Investing in the future: can education help fix underage drinking in Europe?

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Edited by Professor Betsy Thom

This paper is an adaptation of '**Intoxicated Youth: Can Education Fix Britain's Youth Drinking Problem**'.
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Executive Summary

Underage drinking poses a great problem to improving public health and enhancing children's life opportunities. There are strong correlations between underage drinking and poorer life outcomes for young people, including adverse mental and physical health outcomes. Tackling underage drinking offers a valuable opportunity to address many of these areas and deliver population-wide benefits through effective interventions.

The problem of underage drinking varies across the continent; alcohol consumption and drinking patterns are determined by the social norms, individual legislative arrangements and diverse cultural contexts specific to each country. No one intervention will be suitable for all of Europe, and instead a tailored approach that accounts for an individual region or nation's demographics and drinking patterns is required.

What is common to all European nations is the importance of school and family environments in influencing the behaviour and values of children and young people. Schools and those who educate children and young people are well placed to facilitate informative yet sensitive alcohol education sessions that can be tailored to the needs of individual pupils and wider communities.

Families are uniquely placed to shape the health beliefs and behaviour of children and young people. This paper also examines examples of family based structured interventions that have been evaluated and goes on to explore what applications this might have for a future youth drinking strategy. Family interventions can be classified as "near" or "far" interventions and there are successful elements of both that demonstrate the value of pursuing further research in this area. This research needs to concentrate on robust methods and move towards more standardized models of classifying such programmes.

In this paper, school-based alcohol interventions are defined by whether they are specific to alcohol or are more general programmes that tackle risk-taking in a broader sense. There are a variety of successful programmes that showcase the considerable impact school based education can have on reducing underage drinking. More work

needs to be done to ensure schools have the resources to implement these interventions, share best practice, and access information relevant to the needs of their pupils. These programmes also show promise in younger children, and the lack of guidance for primary school teachers is an area that, if addressed, could offer significant impact in curbing drinking in children and young people.

But not all interventions have a positive outcome. Programmes that are too didactic, that are punitive and not educational, or that centre around scare tactics as opposed to fostering realistic norms all can result in no net benefit to young people. There is, therefore, a clear imperative to ensure that we deliver interventions that are evidence-based and suitable for the children participating and the specific issues that will be explored.

Programmes that educate participants about realistic social norms, that focus on life skills rather than purely alcohol knowledge, and that take into account the views of teachers and local educators when implementing lessons are more likely to succeed and should be encouraged.

A successful EU-wide strategy must incorporate all these considerations and allow for sufficient flexibility for appropriate implementation in each individual nation and region. This paper explores the key areas of successful programmes before making a number of policy recommendations on how Europe can be better placed to offer such interventions to as many children as possible.

Key elements required considered essential for a successful alcohol education programme:

- Strong social norms component.
- Skills-based approach that incorporates personal, social and critical thinking skills.
- Delivery that places more emphasis on interactive teaching rather than instructive and passive approaches.
- Age-appropriate goals, with programmes targeting older children more focussed towards a harm-minimisation approach as opposed to a purely abstinence approach.
- Heavy involvement of educational experts and local teaching professionals in programme design.

- Particular consideration of the demographics, social norms, and educational structures of the region and country in question.
- Sufficiently adaptable to allow teachers to adopt them for the individual classroom setting they are delivering the session in.
- Dedicated independent evaluation by a standardised set of criteria.
- Adequate teacher training to ensure that facilitators are able to discuss issues openly and without judgement.

Key Issues remaining for alcohol education in schools:

1. Alcohol education provision is uncoordinated and a wide range of different strategies are used, many of which are unproven or unevaluated.
2. Lack of curriculum time devoted to alcohol education
3. Lack of funding needed to secure resources for the purpose of alcohol education
4. Lack of authoritative, up-to-date resources
5. Success is strongly teacher-dependent, with programmes typically delivered by under-supported generalists. It remains unclear who, from peers to external speakers, is best-placed to deliver programmes
6. School alcohol and drugs policies remain focussed on handling incidents rather than guiding education
7. Primary school teachers in particular, are uncertain about their role and appropriate approaches

Recommendations

Alcohol Education in schools:

1. Consider making health and social education a compulsory part of national curricula and highlight the importance of alcohol education.
2. Explore ring-fencing for health and social education funding to support schools in accessing evidence-based cost-effective resources
3. Implement and endorse a single authoritative online platform in each country to provide free and easily accessible information on alcohol harms, successful education programmes, and family based interventions to teachers, parents and pupils. This platform should provide resources to help schools, policy makers and health educators pick methods that are suitable for their local population.

4. Adopt evidence-based techniques: skills-focused, harm reduction teaching with a social norms component
5. Emphasise the role of adequate teacher training and commitment of all school-based educators for the effective delivery of interventions.
6. Schools must shift the focus of their alcohol and drugs policies from punitive to preventative measures, emphasising the role of alcohol education
7. Provide specific guidance for primary school teachers highlighting general interventions, when to teach children about alcohol specifically, and the importance of non-didactic skills-based approaches.
8. Explore novel interventions and methods including the use of online and social media platforms to deliver standardised and interactive programmes.

Broader Goals:

1. Establish a nationwide campaign across schools to emphasise the importance of research in education (including alcohol education), and highlighting the benefits to pupils, teachers and schools. The Mentor Adepis framework, funded by the UK Department for Education, has potential to be implemented in other European nations.
2. Work with schools, academics and educators to create a systematic in-house approach to educational research and networks for the dissemination of research and best practice between these groups.
3. Introduce research skills into teacher training programmes and explore the possibility of creating salaried “teacher-researcher” roles to foster the growth of the educational research community.
4. Centrally co-ordinate further research to encourage robust methods across large cohorts, including randomised control trials (with new interventions trialled against existing best practice) and longitudinal studies.
5. Improve reporting of programme characteristics by providing a standardised model for classifying programme components and provide specific training in evaluating education programmes to educational researchers.
6. Ensure future research considers a cost-benefit analysis.

2 Introduction

Underage drinking across Europe and its associated harms is an area of concern for EU member states and at Commission level. Drinking from an early age has a strong association with a number of risky behaviours and poor outcomes such as drug use, accidents and injury, and mental health problems (including depression and suicide). Tackling this problem effectively has the potential to bring great benefit to the health and social wellbeing of young people across the continent. Public health interventions have a role to play, but the benefit of good quality education programmes cannot be understated.

This paper surveys the evidence for the impact of education programmes in reducing alcohol consumption and alcohol-related harm in young people and makes the case for a European strategy that takes the best available evidence and applies it to the needs, drinking norms and culture of individual European nations.

The paper begins by outlining the scale of underage drinking across European nations, and the public health impact this has. It then goes on to explore two main types of education programme: school-based and family-based. In each section the paper initially explores why schools and families are effective influences on young people's behaviour, identifies programmes that work effectively and where possible, critically assesses the strength of the available evidence. The paper synthesises the common themes in the successful programmes by suggesting a tailored approach, and making key recommendations to help achieve this.

2.1 What are the consequences of underage drinking?

Youth drinking is not a new problem, and whilst there have been a multitude of attempts to reduce its levels and complications, it remains an issue today. Underage drinking has consequences ranging from the individual to the wider community. Unsurprisingly, those who are exposed to alcohol at a young age, drink frequently or excessively are at a greater risk of health problems, road traffic accidents, risky sexual practices and suicide to name a few[1]. Furthermore, excessive drinking (defined as 5 or

more drinks per drinking session by the European School Survey Project on Alcohol and Drugs - ESPAD), is very much associated with frequency of cigarette smoking, use of cannabis, and involvement in delinquent behaviors. Perhaps not surprisingly, there is also evidence suggesting that the earlier the onset of alcohol consumption the higher the probability of lifetime drug addiction and alcoholism[2, 3].Unfortunately however, the consequences of youth drinking do not end here. Misbehaviour as a consequence of drinking can have a detrimental effect on the individual's educational attainment, future academic abilities and life chances, underlying the strain it can have on social welfare.

