Tackling Alcohol Misuse in Teenagers: What Works and How Can Practice Develop?

Commissioned by The Health and Europe Centre

Funded by NHS Eastern and Coastal Kent Social Marketing Committee.

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Foreword

The Health and Europe Centre is a Social Enterprise Company working in partnership with the Kent and Medway Primary Care Trusts; The Kent and Medway NHS and Social Care Partnership Trust and NHS South East Coast;

The aim of the Health and Europe Centre is to add value to the work of the stakeholders by creating relationships within Europe and EU institutions. Such relationships provide the health and social care sector in Kent and Medway with opportunities to improve the health and wellbeing of the local population by:

- Becoming involved in a range of European health initiatives, including participation in EU-funded programmes, exchange of good practice and collaboration with colleagues in other European countries;
- Engaging with EU-focused workforce development opportunities.
- Providing practical examples of different ways of working from across the European Union

In February 2009, the Health and Europe Centre commissioned an international literature review to identify effective interventions in relation to the issue of young people and alcohol. This piece of research has been funded through the NHS Eastern and Coastal Kent Social Marketing Committee and its primary purpose has been to inform the content of ‘WASTED: An International Conference on Alcohol and Young People’ which is taking place on 20th November 2009 in Ashford, Kent. The conference aims to highlight effective interventions which can be used to redesign services and target existing resources more effectively, leading to a longer-term reduction in underage drinking.

Another specific aim of the literature review has been to identify successful or promising interventions which have used social marketing techniques to prevent, reduce or delay the onset of drinking amongst adolescents and to disseminate the results of these findings to local policy makers and practitioners.

Additional copies of this report may be found on the Health and Europe Centre’s website: www.healthandeuropecentre.nhs.uk
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Inventory of Studies
Tackling Alcohol Misuse in Teenagers: What Works and How Can Practice Develop?

1 Introduction and Aims

The incidence and prevalence of alcohol misuse among young people and the associated harm caused is an area of growing social concern for policy makers, health and social care workers, the criminal justice system, youth workers, teachers and parents throughout the Western world. There is increasing evidence of the impact drinking is having on young people’s long and short term health and in the UK, there is particular cause for concern. A comparative European study of drinking among 15-18 year olds showed that UK figures for alcohol consumption were some of the highest in Europe; among 11-15 year olds, the average weekly consumption has more than doubled since 1990 from 5.3 units per week to 11.4 units in 2006 (Alcohol Concern Factsheet 2009)

Alcohol is usually the first substance used during adolescence and its use is often associated with progressive experimentation with other illicit or harmful substances (Velleman et al 2005). Research also indicates that young people who start drinking at an early age are more likely to increase their drinking and to experience alcohol-related problems as a young adult (Hawkins et al 1997). It is vital therefore to have a clear understanding of the effectiveness of alternative interventions not only for the primary prevention of alcohol misuse, but also in order to influence the negative course of early onset drinking.

The main focus of this literature review was to identify those studies that looked specifically at effectiveness in tackling teenage alcohol consumption and preventing or reducing alcohol use/abuse amongst young people, with the purpose of identifying elements of good practice that can inform practice interventions in Kent and Medway. This review also included identification of those interventions that had used a social marketing approach as defined by Andreason (1994). Social marketing as an effective method of health promotion is gaining recognition (Stead et al 2007). In addition, there is considerable local investment in the use of social marketing techniques, therefore this addition to the literature would further inform strategy and intervention planning.

1.1 Aims

The aims of the literature review were to:

- undertake a search of the international literature to identify effective interventions to tackle alcohol misuse in young people;
- identify those interventions that have used social marketing techniques;
- describe elements good practice and identify transferable elements of practice.
2 Method

2.1 Criteria for Selection of the Target Group
Three main inclusion criteria were used:

2.1.1 Age range of 11-19
The primary focus was on the teenage years, however studies that looked at older or younger groups were included provided the average age sat within this specified age range, or the findings would have significance for the population under study.

2.1.2 Literature from the year 2000 to present.
The purpose here was to capitalise on the existing systematic reviews on the subject that had examined the literature in detail (eg the Cochrane Review 1970-2001; Foxcroft et al 2002), and to include a two year gap to account for any publication time-lag of these reviews.

2.1.3 All teenagers irrespective of gender, ethnic and socioeconomic background, degree of vulnerability or risk.
It was seen to be important to include as many social and contextual variables as possible. However, two areas were excluded:
   o There were a small number of studies that focused on teenagers with severe mental and/or physical addictive pathology. These youths fell into the following categories: juvenile offenders, homeless youths and delinquents. In general, interventions with these groups required a high degree of specialism with trained clinicians. They were excluded as their transferability to general health promotion practice may have been limited;
   o As an important feature of this literature review was to identify transferable elements of good practice from the international interventions to Kent and Medway, the review was sensitive to aspects within the literature that would not be acceptable to public health practice in the Kent and Medway area. This included interventions that had a strong religious basis.

