mode of delivery/activities involved
- programme deliverer
- target age group
- programme delivered in isolation or as part of a broader unit of study

Facilitating factors:

Inhibiting factors:

Findings relating to the VALUE FOR MONEY of alcohol/life-skills education programmes

How cost effective is the education/life-skills programme?

Economy

OR which education/life-skills programmes are most cost effective?

Efficiency

In terms of:

- Economy – how are programmes delivered at minimum cost?
- Efficiency – how do programmes maximise their reach with the available resources?
- Effectiveness – overall impact per unit cost

Effectiveness

General summary (if not possible to break down by headings above)

Review of evidence

Overall item relevance rating:

- - **highly relevant** = relates to impact; process; VfM or a combination. Is about universal alcohol education programmes in mainstream schools
- - **mostly relevant** = relates to impact; process; VfM or a combination. Is about drug or substance abuse programmes, or about targeted alcohol education programmes in schools or in non-mainstream provision; or is about alcohol education programmes in different settings – e.g. community based.
- - **of some relevance** = (follow criteria for ‘mostly relevant’ above), but only parts of the item have this level of relevance.
- - **limited relevance** = Not sufficiently related to any of the above criteria.

Highly relevant

Mostly relevant

Of some relevance

Limited relevance

Strength of the evidence base for this item:

Tick as appropriate

Strong (e.g. large scale quantitative study with adequate sample sizes to allow scope for statistical analysis – ideally an RCT or a QED such as baseline/follow-up; or a comparison group design. OR in-depth case studies that cover a range of institutions and a wide range of stakeholders, where views are triangulated.

Modest (quantitative or qualitative studies with smaller sample sizes, or covering only a small number of institutions. Qualitative studies that do not cover a full range of stakeholders; or local-level reports that are based on specific sectors or skills types only)

Impressionistic (based on observation or opinion, or on one case-study, or the views of one person, for example)

References cited in the text (please add details)

Reviewed by:

When appraising the quality of each literature item, members of the review team were mindful of:

- distinctions between different kinds of evidence, such as: quantitative evidence qualitative evidence; well-established trends; and emerging findings.
- the validity or trustworthiness of individual studies' findings according to a range of criteria, including the research design, sample size, methods of data collection and data analysis, theoretical approach, and relationship between claims made and evidence presented. The appraisal was sensitive to different genres of research, such as quantitative and qualitative work.

Synthesising the literature

Once all key items of literature had been appraised, the research team began the process of analysing the reviewed data in order to draw out emerging themes, patterns, and key messages. The synthesis was guided by the research questions outlined in the introduction to this report.

We adopted a best available evidence approach to determining the weight given to each piece of literature within the review (the most weight given to the best evidence). The primary focus of this review is to report the findings on the subject topic: the impact of alcohol education and life-skills programmes on school-aged children's outcomes. However, we also describe and comment on the nature of the evidence base. This will help the reader to understand where the evidence base is strongest and weakest, and will assist future commissioning of primary research into the review topic.



Appendix D: Assessing the strength of the evidence base

This review appraised evidence sources on the basis of the following criteria. Only sources deemed to be based upon strong or moderate evidence were included in the review.

D.1 Strong evidence

Studies that are sufficiently large in scale (for example adopting adequate sample sizes to enable robust statistical analysis), or are based on sufficiently in-depth case studies to allow a full explanation of findings. Typically, 'strong' evidence includes:

- **Quantitative research** - complex statistical analyses of secondary datasets, or surveys of various stakeholder groups that have good sampling designs and large-enough samples to enable effective statistical analysis to be undertaken. RCTs and well conducted QEDs are prioritised for Section 2, which focuses on impact.
- **Qualitative research** - The most reliable studies are those that have conducted a number of in-depth case studies, across a number of locations, drawing on the views of a wide range of stakeholders, and 'triangulating' those views in order to assess the degree of agreement, or dissent, among different individuals in varying locations.

As well as an item being 'strong' in its own right, the 'weight of evidence' is strong where there are a number of robust studies that concur in their findings.

D.2 Moderate evidence

The same types of evidence as those cited above are included in this category. The distinction between a theme being described as having a 'strong' or a 'moderate' evidence base is related to the following points:

- **The weight of evidence** – themes with 'moderate' evidence are likely to have only a small number of (typically two to three) studies that concur in their findings. There may also be some studies that present a contradictory view.
- **The quality of evidence** – themes with 'moderate' evidence may include studies with rather small sample sizes (for example, a survey conducted with a small number, or subset of, school pupils), or qualitative studies that have drawn on the views of certain, but not a full range of, stakeholders.

D.3 Weak/inconclusive evidence

This category includes evidence that is based on the observation or opinion of those with an interest in the topic, or upon a case-study in one organisation only, for example. Very often, we find weak/inconclusive – or impressionistic - evidence of one particular benefit within a study that was established to evaluate an entirely different benefit. Such findings cannot be dismissed entirely, but they tend to be anecdotal, subjective or descriptive in nature.



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