This poses a great problem to any society seeking to improve public health, maintain social order and provide children with life opportunities. The costs of youth drinking to the individual and to the community are not only financial, but take a toll on its health, and overall wellbeing, emphasising the responsibility of society to tackle and prevent this enormous problem.

2.2 What is the extent of the problem of underage drinking?

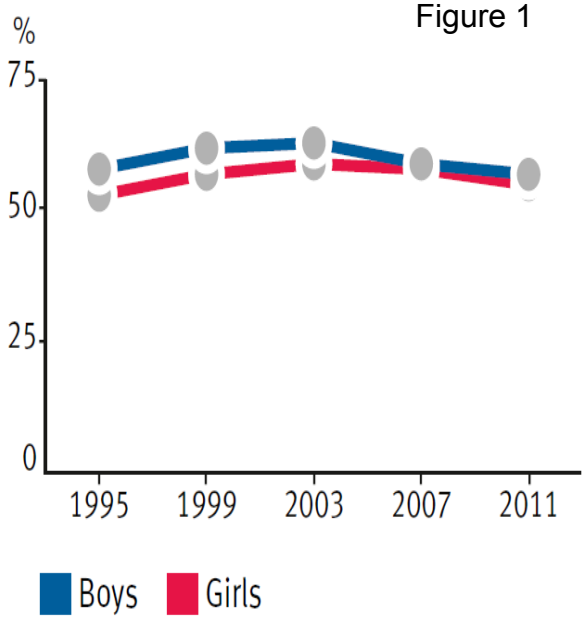
The age of onset of youth drinking, frequency of drinking and drinking to drunkenness varies in its trends and level in each member state, as demonstrated in various studies including the ESPAD and Health Behaviour in School Aged Children (HBSC).

ESPAD has monitored the drinking habits of 15 to 16 year old teenagers since 1995. It originally covered 26 European nations and now monitors data from 39 countries. Surveys are taken every 4 years, with the latest data from 2011 and the next survey due to be released in 2016. ESPAD has identified key variations in alcohol drinking habits, highlighting some of the difficulties of applying a single pan-continental strategy. It should be noted at this stage however, that the validity of the ESPAD data is limited in some cases, notably Germany and Belgium due to coverage being restricted to particular regions, the UK due to low participation rates and Spain because it is not an ESPAD country and relies on a separate methodology. Nonetheless, much of the ESPAD data is reflected by research conducted by HBSC, a World Health Organization (WHO) collaborative cross-national study involving 43

participating countries and regions from Europe to North America. HBSC examined 3 variables with regard to alcohol consumption: frequency of drinking, age of onset and prevalence of binge drinking. Each variable was assessed in 3 separate age groups: 11, 13, and 15 year olds. Amongst other findings, these studies noted:

- In all ESPAD countries, except Iceland, at least 70% of the students have drunk alcohol at least once in their lifetime. Overall 57% of all students had consumed alcohol in the past 30 days and, as can be seen in Figure 1, is a rate that has been decreasing since 2007. Whilst this is encouraging, the broad statistic does not reflect extremely complex and divergent national figures. In France, for example, 67% of students consumed alcohol in the past 30 days, which whilst above the ESPAD average, is still below Denmark at 76% and Germany (albeit the 5 *Bundesländer that participated) at 73%.*

Figure 1



Use of any alcoholic beverage during the past 30 days. Averages for 18 countries.

- The percentage of students having consumed alcohol within last 30 days can be used as a metric for the frequency of alcohol use. The highest frequency of use was found in Czech Republic (75%) and the lowest in Iceland (17%). Most notably, Ireland has observed the sharpest decline in frequency of use, down 32% since 2007 in relative terms and although the UK remains above EU average for frequency of use, its rates are falling almost as fast.

- Binge drinking rates (defined as 5 or more drinks in one drinking occasion by ESPAD 2011) varied dramatically across the continent, from 59% of students in Malta and 60% in Denmark reporting a “binge” once in the past 30 days compared to 27% in Portugal or 13% in Iceland. The national breakdown of rates of binge drinking can be seen in Figure 2.

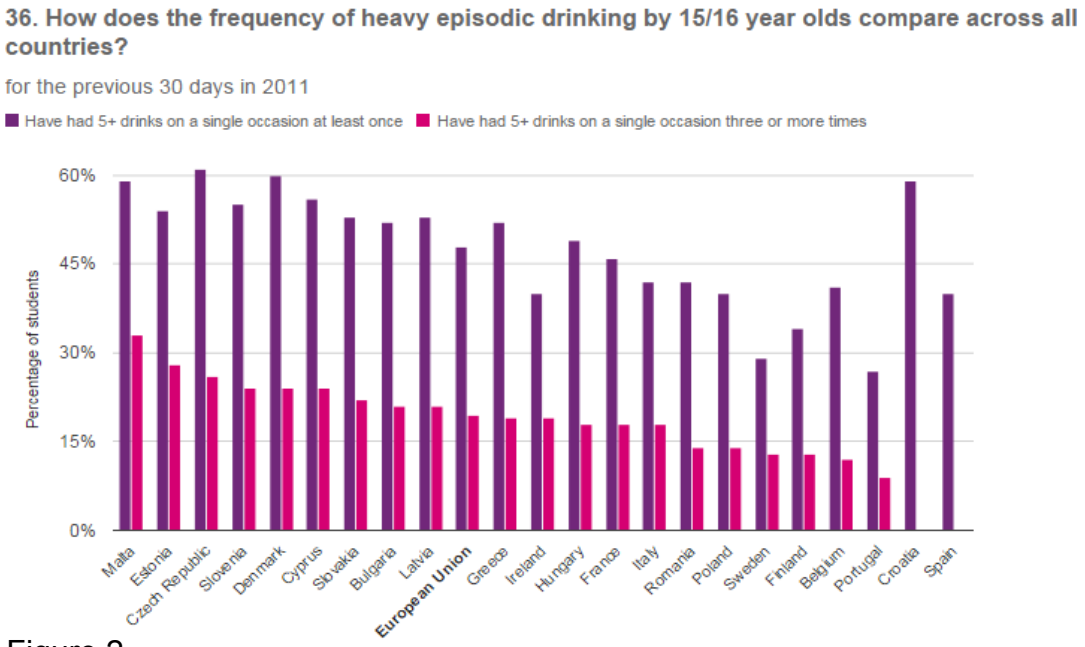
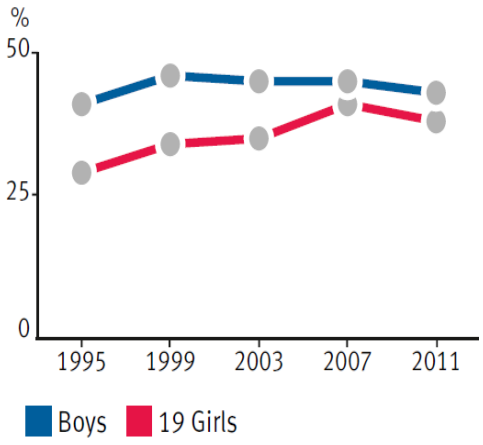