2.2 Types of Studies Included
While it is traditionally argued that systematic reviews and controlled trials provide the best evidence of effectiveness (Khan et al 2001), the search undertaken here was purposefully broad in order to incorporate studies using different methods. The following three main study types were selected and reviewed:

2.2.1 Clinical Trials
In order to identify the most effective interventions, a search for good quality clinical trials was made in the first instance. This included a search for original papers and systematic reviews. The latter had two advantages; it reduced the search process to one that was manageable in the timeframe, and ensured that all studies included had been judged of sufficient methodological quality to yield reliable evidence.
2.2.2 Multi-Method Studies
In addition, a search was conducted for non-trial studies that used mixed methods (triangulation of qualitative and quantitative approaches) to identify effectiveness. This was in recognition of two main issues. Firstly, systematic reviews on the subject have indicated promising areas but in general have failed to provide any conclusive evidence; and secondly, positive outcomes from studies that are not amenable to clinical trial could provide important transferable information for practitioners involved in health promotion. So while clinical trials are largely considered the most reliable, there tends to be less information about process variables which can reveal more about how and why projects work.

2.2.3 Multi-Intervention Studies
It was also recognised that many successful interventions, such as those that focus on 'risky behaviours' could have included other components such as tackling smoking, and sexually transmitted infections. These multi-intervention studies using either clinical trials or different evaluative methods were also screened and included if the alcohol intervention was significant.

2.3 Search Strategy
This section provides a list of key search terms and databases used. The numbers alongside the databases indicate the number of initial ‘hits’ for the search terms. There were a number of cross-checks made between articles (especially reviews)

**Key words:** Alcohol, drugs, teenager, adolescent, young people, family, community, intervention, programme.

**Databases:** Reviews on the following databases included studies where biases had been minimised and were largely of a clinical trial design:

- Cochrane Database of Systematic Reviews (1)
- Database of the Centre for Reviews and Dissemination (1)
- EPPI-Centre (Evidence for Policy and Practice Information) (1)
- NICE (National Institute for Health and Clinical Excellence) (2)

Parallel to this a search was made on PubMed and the University of Kent Academic Search Complete. The latter contains full text for over 5500 academic, social sciences, humanities, general science, education and multi-cultural journals. This includes over 4600 peer-reviewed journals. In addition to the full text, it also contains indexing and abstracts for a further 4000 journals. Academic Search Complete cross references the user with ScienceDirect, Ingenta, Medline, Cinahl. In addition, project searches were made on a range of other discreet organisational websites targeted more specifically at the subject.

- PubMed (1545)
- Academic Search Complete (562)
- European Monitoring Centre for Drugs and Drug Addiction (190)
- Alcohol Education Research Council (4)
Also, journals dedicated to the subject area were searched in more detail:

- Addictive Behaviour
- Addiction
- Drug and Alcohol Review
- Journal of Adolescent Health

### 2.4 Analysis Framework

The analysis framework consisted of three elements.

#### 2.4.1 Thematic Classification

An initial sweep of the literature identified some clear approaches to alcohol reduction interventions. In the main, this was according to context (i.e., where the intervention occurred), although a categorisation relating to new information technology and media was developed as these interventions were seen as innovative and in some cases promising. Other cross-cutting themes such as ethnicity and gender were incorporated within the themes. The review was therefore organised under these categories:

- School-based interventions
  - School only
  - School and community
  - School and family
- University-based interventions
- Community-based interventions
- Media/IT based interventions
- Hospital-based interventions

In addition, a number of critical review articles were found that provided some interesting perspectives on the various approaches adopted. This information will be used within a general critical commentary of the finding.

#### 2.4.2 Analytical Inventory

Remaining within the themes, the literature was then subjected to analysis using an inventory of categories, a method often used in literature review analysis (e.g., Stead et al. 2007). This inventory helped organise the literature, and also permitted the emergence of patterns across the data, which facilitated the emergence of collective elements of good practice. The following categories were used:

- Country of origin
- Author(s)
- Intervention name
- Origin of literature (i.e., if synthesised from a systematic review or from original article)
2.4.3 Analysis of Social Marketing Components

As mentioned, this was undertaken using Andreason’s criteria. These criteria have been used and validated in work undertaken by the Institute for Social Marketing (http://www.ism.stir.ac.uk/publications_index.htm). The literature was analysed looking at the extent to which the following benchmark criteria were adopted:

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Explanation</th>
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<tbody>
<tr>
<td>1. Behaviour change</td>
<td>Intervention seeks to change behaviour and has specific measurable behavioural objectives</td>
</tr>
<tr>
<td>2. Consumer research</td>
<td>Intervention is based on an understanding of consumer experiences, values and needs. Formative research is conducted to identify these intervention elements are pre-tested with the target.</td>
</tr>
<tr>
<td>3. Segmentation/targeting</td>
<td>Different segmentation variables are considered when selecting the intervention target group. Intervention strategy is tailored for the selected segment/s.</td>
</tr>
<tr>
<td>4. Marketing mix</td>
<td>Intervention considers the best strategic application of the “marketing mix”. This consists of the four Ps of “product”, “price”, “place” and “promotion”. Other Ps might include “policy change” or “people” (e.g. training is provided to intervention delivery agents). Interventions which only use the promotion P are social advertising, not social marketing.</td>
</tr>
<tr>
<td>5. Exchange</td>
<td>Intervention considers what will motivate people to engage voluntarily with the intervention and offers them something beneficial in return. The offered benefit may be intangible (e.g. personal satisfaction) or tangible (e.g. rewards for participating in the programme and making behavioural changes).</td>
</tr>
<tr>
<td>6. Competition</td>
<td>Competing forces to the behaviour change are analysed. Intervention considers the appeal of competing behaviours (including current behaviour) and uses strategies that seeks to remove or minimise this competition.</td>
</tr>
</tbody>
</table>
3 Findings

A completed inventory of the analysed literature is appended. The data is provided chronologically in the respective themes (2.4.2). This section will provide a numerical breakdown of the literature per theme and country, and continue with a theme by theme overview, referring to the literature by author and cross referenced with the inventory number. The section will continue with a list of the elements of good practice extracted from the literature.

3.1 Numerical Overview

A total of 54 studies were reviewed from 6 countries. Two studies were undertaken by an EU collaborative. Table 1 gives a breakdown by theme.

Table 1: Number of Studies (n=54) per Theme per Country

<table>
<thead>
<tr>
<th>School-Based Interventions</th>
<th>University</th>
<th>Community</th>
<th>IT/ Media</th>
<th>Hospital</th>
</tr>
</thead>
<tbody>
<tr>
<td>School (Only)</td>
<td>School + Community</td>
<td>School + Family</td>
<td>USA 9</td>
<td>3</td>
</tr>
<tr>
<td>UK</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td>3</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweden</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Netherlands</td>
<td>1</td>
<td></td>
<td></td>
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<tr>
<td>Iceland</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>EU</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total (54)</td>
<td>15</td>
<td>4</td>
<td>17</td>
<td>3</td>
</tr>
</tbody>
</table>

As found in previous reviews, the majority of studies emanated from the USA (n=38). Six were from the UK, four from Australia, two from Sweden and one from the Netherlands and Iceland. Most studies were school-based. From the 54 studies reviewed, 28 were retrieved from systematic reviews (Foxcroft et al 2002; Foxcroft 2006) a meta-analysis (Smit et al 2008) and other reviews (Natarajan & Kaner 2004; Stewart et al 2005, Winters et al 2007; Skager 2007; Boekeloo & Griffin 2007), and 26 from original articles. Many of the studies are follow-up of cohorts, testing the longevity of effects. Further description of this is given in the relevant themes.

With respect to study type, there were 44 clinical trials, three quasi-experimental studies and seven non-trial multi-method studies which were process evaluation. Of these, 31 were multi-intervention studies looking in the main at alcohol, cigarettes and drugs. Only the effects on alcohol consumption are reported.

A total of 20 reviews were retrieved. One of these was a systematic review of primary prevention for alcohol misuse in young people from the Cochrane Collaboration (Foxcroft et al 2002), and this was followed up in 2006 with a rapid review as a WHO technical report (Foxcroft 2006). Most of the reviews were American (18), with four from the UK, and one from Australia and the Netherlands respectively (see references for full list). Subjects covered general systematic reviews, as well as topic focused reviews such as brief alcohol interventions (O’Leary Tevyaw & Monti 2004), Life Skills Training Programmes (Gorman 2002),
family-based therapies (Liddle 2004), and school-based interventions (Wagner et al 2004).

3.2 Deviations to Inclusion Criteria
There were two main deviations from the inclusion criteria:

- Time span: Two studies were included that were published before 2000 as they were seen as of particular relevance (see School 1 and Community 1).
- Age range: While the review focused largely on the 11-19 year range, a small proportion of studies were included where the average age of the sample group lay marginally outside of this (slightly younger and older). Again, this was due to the relevance of the findings for the age range under study.

3.3 Studies not included
A total of 16 studies were excluded from the review. This was due to the following reasons:

- The study effects were minimal. While this could be said of many studies included, for those excluded there were no other redeeming features that would warrant inclusion, such as social marketing elements or relevant process indicators for practice.
- In multi-intervention studies, the results for the alcohol arm were not sufficiently clear or too small.
- The focus was on young people with severe existing drug problems and associated pathology.
- The paper was a close replication of another published elsewhere by the same authors and whilst reporting a different slant, shed no further light on outcomes or process variables.
- Studies reported results from more than 15-20 years ago. It was felt that findings were too historic and would no longer provide relevant transferable data.
- There was a very specific cultural focus on small numbers (eg Indian young people from New Dehli).

3.4 School-Based Interventions
This was by far the largest section reviewed (39 studies included). School-based interventions have grown in popularity in recent years; proponents of this approach argue that such approaches provide greater access to a representative and generalisable population of young people (Wagner et al 2004) and it cannot be denied that they are a captive audience. In addition, researchers have noted that there is the potential for greater effectiveness and validity in study design, due to high sample numbers, stability of the population for follow-up measures of intervention effects, and better control of environmental variables (Faggiano et al 2007).

From a practical viewpoint, the school-based intervention model offers the advantage of taking interventions directly to those who need it. In addition, it can
assess and influence the determinants and consequences of problem behaviours, as well as providing interventions in a very high-impact social environment. This in turn can shape the development and adaptation of behaviour (Wagner et al 2004). School-based interventions have expanded to include parents, and the wider community, recognising the fact that interventions become more effective when including the wider social infrastructure of young people, yet capitalising upon the stability of the school research environment.

This section was sub-divided into three study types; School; School and Community; and School and Family, and summaries of the findings in the inventory are reported here.

### 3.4.1 School

In general these 15 studies were characterised by clinical trials using one or two interventions plus control with large numbers of young people, followed up after varying periods of time to measure effects, usually annually. All interventions were delivered in school with either trained teachers or external facilitators. Most spanned over a year and some included ‘booster’ sessions taking place after varying periods of time (per term or yearly for example). Booster sessions were important to deliver the main messages again, but tuned to the growing needs of the audience. For example, McBride et al (2003: School 9) provided a 17 session programme followed up a year later with 12 more sessions accounting for changing knowledge levels, increased risky behaviour, attitudes, context of use, and harm to self and others.

The interventions could be clustered into the following types:

**Normative Educational Approaches (eg. School 3, 7, 9)**

These focused largely on drug abuse prevention programmes such as information giving in the classroom using interactive techniques, discussion, role play and videos. Some also incorporated a degree of skills training, such as resisting pro-drug pressures. Donaldson et al’s study (2000: School 3) is of particular interest as it tested these components alongside resistance skills to combat peer pressure, and as one of the measures, used both self and reciprocal best friend reports of substance use. This large scale study showed that, over time, this type of normative education can hold small but sustainable effects in school settings where teenagers are likely to overestimate the drug use prevalence and acceptability beliefs of their peers.

Farrington et al (2000: School 2) is included as it provides some key process variables for this approach. The authors found that it was important to provide programme activities that are interactive and based on skill development and that have a goal that is relevant and inclusive of all young people, in their case it was harm minimisation. Coupled with this, programmes need to be delivered at relevant periods in young people’s development, impart knowledge that is of immediate practical use to young people and have booster sessions in later years. To iron out problems, pilot testing the program with teachers and students is vital, as well as providing appropriate teacher training for interactive delivery of the program.
**Brief Motivational Interventions (eg. School 11, 14, 15)**

Brief alcohol intervention appears to represent a promising approach for the reduction of alcohol-related harm in young people (Natarajan & Kaner 2004; Raistrick et al 2006). In general it is seen as a secondary prevention activity aimed at those who are already demonstrating signs of hazardous drinking or risky behaviour (O’Leary et al 2004). The brief interventions consist of structured ‘talk-based’ therapy of short duration, delivered usually in four or fewer sessions. Werch et al (2005: School 11) for example tested the efficacy of a brief, multi-health intervention integrating physical activity using one-to-one consultations and health promotion literature. Given the briefness and simplicity of the intervention the significance of effects at year one was fairly impressive, signalling potentially high cost effectiveness. This study also demonstrates the potential for taking brief interventions out of the classroom. Many of the levels of consumption however had more or less returned to pre-test levels after one year, suggesting the utility of regular ‘booster’ interventions.