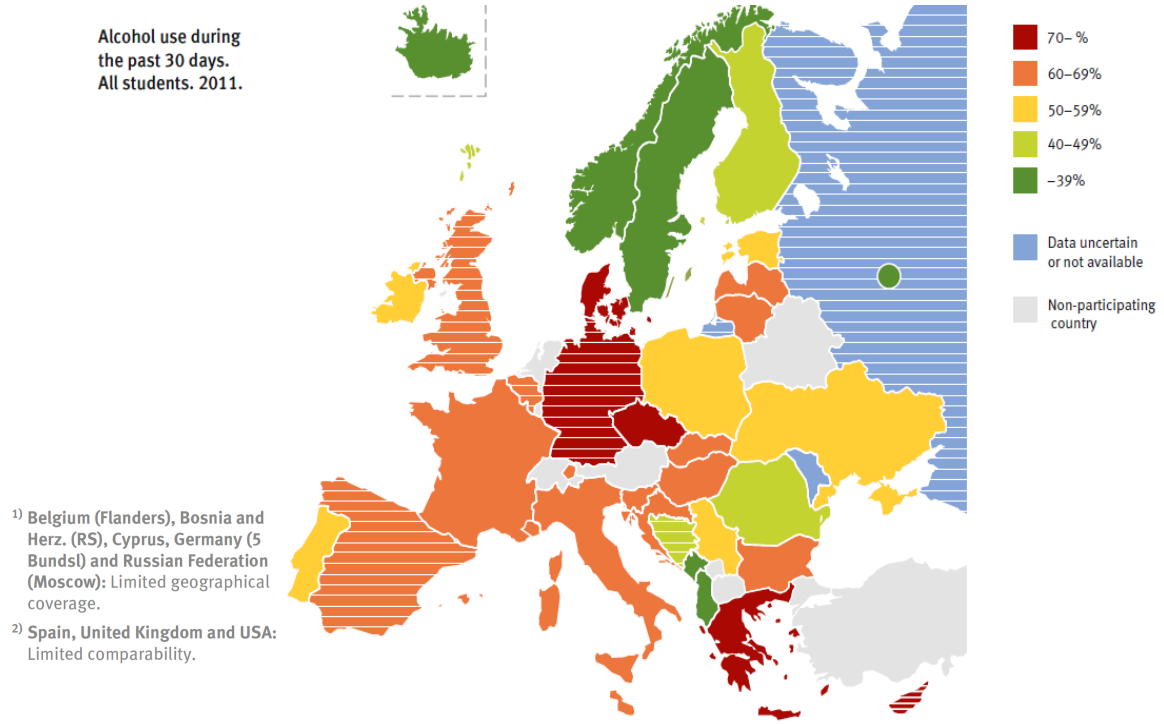
Figure 2

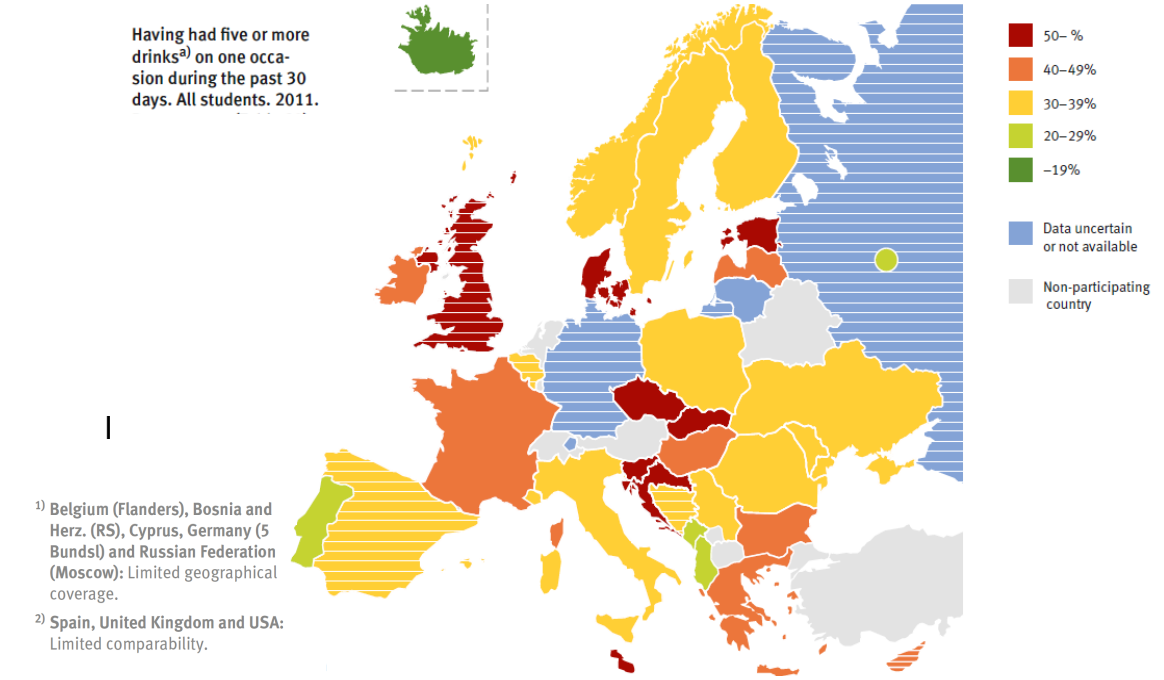
- The rates of episodic binge drinking have soared among girls from 29% in 1995 to 41% in 2007; this has since dropped to 38% in 2011. In contrast, rates of episodic binge drinking in boys have remained at around 43% since 1995. This can be seen in Figure 3. Since the 2007 survey, rates of episodic binge drinking have significantly increased in Greece, Cyprus and Hungary but have fallen in Iceland and Sweden. It is interesting to note that there is no correlation between frequency of consumption and rates of binge drinking as can be seen on the figures below.



Proportion reporting having had five or more drinks on one occasion during the past 30 days. Averages for 14 countries.

Figure 3





- In most of the countries involved with the 2011 ESPAD study, at least half of students reported that they had drunk at least 1 glass of an alcoholic beverage before the age of 13. Rates of drinking by age 13 are highest in Latvia (79%) and Bulgaria (73%). The lowest proportions were found in Iceland (20%) and Norway (29%). These rates may elucidate the cultural acceptability of youth drinking across the continent. The most common beverage was beer (with 44% reporting consumption before age of 13).

- 12 % of European students reported that they had been drunk by the age of 13 but this varies substantially across Europe. The highest proportion was found in Estonia (32%), followed by Latvia (25%). The lowest rates were ~5%, found in Greece, Italy, Iceland, and Norway. However, age of first intoxication does not necessarily reflect early consumption despite having one of the lowest levels of early age intoxication, Italy has one of the highest rates of regular drinking, with 17% of boys and 8% of girls aged 13 drinking at least once in the last week (according to HBSC 2009/10). This is in contrast to Latvia, with the second highest rate of early age intoxication, but with 12% of boys and 6% of girls aged 13 drinking at least once in the last week. This disparity is likely to be due to a multitude of competing factors, including cultural norms. For instance, supervised drinking is commonplace in Italy, which would invariably influence drinking behaviours of young people.

- Young people's expectations of alcohol also varied across Europe, with 74% of Danish students expecting positive consequences from alcohol consumption, contrasted with 42% of Italian students expecting negative consequences. This breadth in alcohol perception illustrates the diverse cultural attitudes that exist towards alcohol.

2.3 What causes this variation?

There is tremendous variation of drinking patterns across Europe, with differences noted between age groups and gender. In HBSC studies, very few countries perform equally poorly (or well) across variables or age groups, which presents an incredibly complex mixture of drinking patterns across demographics and nations. Ultimately, this is a reflection of the plethora of cultural perceptions and social norms that exist across Europe and whilst there are a multitude of explanations for this kaleidoscope of behaviours, this paper will focus on a couple.

Firstly, there are various legal frameworks across Europe concerning the acquisition of alcohol, all of which play a role both directly and indirectly on the accessibility of alcohol. The legal restrictions concerning alcohol purchase from an establishment usually involve age limits (ranging from 16 years old in Denmark to 20

years old in Iceland), which vary between beverages and between nations, but more importantly involve varying degrees of legal enforcement. It is important to note this is not synonymous with minimum drinking age, which in many countries, e.g. Denmark, is not legally enforced. These factors are likely to influence cultural acceptability of underage drinking and subsequently the types of drinking behaviours that are developed.

Another likely contributing factor is the context in which drinking is taking place. The purchase of alcohol can be categorised into “off-premise” purchase (e.g. from supermarkets or the local off licence) or “on-premise” purchase (e.g. in a restaurant or bar). ESPAD identified a huge variation in rates of “off-premise” purchasing across the continent: in Malta and Bulgaria 60% had purchased alcohol “off-premise” in the last 30 days, compared to 4% in Iceland. Similar variation was found for “on-premise” purchasing where the highest rates were reported in Greece (74%), Malta and Cyprus (68%) and the lowest rate reported in Iceland (7%). The diversity in the context and location of alcohol acquisition across Europe is likely to be influenced by the cultural perspective of alcohol use.