Conrod et al’s (2008: School 15) evidence is also compelling in this field. Personality targeted brief interventions seemed to be effective in preventing the growth of binge drinking in those students with a sensation seeking personality. This study contributes towards the notion of targeting as an effective approach to prevention. However such an approach is more specialised and may not be easy to apply as a general health promotion approach.

**Life skills training (eg. School 1, 5, 8,10 & 12)**

Life Skills Training (LST) within schools would appear to be a prominent approach in terms of its consistency and ability to demonstrate positive effects (Gorman 2002; Foxcroft et al 2002). An early Botvin study reported in 1995 (School 1) focused on developing cognitive behavioural abilities to raise self-esteem, resistance to pressure, assertiveness, anxiety management and communication skills. At the three year follow-up, knowledge and attitudes towards drinking improved, and frequency of being drunk decreased in the intervention group, although the differences between the groups were small and the population was criticised as being mainly white middle class. A further study by the same author (Botvin et al 2001: School 5) used a similar programme but this time targeted at minority ethnic teenagers to combat earlier criticisms. Results were more promising with larger differences between the intervention and control groups, suggesting the effectiveness of psycho-social models for specific groups. However, the attrition rate was high which may have skewed the sample.

In terms of outcomes, despite some promising findings especially in the brief interventions, the efforts and costs involved in designing such large studies under clinical trial conditions do not in general appear to reap rewards with respect to definitive results, which are on the whole small and open to criticism. For example, Gorman (2002) reports that the evidence from Botvin et al’s (2001) six year trial of LST programme suggests that its effectiveness in reducing alcohol and drug use only emerges in analyses that are conducted with small sub-samples of programme
participants. Gorman considers this a ‘violation’ of a fundamental principle of randomised controlled trials.

In addition, a significant overall weakness is the seemingly heavy reliance on self-report measures, which when applied to past and present alcohol consumption, may not be as valid as assumed. Also, there are problems with fidelity issues regarding programme delivery. Fidelity refers to the extent to which teaching of the intervention does not vary between teachers or facilitators but remains faithful and consistent to the programme. Fagan & Mihalic’s (2003: School 8) process evaluation of their LST sheds some light on this. They emphasise the importance of effective working relationships and clear communication between those overseeing the programme and the teachers charged with implementing it. So relationships and clear communication with teachers or those charged with presenting/teaching the programmes on the ground is essential.

Halifors et al (2006: School 12) consider an additional difficulty, this time with transferability of findings. The key findings of their study and the point of the paper is to note the difference between efficacy trials (to see whether the intervention does more harm than good) and effectiveness trials which test whether the interventions have any sizeable impact in ‘real world conditions’. Positive efficacy trial findings were not replicated in the effectiveness trial, which highlights the difficulties of applying some impacts into live situations.

**Social Marketing Elements**

With respect to social marketing elements, many were not overly visible in the studies due perhaps to the normative style of some of the approaches, in that information was given as a curriculum programme rather than by any particular means of appealing to differentiating or capturing the specific social market. Of note however is Goldberg et al’s intervention (2000: School 4) which was concerned with developing a drugs awareness programme for boys around the medium of sport. This involved interactive classroom and exercise sessions facilitated by coaches, looking at drug abuse in sport but also wider issues relating to alcohol. Some of the social marketing benchmarks are strong here, with a specific (young-male-adolescent) and appealing focus on sports training as well as information on substance misuse. Hence there is a clear behavioural change sought, the audience is segmented and targeted appropriately and the scheme is attractive by way of the training offered through professionals. In addition, Botvin et al’s intervention (2001: School 5) developing life-skills among minority ethnic teenagers was developed and modified over a long period of time and geared towards a specific group, but again the social marketing elements are not taken further. However Fagan & Mihalic’s (2003: School 6) comments highlight a tension between programme fidelity and a social marketing approach; sticking rigidly to what works at a scientific level (fidelity) and being contextually relevant from a social marketing angle are often not compatible.
3.4.2 School and Community

The four studies in this section highlight the potential of projects to cross over the boundaries of the school into the community, in recognition of the wider societal influences related to alcohol consumption. They are again large studies with large cohorts, all longitudinal in order to establish follow-on effects of interventions and applying RCT design. One paper reports on process issues emanating from a study yet to be completed (Stead et al 2007: School and Community 4).

The interventions focus on raising community awareness of how to enable young people to resist the effects of alcohol and drugs using a wide range of initiatives, with the aim of reducing overall alcohol consumption. Aspects include life skills school-based curriculum similar to those described in the above section, parent involvement and education, youth development, peer-led activity and the mobilisation of community forces to create a more ‘alcohol aware’ community. Slater et al’s study (2006: School and Community 3) is particularly noteworthy. Local and wider research was used as a first step to better understand adolescents’ attitudes, values and behaviours about substance use, and this guided the strategy for the in-school media campaign, ‘Be Under Your Own Influence’. Knowledge of promotional issues such as media preferences were gained and images like rock-climbing were used that were appealing to risk-oriented, sensation-seeking youth. The central premise of the study related to the understanding that adolescence is about attaining greater independence and autonomy and the community has a part to play. The campaign sought to emphasize the inconsistency of drug, alcohol and tobacco use with teenagers’ aspirations and the results were compelling. The likelihood of alcohol use was less with the combined community intervention and in-school media compared with the control.

The studies in general would appear strong in design and impressive in their ability to conduct community-wide trials over long periods of time, and to adapt interventions to suit the changing needs of young people as they mature. However, the outcomes do not demonstrate large changes in behaviour, as measured by indicators such as growth curve analysis of past and present alcohol use, drunkenness and ‘hazardous’ (binge) drinking. Two papers report on process outcomes, notably Stead et al (2007: School and Community 4), who suggest that fidelity issues within the design compromise the effectiveness of the intervention. Stead et al suggest that interventions may work best if there is room for flexibility and discussion within the programme to meet the needs of the young people attending, which would potentially contravene fidelity rules of programme delivery. This is particularly so for complex community affiliated interventions where the many stakeholders involved and the high level of user-involvement could make rigid adherence to programme delivery less meaningful.

Social Marketing Elements

Of particular note are the social marketing elements of these studies, which in the main would appear to fulfil Andreason’s benchmark criteria (see p. for table). For example, Perry et al’s (2003: School and Community 2) DARE plus project used a strong mix of user and community involvement coupled with previous research to develop their programme. It had clear behavioural goals, and used a mix of peer led classroom sessions with parental involvement. It also included youth-led activities, community adult action teams, and postcard mailings to parents as forms of
promotion. A clear segmentation of audience was evident (between parent and child and in curriculum design as the child advances through school) as well as an attempt to make the intervention attractive. Also, Slater et al (2006: School and Community 3) used social marketing principles to guide the development of the media for behavioural change, as described in the previous section.

3.4.3 School and Family
There were a total of 17 studies included in this section. Studies involving families and children appear to be gathering momentum in recent years and showing promising effects in the short and longer term. Velleman et al (2005) remark that researchers and practitioners are now assigning an increasingly crucial role to the family in the development or prevention of substance misuse. Interventions are based on the idea that the family plays an important part in socialising children to adjust to the demands and opportunities of the social environment. It has been known for some time that early antisocial behaviour is a strong predictor of substance misuse (Yoshikawa 1994), and that strengthening families can have a buffering effect against a number of risky behaviours. The studies reviewed, again largely RCT in design, demonstrated varying content and application, through different media and using clinicians, counsellors or trained teachers. Interventions also varied in the amount to which parents were involved. Some interesting examples are outlined here.

Park et al’s study (2000: School and Family 1) had a strong focus on parents and developed a curriculum that helped parents to learn consistent communication skills for giving effective anti-alcohol messages, reducing family conflict, and resisting peer pressure to drink. While the short term effects were not convincing, Smit et al (2008) state that the parental involvement was advantageous and that there may have been longer term benefits beyond the scope of the study.

The large European study ‘Unplugged’ involving seven countries (Faggiano et al 2008: School and Family 16) adds further weight to the family approach. The study adopted a social influence design that included social skills and personal skills alongside normative education. Subjects were randomised to either of three variants of the intervention (basic curriculum, basic with peer involvement, and basic with parent involvement) with interactive workshops for parents. While it was unclear whether the results took full account of the baseline data, where the incidence of drinking and regular drinking among control schools was a lot higher, there was a lower increase in drinking among the parent arm of the intervention group than any of the others. This study is also noteworthy in that the programme was transferable across several culturally different European countries and is still expanding.

DeGarmo et al (2009: School and Family 17) used an approach firmly embedded in psychology to develop an intervention to support and co-ordinate parents, teachers and young people in generating positive affirmation for behaviour as opposed to threat of negative sanctions. The latter is associated with poor social skills and higher levels of alcohol and other substance misuse. Young people aged 10-11 took part until 17-18 years and completed self-report questionnaires annually. The intervention was associated with approximately a 9% reduced risk in initiating alcohol use and the programme operated in a preventive way to reduce the growth rates for girls. This study highlighted interesting gender issues, in that girls seem to be more
responsive to such an approach. Coordinating between family, peer and teacher approaches to positive and negative behaviour would seem to be important if modes of reinforcing behaviour are to enter positive cycles. There were however high rates of attrition in this study which raises questions regarding the large reduction in self-reported risk.