Unfortunately, both of the studies reporting these variations have several limitations on the accuracy of their data. These mainly originate as a result of study design, country or school participation rates and the challenge of standardizing questionnaires across multi-linguistic and culturally diverse countries. Nonetheless, until superior data collection is employed, the studies represent the best standard of evidence currently available. The variation of youth drinking patterns across Europe identifies the challenge in tackling the problem and lends favor to the argument that a tailored solution based on regional data is the more sensible approach.

The nature of youth drinking is such that it presents many opportunities for intervention to curb quantities and frequencies of alcohol consumption after certain drinking practices have developed. However, naturally the most effective means to solve the problem is a prevention strategy. Tackling youth drinking behaviours is not easy and requires approaches from many angles, however this paper will focus on how education programmes can impact the situation and prevent individuals in engaging in dangerous drinking practices.

3 School based education programmes

3.1 Why are schools important?

Schools provide a well-established setting for effective intervention in the psychosocial development of its population. Schools and teachers are well positioned to facilitate sensitive, tailored interventions suited to their pupils and communities. Importantly, schools represent both an education delivery modality and a social environment for behavioural modelling.

The period shortly before and during a child's initial exposure to alcohol represents an important window for intervention before the development of potential problematic drinking practices, after which effective intervention may become more difficult. Hence an early intervention approach is paramount. Given the ESPAD findings that in the three quarters of countries surveyed more than half of 13 year olds had drunk their first alcoholic drink, late primary and early secondary school years (age 11-1 3) must be placed at the heart of the timing of school based alcohol interventions. 5 The importance of schools as an environment where resilience, rehearsal strategies and life skills can be taught is underscored by evidence suggesting that early experimentation significantly increases long-term risks of more serious substance abuse and other risk taking.[4, 5, 6]

In addition, that schools are a crucial component in sculpting drinking practices among young people is reflected by a legal requirement to provide alcohol education in the National Curriculum in 66% of 32 EC nations included in the AMPHORA project[7]. Furthermore, 81% of these nations provide at least national guidelines to provide alcohol education in schools. In the UK, where alcohol education is delivered in the context of Personal Social Health and Economic (PSHE) and is not a legal requirement of the National Curriculum - being a 'should teach' rather than a 'must teach' subject - there is nonetheless a strong perception among stakeholders that schools are indeed important in shaping drinking behaviours. Ofsted, the independent school inspection organisation in the UK, found that 86% of 11-18 yr olds questioned

agreed that PSHE lessons taught in school should include issues such as alcohol education. Recent consultations have echoed this support, recommending that "there should be a national approach to alcohol education in schools".[8, 9]

Nevertheless, the value of school-based interventions is contested: in 2009, WHO argued that "school-based information and education programmes do not lead to sustained changes in behaviour".[10] Indeed, the evidence for interventions is still limited. Most notably a 2009 report by the UK's National Institute of Clinical Excellence (NICE) argued that even a "relatively modest 1.4% reduction in alcohol consumption within the target population of youths" as a result of school-based interventions would be a "very cost-effective use of public money".[11]

Recommendation:

- **Consider integrating health and social education as a compulsory component of national curricula and highlight the value of alcohol education.**

3.2 Education systems around Europe

Whilst age of onset of drinking behaviours makes school interventions an attractive proposition, it must be considered that significant differences exist between school systems across Europe. Given this variation, it is useful to use the International Standard Classification of Education (ISCED) to define the stages of primary and secondary education. On this scale it is ISCED level 2, covering the age bracket of 10-13, which emerges as the stage that precedes or coincides with the common age of first drink. As such, it is important to consider how educational systems vary around Europe at this life stage.

Educational systems around Europe fall into three broad groups according to ISCED 2. The most prevalent is the "Common Core Curriculum" which sees a transition from primary to lower secondary during ISCED 2. The next most common is the "Single Structure", widely employed in Nordic states with no transition between primary and secondary. The third model is that favoured in Germanic countries, the "Differentiated" model in which pupils are segregated into specific educational streams according to academic ability after primary education. These differences provide challenges in

continuity of implementing alcohol education between countries and, in the case of Differentiated may even affect implementation within countries.

As noted previously, the requirement for alcohol education varies dramatically between countries. Together the variation between educational systems and the different approaches to alcohol education around Europe set an important context for how alcohol education can be designed and delivered in schools. Any attempt to tailor interventions for European schools will have to take these significant differences into account. These differences add further obstacles to the prospect of a universal model suitable for application across the range of European contexts. Instead it is important to study the conditions, tools and messages that define successful programmes and use this knowledge to select appropriate interventions suitable for particular settings. This will require resources and funding to allow schools to access the best evidenced interventions and deliver alcohol education within the pressures of existing curricula.

Recommendation:

- **Explore ring-fencing funding for alcohol education and/or health and social education to support schools to access evidence-based cost-effective resources and to successfully deliver sufficient curriculum time for alcohol education.**

3.3 Programmes focussed on the reduction of general risk taking

Theoretically, educational interventions do not necessarily have to enhance the participants' alcohol knowledge to effectively tackle dangerous drinking behaviour, in fact there is evidence to show that knowledge alone does not lead to behaviour change[12, 13, 14]. Factors such as resilience training, perception of behavioural norms, and peer dynamics all play an important role in whether young people pursue harmful drinking habits. Educational programmes aimed at tackling misperceptions (known as social norms), or equipping young people with tools to shape their behaviour despite external influences have a role to play in any behaviour change educational measures.

Empirically, three general programmes are endorsed by successive reviews (summarised in Table 1, Appendix). All took a psychosocial approach towards behaviour modification in general, rather than focusing on alcohol specifically.

The 'life skills' approach, derived from the US Life Skills Training programme[15], focuses on developing resistance, assertiveness, effective communication, goal setting and critical thinking; amongst other skills. Several studies have repeatedly shown that this approach can have a significant impact in reducing consumption of alcohol (as well as tobacco and illicit substances) and is successful when taught by peers (although in general, peer to peer education does not have as successful evaluation base as other education formats), trained teachers or healthcare professionals.

The EUDAP 'Unplugged' programme[16] (involving 7,079 pupils across 170 schools in seven European countries in 2004-2005) took a similar approach, but also focused on correcting beliefs about what constituted 'normal' behaviour. The sessions cover alcohol, tobacco and drugs and are complimented with a student workbook. The EUDAP intervention trial tested the curriculum and found it to be effective – three months after the intervention had been undertaken the intervention group demonstrated a 31% reduction in frequent drunkenness (which increased to 38% after fifteen months) compared to the control group. The programme also showed similar results for reducing cannabis use, but did not seem to have any long-term impact on tobacco consumption. Although the data was not broken down by age or gender, the results demonstrated that groups who were already drinking sporadically or frequently experienced a more significant drinking behaviour change.

Since this work, a revised teacher's handbook has been made available as well as training sessions for teachers who wish to implement the programme in their own schools. The work was later expanded through a project with the IKEA Social Initiative to adapt the programmes to central and eastern European nations including Russia and Kyrgyzstan.

The Good Behaviour Game[17] took an even earlier intervention and general approach by rewarding pupils (age 7) for complying with classroom behaviour rules, and prescribed a way of teaching rather than any specific content related to substance use behaviours. An advantage of this approach was that it did not require any additional curriculum time. The Good Behaviour Game is being trialled in a UK context in partnership with Mentor Adepis[18] and The Education Endowment Foundation.

In their native contexts, each study produced statistically significant reductions particularly in the number of episodes of drunkenness. It is evident from some of these studies that primary education is a valuable opportunity to influence children's behaviours but that this often a neglected area[16, 17, 18, 19]. Further work can be done to ensure that educators and professional working with children at this age are able to provide appropriate alcohol and life skills training or are at least aware of the value of such interventions and the positive impact they can have in later life.

Recommendations:

- **Adopt evidence-based techniques: skills-focussed, harm reduction teaching with a social norms component.**
- **Provide specific guidance for primary school teachers on alcohol education and the value of non-didactic skills-based approaches.**

3.4 Alcohol specific programmes trialled and evaluated as successful

Several alcohol-specific interventions have been tested in the Europe nations (summarised in Table 2, Appendix). The School Health and Alcohol Harm Reduction Project (SHAHRP) created by The National Drug Research Institute, Curtin University, Western Australia, was delivered over two years to 14-16 year olds in Australia. The programme took a psychosocial, harm reduction approach, teaching skills through scenario-based discussions. SHAHRP emphasised the role of teacher training in programme delivery, and successfully increased students' alcohol-related knowledge as well as reducing consumption and harm (put in percentages and statistical significance and type of study) [20]. 'STAMPP' (Steps Towards Alcohol Misuse Prevention Program), the Scottish and Northern Ireland adaptation of SHAHRP (also taking a harm reduction approach), is currently being tested in a randomised controlled trial involving 105 schools in Scotland and Northern Ireland, for study completion in 2015 [21].

The Alcohol Education Trust Talk About Alcohol built upon the trial findings of the harm minimisation approaches of SHAHRP and Unplugged and life skills social norm approaches and developed, piloted and trialled a 100 page work book fully supported

on line with film clips and games. This allowed teachers to take a flexible 'adaptable' approach for pupils by topic according to the needs, ability and experience of each tutor group. An early intervention approach, 4 lessons were required to be taught in Year 8 (age 12-13) and two further lessons in Year 9 (age 13- 14) on top of time spent on an interactive pupil based website, The programme focuses on assessing pupils knowledge and experience and then building resilience, changing perceptions of social norms and using rehearsal strategies that equip pupils to prepare for various social situations involving alcohol. The programme opts to be bottom-up by avoiding pre-specified responses found in top-down approaches. The matched evaluation among 4000 pupils with 3 follow ups over 2 years by The National Foundation for Education Research showed a significant delay in the onset of drinking in the intervention schools, and improvement in knowledge [22]. As frequency of drinking and drunkenness were occurring at too low a level to be subject to statistical modelling, these are being evaluated in 2015 two years post the intervention. Early release figures show a continued and enhanced statistically significant increase in the delay in early of onset of drinking in the intervention cohort in 2015 [23].

3.5 New and upcoming programmes

Since the last published review [24], two interventions have been evaluated (summarised in Table 3, Appendix). These took place in Poland and Australia and adopted a psychosocial approach. In Poland, the effects of the programme were weak and researchers struggled with poor programme adherence making it difficult to interpret the results [25]. In Australia, a 10-lesson, harm-minimisation programme drawing together information-giving, skill teaching and norm correction, found positive effects on pupils' knowledge, and a decrease in the rate of increased alcohol consumption and the harms associated with drinking [26].

Recommendation:

- **Continue to monitor and explore new interventions and novel interventions, including the use of online and social media platforms.**

3.6 Which education interventions have been successful?

Several published reviews have systematically examined alcohol education interventions, in an attempt to identify successful programmes and the features, which determine success [24, 27, 28, 28, 29, 30, 31, 32]. Drawing on these reviews and more recent literature this paper will highlight some of the most successful and promising interventions. It is however vitally important to ensure that the evaluation of programmes and sharing of best practice is expanded to include a comprehensive dissemination of programme methodologies that are ineffective and represent poor value. It is our view that a lack of authoritative, up-to-date resources is contributing to an inability to share high quality evidence in this area.

Recommendation:

- **Implement and endorse a single authoritative online platform in each country (regulated by the relevant government ministry) to provide free and easily accessible information on alcohol harms, successful education and family based programmes.**

3.7 What educational approaches are known to be less effective or even detrimental?

Unfortunately much of the desired evidence base for educational interventions is currently lacking, and in some cases indicates that several approaches currently employed by schools are ineffective and potentially detrimental.

Time and other resource limitations within schools often render a theoretically successful programme as unenforceable and ineffective. Programmes that consist of too many sessions and that offer minimal flexibility of delivery will not be implemented by teachers and schools, or may fail to deliver the desired effect due to lack of fidelity. Online access may not always be possible within the school setting, and so a variety of media needs to be considered. One-off visits or individual peel-off days offer an opportunity to “tick off” alcohol education requirements with minimal disruption to wider curricula and so may be popular with educational administrators. However they do not demonstrate any positive effect on the onset of drinking or frequency of binge drinking when implemented as a standalone event.

Approaches built around scare tactics and engendering fear of harm and shock do not result in behaviour change, including if delivered by former addicts offering a “moral tale”. Instead pupils seemingly find this information easy to dismiss as irrelevant to them, in stark contrast to social norms education. This effect is also noted across education programmes in a variety of other topics including smoking and safe sex practices [33, 34]. More widely, passive information programmes that involve minimal pupil participation and engagement do not affect behaviour change. Successful programmes often involve active involvement as well as student input in their programme design and delivery [35, 36]. This is reflected in the guidance issued by Mentor Adepis - advocating interactive programmes over didactic teaching.

Peer to peer programmes (such as MEDALC) are very popular amongst participants but have little evidence for long-term changes in drinking behaviours [37]. Often these programmes receive limited or no funding dedicated for evaluation, and allocate all available resources to programme delivery. There may be a role for these programmes in specific at-risk groups, but there is yet to be any substantive evidence on their employment to the wider student population.

As highlighted later in this paper, programmes that are identified as effective often face implementation issues when applied to different contexts. Often these can be due to fidelity as well as deliverability obstacles. This raises the question of whether programmes determined to be ineffective have been trialled in optimum scenarios and with adequate resources.

To help mitigate this possibility, more scrutiny needs to be applied to programmes that fail to effectively evaluate their studies, and steps to improve the evaluation process should be taken. One such step would be to encourage programme administrators to ring-fence funds for the evaluation of their programmes, so that otherwise good programmes aren’t dismissed because of poor resource allocation. Another such step would be the creation of an effective forum with the purpose of sharing proposed programme designs in order to match them to suitable scenarios for evaluation. Nonetheless, a standardised model to classify programme components would also improve reporting of programme characteristics, as well as allow commissioners to select aspects of a programme best suited for their local population and available resources. We also recommend that further work concentrate on the impact of

programme fidelity and where possible implementing designs across multiple educational environments to try and minimise any bias in an individual setting.

Recommendations:

- **Work with schools, evaluators and academics to create a systematic in-house approach to educational research.**
- **Create incentives for researchers to evaluate intervention programmes, including dedicated central grants that researchers and promising programmes can apply for.**

4 Family based interventions

4.1 The role of a family-based approach

Health beliefs and behaviours surrounding alcohol consumption formed in childhood and adolescence can continue into adulthood. With this in mind parents & families are uniquely placed to influence the drinking behaviours of their children. As such a number of programmes have attempted to harness this by providing families with the tools to provide alcohol education in the home.

Data collected in England from 2012 suggest that approximately 32% of all pupils who had recently consumed alcohol had received it from a parent or family relative. This is in addition to 12% of pupils who acquired it from home and 4% obtaining it by stealing from home [38]. Furthermore, most pupils (82%) who had drunk alcohol in the past week said their parents did not mind them drinking as long as they didn't drink too much. In fact, pupils who had drunk in the past week were most likely to say that their parents let them drink as much as they liked [39].

In 2009, the Dutch government launched an initiative called "Not yet 16? Not a drop?" which promoted the idea that the then 16 years age restriction was not just a legal concept but also a social norm. It also aimed to support parents who already did not allow their children to drink before the age of 16. The initiative was the launch of a joint logo, which was mandatory in all advertising and other communication (print, television, cinema, websites etc.). The idea was that it connected all existing and new initiatives by both public and private partners on the subject of underage drinking. It was very effective with over half of the population and 75% of parents being familiar with the logo, empowering parents to feel supported in their choice to withhold alcohol from their children.