In addition to this, there are two research collaboratives that are worth noting. The first is Werch et al (2000 - 2003b: School and Family 2, 3 & 6) who used variations of brief nurse-led individual consultations, letters and ‘prevention postcards’ to parents, family sessions with clinicians and family home packs with a focus on social skills. These three studies led by Werch show the development and gradual tailoring of family focused interventions which is impressive, and combined a social marketing element in terms of targeting the way messages were conveyed. While School and Family 2 showed significant results for those teenagers whose alcohol consumption was high, this was however not repeated and none of the results in School and Family 6 were significant.

The second collaborative is led by Spoth and dominates in this area, as its focus is on developing the Strengthening Families Programme (SFP) and has been reviewed as promising by reliable sources (Foxcroft et al 2002; Velleman et al 2005; Foxcroft 2006). The SFP is the best-known example of the potential for combining child and family approaches for a variety of risky behaviours in adults and children, and has been successfully evaluated and replicated in different settings and with different socio-economic groups across the USA. Originally developed by Kumpfer, Spoth, Molgaard and colleagues have taken this approach forward with a focus on drug and alcohol prevention in adolescents. Typically, the programme has components for each group independently and runs for half-day weekly sessions for 14 weeks. It is designed to develop specific protective or ‘resilience’ factors and to reduce risky behaviours by improving aspects such as communication styles, school involvement, and a more nurturing parenting manner. In addition, children develop positive goals for the future, improve their relationships with parents, manage stress and develop skills for dealing with peer pressure.

Spoth et al conducted two main studies over several years and publications report on results throughout this time period. The first study (Spoth et al 2001-2008: School and Family 4, 7 & 14) compared the Iowa SFP with Preparing for the Drug Free Years (PDFY) programme in 33 rural schools. This study seemed to be relatively effective in terms of reducing the initiation of alcohol. In the second study (Spoth et al 2002-2008: School and Family 5, 8 & 15), involved 36 rural schools in testing the effectiveness of a classroom-based Life Skill Training (LST) plus the SFP, with LST only and a control. At the five and a half year follow-up, the findings are mixed as the cohort reached their 18th year; although changes over time do seem to suggest some efficacy, the differences in behaviour are compelling but do not reach a significant difference. The studies seem to suggest that LST together with SFP was much more effective than the LST on its own, but both are more effective than the minimal contact control. It must be noted however that both of these studies were conducted in a white, rural community with potentially quite unique socio-cultural norms, despite claims of representativeness.
The SFP is currently being adapted for use in the UK (Allen et al 2006: School and Family 9, 10 & 11). The three papers included in this review describe important process evaluations and a small pilot study of the development and trial implementation of the SFP. The findings of these studies suggest the importance of recognising the cultural limitations around transferability in the style and content of interventions carried out in the USA and elsewhere. While interventions may well be applicable and effective when transferred, great attention must be paid to the cultural reference points, language and general content (such as games/activities) applied. The authors state the need for wider testing to authenticate the approach here.

So while the design of family-based interventions would seem to rest upon sound theory, there were clear uncertainties surrounding the reliability of the results of trials reviewed here. Despite this, in their 2005 review of family interventions, Velleman et al appear supportive of the role of the family in preventing and intervening with adolescent substance use and conclude that there is considerable evidence that family factors are important in protecting young people in their take up of the use of various substances. There is also evidence that the involvement of families in prevention programmes may lead to reduced levels of initiation.

But the picture is complex due to the many variables that are difficult to disentangle in the family setting. For example, Velleman et al (2005) base their positive overall assessment on substance misuse in general and the results for specific alcohol use are not always so convincing. Gorman et al (2007) are particularly critical of Strengthening Family Programmes, and specifically of Spoth’s studies (School and Family 5, 8 & 15). They provide a statistical critique and conclude that results are very fragile and of little practical significance. Gorman et al express their concern that programmes in the USA have widely adopted this approach to drug and alcohol use, believing it to be generalisable, rigorous and relevant to public health policy. In addition to this critique, it was apparent in our review that the reasons for why family interventions work is not always explicit and further process evaluations would be beneficial to shed light on this. Allen et al’s (2006) UK contributions are useful in this respect.

Despite these concerns however there is a ‘common sense’ approach to family involvement, with its rationale firmly embedded in theoretical foundations. What seems to be evident from the studies reviewed is that prevention programmes need to harness the family in ways that strengthen it, and it is likely that programmes such as the SFP will work by having both a specific effect on use and misuse of drugs and alcohol, and also by building levels of resilience among all family members.