Nonetheless one also has to consider the role parents and the wider family have on setting the child's perceived social norms. As mentioned earlier, Italy has one of Europe's highest rates of underage drinking and yet one of its lowest rates of associated binge drinking. The reason for this is multifactorial, however it ultimately

comes down to the Italian drinking culture and the parents' involvement with setting these social norms. One example of this is supervised drinking, whereby the child's first and early involvement with alcohol will typically be with the parent, usually to accompany a meal. The amount a child drinks in a single session will be controlled by the parent, which is in contrast to many other European states where a child's first contact with alcohol will be with friends in an experimental context.

Parents are intimately involved with their children's decisions, and play an important role in setting boundaries, monitoring behavior, setting the social norm and limiting the access to alcohol. Both SHARHP and AET have parent arms to their interventions, and whilst it is difficult to identify what impact each individual arm has, both programmes have shown promising results. Using this unique relationship, family-based educational interventions could promise to provide a holistic approach to tackling underage drinking problems.

Recommendation:

- **To continue research on the effectiveness of family research programmes and for this research to focus on robust methods (e.g. RCTs) and creating a standardized model for classifying family programmes.**

4.2 Remote family intervention programmes

Remote family interventions (those that did not involve face-to-face meetings with a local educator) were investigated in two thirds of the studies reviewed. They involved: mailing booklets, leaflets and image based postcards to families; telephone discussions between health educators and family members; fictional audio CD stories for children; and computer programmes based on family interaction theory.

Of those studies identified in the Cochrane Review one randomized controlled trial conducted by Schinke et al, was notable for its successful use of computers to deliver a gender-specific intervention based on family interaction theory to 202 female adolescents and their mothers in New York, New Jersey and Connecticut [40]. Intervention-arm girls and their mothers interacted with a computer programme involving 9 sessions (45 min per week) aimed to enhance mother-daughter

relationships and to teach girls skills for managing conflict, resisting media influences, refusing alcohol and drugs, and correcting peer norms about underage drinking, smoking, and drug use. After intervention, all participants completed post-test and follow-up measures including; mother communication, parental rules, parental monitoring, conflict management, normative beliefs, self-efficacy, refusal skills, 30 day alcohol use, 7 day alcohol use, 1 year alcohol use and drinking intention.

Two months after programme completion all girls and mothers had improved their mother-daughter communication skills. Mothers improved their perceptions and applications of parental monitoring and rule-setting relative to their daughters' alcohol use. Intervention-arm girls also improved their conflict management and alcohol use-refusal skills; reported healthier normative beliefs about underage drinking; demonstrated greater self-efficacy about their ability to avoid underage drinking; reported less alcohol consumption over all periods covered; and expressed lower intentions to drink as adults. This study shows true potential for the use of remote family intervention programmes particularly due to its adoption of computer technologies to deliver material. The uptake of this programme has, however, been limited beyond the scope of the original research.

4.3 Near family intervention programmes

In contrast, 'Near' family interventions involved face-to-face meetings with a local educator and were investigated in six out of twelve studies reviewed. These interventions included: presentations delivered to families or parents; meetings held with parents or children; or meetings held in combination with parents and children. Three out of the six studies using a 'Near' component in their programme showed some evidence for their effectiveness.

One example of particular interest was a robust randomised control trial that followed progress over ten years and has subsequently been replicated widely and adapted to different cultural settings. This study compared two family intervention programmes: the Iowa Strengthening Families Program and Preparing for the Drug-Free Years Program to a control intervention of 4 mailed leaflets [41].

The Iowa Strengthening Families Programme consisted of seven weekly sessions (one hour each) for troubled families, including six separate but concurrent parent and child curricula, followed by six one-hour joint family sessions where parents and children practice the skills they have learnt; the seventh session includes only a one-hour family session. Parents are taught to clarify expectations, use appropriate disciplinary techniques, and communication with children and management of strong emotions of children; children are additionally given peer resistance and peer relationship training as well as access to video information.

Both family intervention programmes significantly improved alcohol consumption behaviours of youth in multiple outcome measures. However the Iowa Strengthening Families Program reduced more outcome measures including use, past year use, past month use & lifetime drunkenness. Subsequently, the author of the Cochrane review, David Foxcroft, has recognised the strength of this programme and adapted it for use in the UK. It has been piloted in Barnsley [42] and Cardiff [43], showing very promising results for its applicability to the UK population after contextualization. The programme has received UK Government funding to be rolled out nationally [44]. Foxcroft has also published a study protocol for the continued evaluation of this programme [45].

Since the Cochrane review, one key trial of a near family intervention programme has been published. The Resilient Families intervention, trialed in Melbourne, Australia, saw students from twelve out of the twenty-four schools participating receive a social relationship curriculum [46]. Parents received parent education handbooks and invitations to parent education events outlining strategies to encourage healthy adolescent development and reduce adolescent alcohol misuse. Over two years, students from the intervention arm showed significantly reduced levels of frequent alcohol use (37% compared to 44% in control) and reduced progression to heavy alcohol use (22%, compared to 25% in control).

4.4 Independent evaluation

A 2011 Cochrane review forms the most robust evaluation of existent Family Intervention Programmes [30]. Focusing on 'Universal family-based prevention programmes for alcohol misuse in young people' it set out to systematically review evidence among school-aged children up to 18 years of age. Twelve studies were identified - eleven conducted in the US and one in the Netherlands. Due to differences in study designs and quality, the authors were unable to quantify differences between interventions. Nevertheless, nine out of twelve family intervention programmes evaluated showed evidence of positive effects which persisted over the medium and longer-term, the maximum of which was ten years. Four of these effective interventions focused on young females. Among those not supporting family intervention programmes, one study showed positive effects that were not statistically significant, and two with larger sample sizes showed no evidence for reducing alcohol misuse. The authors noted that standard scientific reporting of content did not allow them to draw conclusions of the required ingredients for a successful family intervention. Nevertheless, as already discussed some studies that reported positive effects, and were notable either for their use of technology or subsequent validation.

4.5 What works?

Little attempt has been made within the literature to categorise interventions and to unpick which characteristics lead to a successful programme. Both types of family intervention have been shown to effect a number of positive changes in alcohol consumption behaviours among youths. However a lack of transparent or robust methods continues to impair valid assessment of family intervention programmes: studies often lack randomisation or clear data reporting; outcome measures are not standardised and open to manipulation; therefore quantitative comparisons between interventions cannot take place.

As we highlighted previously, research suggests that varying social culture and exposure to adult drinking behaviours in different geographical areas even within individual nations can influence the behaviours and prevalence of underage alcohol consumption.

Overall it is clear from the literature that academics and government commissioners need more cohesive strategies for the assessment and implementation of family intervention programmes, drawing together the range of available expertise and considering the population requirements. It is also evident that it is feasible to conduct randomized control trials in this area of work, and as the highest form of primary evidence, we recommend that future research concentrate on this method. Such studies are particularly expensive to organize, and so specific funding mechanisms may be necessary to fuel this research.

Recommendation:

- **Establish nationwide campaigns to emphasise the importance of research in education and highlighting the benefits to pupils, families and schools.**

5 What makes a good programme?

Evidently, a wide variety of programmes have been developed and studied, particularly in the US context. There is some encouraging evidence to suggest that certain programmes may be effective, however in general the evidence base is weak, and the applicability of these measures to differing EU contexts is largely untested. No single programme emerges as being successful in all measures in promoting safe drinking behaviours among young people.

Looking forward towards new solutions, we must identify which features of past programmes contributed to their success, and which didn't. However, even drawing together previous literature reviews and considering more recent evidence, there was a lack of robust evidence or methodologies making this task extremely difficult.

Common problems, included a lack of randomisation, a wide variety of outcome measures and a lack of independent evaluators, with many programmes having only been evaluated by those who also developed the programme. Despite this, some interventions appeared to demonstrate a positive impact on drinking behaviour and attempts should be made to elucidate the successful elements and explore these further. Others, which do not demonstrate any evidence of improving drinking behaviours, must be discouraged or more rigorously researched in order to identify the components responsible for poor outcomes.

Furthermore, when assessing programmes with the intention of implementing practical policies, it is important to consider the cost-effectiveness of the programmes. Naturally, it is very difficult to accurately assess the exact cost-effectiveness of programmes because of how broadly some savings can be, ranging from reducing burden of health problems to curbing associated crime, and we were unable to find any studies which considered the cost-effectiveness of implementing interventions. Given that cost-effectiveness analysis forms a crucial part of service commissioning, for both national health services and for insurance-based models this represents a severe deficit.

Trusted resources that showcase successful programmes, highlight interventions with no evidence of positive impact, and identify areas that warrant further research would go a long way to driving forward the quality of evidence employed in alcohol education programmes. Providing schools with the tools to help decide which programmes and which components of individual programmes would be effective for them, would go a long way to ensure children have access to high-quality evidence-based programmes tailored to their needs.

5.1 A 'harm-minimisation' rather than 'abstinence' approach

Abstinence is an attractive goal in alcohol primary prevention - if achieved, then all harms from alcohol are averted outright. In particular the Life Skills Training programme aims towards abstinence, whilst other interventions without this direct target are more found to be more effective amongst non-drinkers [47]. However, abstinence-based approaches may be unrealistic and overly paternalistic. These conclusions are particularly pertinent when considering nations with notably high levels of alcohol consumption, where alcohol is first consumed at a relatively young age, and where young people are able to access alcohol relatively easily.

Abstinence approaches are more likely to succeed when employed as an early intervention. The importance of early intervention has been known for over 25 years, both in terms of being effective on an individual basis, as well as being a cost-effective approach when applied to a wider population [48, 49]. The Early Intervention Foundation outlines that the core aim of this approach is "addressing the root causes of social disadvantage, ensuring everyone is able to realise their full potential". Early intervention programs can be employed in sequence, leading to what Mentor-ADEPIS describe as a "virtuous cycle" where children and young people are fully prepared for the challenges all stages in their lives.

In contrast the 'harm-minimisation' approach accepts as a reality that young people are likely to experiment with, and drink alcohol, but aims to curtail the adverse outcomes of drinking. In the UK in particular, where drinking alcohol remains normal

for much of the population, harm minimisation programmes reduce the discord between the message delivered to young people and the 'normal' practices they observe around them. In light of this, the 2007 NICE guidelines deemed abstinence-based methods to be have limited application outside of the USA, where drinking alcohol is illegal below the age of 21. [50]

Harm-minimisation has been adopted as the basis for numerous interventions, and the vast majority of those evaluated positively in recent reviews. Nevertheless, the evidence remains "tentative, but inconclusive" – no studies have directly compared outcomes with these approaches [8, 32].

As exposure to alcohol increases with age, abstinence programmes lose their efficacy, and, once a child begins drinking alcohol, abstinence-focused programmes fail to equip them with the tools needed to remain safe [51]. Harm reduction then offers a more effective and realistic alternative. Whilst the ideal time for intervention remains uncertain, there appears to be a window of opportunity between the ages of 12 and 14 where programmes are most likely to be effective. Earlier, and one programme reported "the undesirable effect of sowing seeds of understanding about substance use…rather than succeeding in actively encouraging resistance". Later, and drinking practices are already entrenched [32].

5.2 Skills, not just knowledge; interaction not just instruction

Educators have sometimes focused on the delivery of knowledge, based on the premise that armed with 'the facts' about alcohol (e.g. the risks to themselves, their families and communities), young people will make the 'right' decision and abstain by force of reason [52]. However while many programmes have been successful in increasing knowledge, much fewer have been successful in changing behaviours, reflecting the cognitive gap between knowing what's 'best' and doing what's 'best' [32]. Undoubtedly, knowledge is important and must inform a sensible approach to alcohol, but alone it is insufficient.

Developing skills may be more important: programmes focused on developing personal, social and critical thinking skills such as Life-Skills Training, SHAHRP and

The Alcohol Education Trust talk about alcohol programme were more successful in changing alcohol-related behaviours [32]. These could include discussions of how to identify and avoid 'high risk' situations; how to resist social pressures, including rehearsing responses; and critical analysis of media and advertising influences.

Alcohol intoxication can place young people in direct risk of harm and injury. Whilst reducing alcohol consumption is the central aim of many programmes, a holistic approach to reducing alcohol harms must include empowering young people to support those in need of immediate support whilst intoxicated. Work funded by the European Commission has already highlighted the value of first-aid programmes in improving road safety and its use in alcohol was highlighted in the 2009 advocacy report by the International Federation of Red Cross and Red Crescent Societies – "First aid for a safer future, Focus on Europe". They particularly highlighted a school-based programme administered by the Finnish Red Cross where groups of up to 30 students were taught how to administer basic first aid on a friend engaged in risky behaviour such as drugs and alcohol.

Skills-based approaches also necessarily lend themselves more naturally to the use of interactive teaching methods including group discussions and role-plays. An interactive teaching style has repeatedly been shown to be more effective at engaging students, changing their attitudes and improving recall compared to instructive or passive approaches [53, 54, 55].

5.3 Teacher training, flexible delivery and programme fidelity

The success of classroom-based programmes inevitably relies in part on the experience and skills of the teaching staff. Unsurprisingly, adequate teacher training has been repeatedly highlighted as a key programme component as pupils preferred teacher who "who could discuss issues openly and non-judgementally" [21, 27, 32, 56, 57].

One associated problem that consistently arose was a lack of programme fidelity as teachers picked components from different programmes to construct their own approach. This selection was unguided and haphazard, with mainly anecdotal evidence used to support these decisions [8, 58]. It may be that interventions were too

restrictive and given that adaptable programmes are more likely to be adopted; especially when supported by training to help teachers decide which elements to use; these could improve fidelity.

A recent review examined the use of computers and the internet to deliver alcohol and drug use prevention programmes in schools. These formats resulted in increased knowledge about alcohol and showed significant promise in terms of the ease of implementation, cost and programme fidelity (the extent to which a single programme was adhered to). However there was little definitive evidence to suggest that these interventions were effective in reducing problem drinking [31]. With these technologies becoming increasingly ubiquitous in school and in children's home lives, it is important to ensure that future research explores the impact of social media and other technological platforms in delivering standardised and interactive programmes.

Programmes that are successful in controlled settings may not be applicable in the classroom environment. It is therefore of vital importance to ensure that educational experts and local teaching professionals are involved and consulted in programme design. For these to be fully effective, we recommend that teachers are empowered to positively impact on upcoming work by introducing research skills into teacher training programmes, or by offering teachers the opportunity to explore opportunities in educational research. This could apply to all areas of education, not just limited to alcohol.

Recommendation:

- **Establish networks for the dissemination of research between educational professionals.**

5.4 Realistic norms not scare tactics

Investigating beliefs about what constituted 'normal' drinking behaviour was a core aspect of many successful programmes [27, 54, 55]. Distorted perceptions could be corrected by eliciting misconceptions and providing accurate information about actual alcohol behaviours in the study groups. One study even found that without normative education, developing resistance skills actually increased alcohol use [59]. In contrast,

'scare tactics', presenting a heavily distorted picture of the normal outcomes among those drinking alcohol, were ineffective and alienated students [8, 29, 60, 61].

The same message rings true of punitive school alcohol policies on student drinking, which has rarely been investigated. One study, however sought to investigate the correlation between school alcohol policy and student drinking behaviours [51]. This study used data from 1854 secondary schools in Washington State, USA and Victoria, Australia compiled over 2 years as part of an International Youth Development Study. The authors found that perceived stricter policy enforcement, but not harsher penalties, were associated with reduced self-reported student drinking on school grounds. However, there was no strong evidence that these associations existed beyond the school grounds.

5.5 Which issues remain?

Despite encouraging progress in some areas, there are a number of issues which remain to be addressed. In particular, a gold-standard of education provision based on the best evidence available is far from the norm. There is a disconnect between available evidence and the day-to-day practice of teaching, with little effort made to support dialogue between the two domains. A variety of resources are lacking: from funding to curriculum time, to reliable and current alcohol information.

In terms of our approach to the issue, the evidence base has repeatedly been criticised in several reviews over decades. Yet, the situation is not improving: reporting of programme content is scatter-gun in nature and generally inadequate, while there is still no consensus on the most relevant outcome measures, or approaches for evaluating interventions. Indeed, many interventions go unexamined, with teachers rarely in a position to participate in or embark on research projects.

The majority of educational interventions are hampered by a lack of formal evaluation. Without this process it is impossible to tell which interventions are effective. This hampers the sharing of best practice and continues to dilute the pool of evidence for future work. Robust evaluation requires dedicated funding, which if not separately designated comes at the expense of the intervention itself. Specific incentives to

evaluate studies, through a dedicated funding arm, will go a long way to ensure that future work in this field remains effective and economically viable. With many of these interventions closely linked to public spending through health and education budgets, it is vital to include evaluations of cost-effectiveness (which are largely absent from the literature) in these formal evaluations.

6 Conclusion

Key elements required considered essential for a successful alcohol education programme:

- Strong social norms component.
- Skills-based approach that incorporates personal, social and critical thinking skills.
- Delivery that places more emphasis on interactive teaching rather than instructive and passive approaches.
- Age-appropriate goals, with programmes targeting older children more focussed towards a harm-minimisation approach as opposed to a purely abstinence approach.
- Heavy involvement of educational experts and local teaching professionals in programme design.
- Particular consideration of the demographics, social norms, and educational structures of the region and country in question.
- Sufficiently adaptable to allow teachers to adopt them for the individual classroom setting they are delivering the session in.
- Dedicated independent evaluation by a standardised set of criteria.
- Adequate teacher training to ensure that facilitators are able to discuss issues openly and without judgement.

Key Issues remaining for alcohol education in schools:

1. Alcohol education provision is uncoordinated and a wide range of different strategies are used, many of which are unproven or unevaluated.
2. Lack of curriculum time devoted to alcohol education
3. Lack of funding needed to secure resources for the purpose of alcohol education
4. Lack of authoritative, up-to-date resources
5. Success is strongly teacher-dependent, with programmes typically delivered by under-supported generalists. It remains unclear who, from peers to external speakers, is best-placed to deliver programmes

6. School alcohol and drugs policies remain focussed on handling incidents rather than guiding education
7. Primary school teachers in particular, are uncertain about their role and appropriate approaches

Limitations with our analysis:

1. The evidence base remains poor despite years of recommendations by successive reviews that it is deficient. This is especially the case for the evidence of improved behaviours.
2. Current literature lacks consistent categories and definitions to evaluate studies. Past reviews have recognised this as an obstacle to robust evaluation and subsequent endorsement of programmes and their components. Whilst there have been attempts by organisations such as Mentor Adepis and the Mentor International Prevention Hub to correct this, more effort is needed to establish a universally accepted framework [62].
3. Even the evidence that does exist is not widely disseminated, nor well-adopted by schools and teachers.
4. Lack of program fidelity. Selection of programmes by schools is unsystematic and there is little guidance to suggest which evidence-based programmes would be effective in any given setting. Indeed, the evidence base required to provide such guidance is absent.
5. Cost-effectiveness is rarely assessed
6. A disproportionate amount of the existing research is from the US setting.
7. The benefits of new technologies remain underexplored.

Consider making health and social education a compulsory part of national curricula and highlight the importance of alcohol education.

Recommendations

Alcohol Education in schools:

1. Explore ring-fencing for health and social education funding to support schools in accessing evidence-based cost-effective resources
2. Consider making health and social education a compulsory part of national curricula and highlight the importance of alcohol education.
3. Implement and endorse a single authoritative online platform in each country to provide free and easily accessible information on alcohol harms, successful education programmes, and family based interventions to teachers, parents and pupils. This platform should provide resources to help schools, policy makers and health educators pick methods that are suitable for their local population.
4. Adopt evidence-based techniques: skills-focused, harm reduction teaching with a social norms component
5. Emphasise the role of adequate teacher training and commitment of all school-based educators for the effective delivery of interventions.
6. Schools must shift the focus of their alcohol and drugs policies from punitive to preventative measures, emphasising the role of alcohol education
7. Provide specific guidance for primary school teachers highlighting general interventions, when to teach children about alcohol specifically, and the importance of non-didactic skills-based approaches.
8. Explore novel interventions and methods including the use of online and social media platforms to deliver standardised and interactive programmes.

Broader Goals:

1. Establish a nationwide campaign across schools to emphasise the importance of research in education (including alcohol education), and highlighting the benefits to pupils, teachers and schools. The Mentor Adepis framework, funded by the UK Department for Education, has potential to be implemented in other European nations.
2. Work with schools, academics and educators to create a systematic in-house approach to educational research and networks for the dissemination of research and best practice between these groups.
3. Introduce research skills into teacher training programmes and explore the possibility of creating salaried “teacher-researcher” roles to foster the growth of the educational research community.
4. Centrally co-ordinate further research to encourage robust methods across large cohorts, including randomised control trials (with new interventions trialled against existing best practice) and longitudinal studies.
5. Improve reporting of programme characteristics by providing a standardised model for classifying programme components and provide specific training in evaluating education programmes to educational researchers.
6. Ensure future research considers a cost-benefit analysis.

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Appendix 1 – school based programme details

Table 1: General approach programs considered effective

Intervention	Target	Features & areas developed	Evaluation
Life-Skills Training [18] [35] [50]	7-12yos USA	10-15 initial sessions +boosters; teacher-delivered Abstinence approach Psychosocial approach: • Drug resistance skills • Personal self-management skills • General social skills	Increased knowledge, awareness & assertiveness Research methods challenged.
European Drug Addiction Prevention "Unplugged" [16]	12-14yos Europe	2.5 day training course then 12 x 1h units; teacher-delivered Modifiable w/peer or parents inclusion Psychosocial approach: • Critical thinking & decision making skills • Interpersonal skills • Normative beliefs correction • Knowledge	Reduced progression of alcohol use and frequency of drunkenness.
Good Behaviour	<11yos USA &	In-class game – children rewarded for Good Behaviour	Lower prevalence of

Game [17] [63]	Europe	initially during set game periods with immediate reward, then with covert, longer game periods and delayed reward.	problematic alcohol use.

Table 2: Alcohol-specific programs in the UK

Intervention	Target	Features	Evaluation
SHAHRP [20] [64] [65]	14-16yo NI (& Australia)	Year one: 8 activity-based lessons. Year two: 5 booster lessons; teacher manual & detailed lesson plans; DVD scenarios teacher-delivered. Harm reduction approach Psychosocial approach: • Interactive • Focus on staff development & support	Increase knowledge & safer alcohol-related attitudes, reduced alcohol consumption by frequency and amount reduced alcohol harm.
MEDALC [37]	13-15yo Wales	Alcohol education delivered and developed by medical students; students given brief teaching skills training; learning material developed ad hoc by medical students themselves.	Increased knowledge, reduced alcohol related risk taking attitudes. Anecdotal evidence.
Talk About Alcohol [22]	11-18yo England	“Pick and mix” approach w/ basic program requirements: 4 lessons in year 1, 2 in year 2, 1 hour on website.	Delayed onset of drinking, increased knowledge.

23		Free tools for teachers including workbook of lesson plans, DVDs, websites for teachers, pupils & parents.	Robust evaluation.

Table 3: New interventions

Intervention	Target	Features	Evaluation
Slick Tracy Home Team Program & Project Northland, the Amazing Alternatives! 25	11-12yo Poland	5 sessions led by teachers & peer leaders; & facilitated small-group discussions; parent-child activities directed by 4 booklets for homework; used audio recording of testimony from other teenagers. Psychosocial approach: • Identify & resist pressure to drink alcohol	Delay in adolescent initiation of getting drunk, reduction in pro-alcohol attitudes, and increase in alcohol related knowledge. No improvement in alcohol use rates. Low implementation fidelity. Self-completion anonymous questionnaires.
Drug Education in Victorian Schools 26	12-14yo Australia	10 lessons & parent child activities • Harm minimisation approach • Interactive • Skill-based • Knowledge component	Increase knowledge. Reduced increase in alcohol consumption, reduced increase

		• Normative beliefs correction	in harms associated with drinking, no change in attitude towards alcohol, proportion of drinker or at-risk drinkers.