**Social Marketing Elements**

With reference to social marketing approaches, on the whole there was little evidence of techniques being used. Werch et al’s studies (School and Family 2, 3 & 6) go some way towards this with clear motivation towards behavioural change and specific targeting and tailoring of the way messages are presented and refined over a number of studies. The means of marketing (via classes, one-to-one consultation with nurses, postcards to parents and take-home classes to be done as a family) was original and the authors considered the setting and means of promoting awareness. In the study ‘Unplugged’ (Faggiano et al 2007: School and Family 12), although it is based on the social influence approach, the intervention was delivered
through standard classroom settings, but there was some involvement in side-activities with either peers or parents. However little thought is given towards maintaining the audience’s attention or making the intervention attractive. Indeed as the high drop-out rate among the intervention schools makes clear, this latter aspect could be related to teachers (most schools dropped out shortly after teacher training days) as to the young people being targeted.

3.5 University-Based Interventions
The three American studies included in this section focus on alcohol reduction among first year 18 year old undergraduates ('freshers') and provide some interesting messages for practice, albeit at the 'older' end of our age range. The rationale for these studies is based on evidence that the first year of university is often a time of high alcohol consumption and associated risk-taking, even in the face of US drinking laws.

All are brief motivational interventions using RCT designs, one followed up after six weeks and the others after a year or longer. In two of the studies (University 1 & 2), students were selected on the basis of being heavy or moderate drinkers. All show degrees of effectiveness in reducing the quantity of alcohol consumed but there were variations in outcomes related to the negative consequences of drinking, which may be connected to the social context in which drinking occurs. The longitudinal studies do however tell us some important things about the 'exit trajectory' of teenage drinking. Those in the part of the population who go on to university will achieve some maturation effects regardless of intervention – they will peak in drinking at beginning of university and this starts to reduce again over time. However the studies also point to the potential for breaking negative dependencies among those already drinking heavily when they arrive at university. A further strength of these interventions would appear to be their personalised focus. It must be noted however that the sample were drawn from students of high socio-economic status, therefore the potential generalisability must be questioned.

Social Marketing Elements
There were very limited social marketing components in all studies.

3.6 Community Interventions
These nine studies were conducted in communities in America, Europe and Australia and used a variety of interventions aimed at the broad community population or specific cultural groups, and usually within a trial design. These are very interesting and impressive studies, complex to organise, manage and execute, and although they vary in effectiveness, they demonstrate potential (Foxcroft et al 2002; Foxcroft 2006).

Community-based projects are underpinned by the important view that many alcohol prevention programmes are limited in their effects due to the focus on individuals to the neglect of the wider societal influences. Some (eg Community 8 – the Trelleborg Project in Sweden) have based their programmes on a theoretical approach to describe the intensely social nature and rationale of alcohol consumption among young people, as developed by Wagenaar & Perry (1994). The core of this approach
is that a versatile programme is needed to tackle drinking habits, both in terms of supply and demand, and structural versus individual approaches, so that influences go beyond the intended target group and are sustainable. In addition, affiliations with peer group, parents, and the types of recreational activities available to young people are the strongest predictors of adolescent substance use and delinquency (Thorlindsson et al 2007). Hence the need for large-scale multi-stakeholder involvement. With this type of intervention model however, there are the inevitable problems in demonstrating cause and effect, applying experimental methods to complex community situations and controlling extraneous variables (Billings 2000). Saxe et al (2006) state that community models have yielded mixed results despite much attention and funding of the past decade.

Wagenaar et al (2000; Community 3) for example developed a five year intervention to reduce youth access to alcohol, and is typical of the wide stakeholder approach. Community organisers gained support of the community through stakeholders, heightening the project's profile and alcohol issues in general via local media. There were changes to local procedures and policies following a review on alcohol sales and monitoring. A community trial was conducted across 15 communities targeting a total of 1721 young people aged between 17 and 20. The types of measures used to gauge effectiveness included drink driving, alcohol related car crashes and self-reported heavy drinking. Overall there was limited evidence of significant effectiveness; arrests for drink driving were lower in the experimental community. Despite this, the mobilising of community is impressive with key components being community organisers and leadership, needed to galvanise and bring community stakeholders together. The cost-benefit ratio is also important here; the authors note that more that 1500 meetings were held in an attempt to affect change.

Community 2 (Schinke et al 2000) and 4 (Wu et al 2003) are examples of smaller culturally-focused community interventions that demonstrate more effectiveness as they move back to specific ethnic tailoring. Community 2 for example was a large trial of preventive interventions with Native American youth aged 10 years, based on Life Skills Training. At the three year follow up, there was a reduction in proportion of weekly drinkers, based on a measure of weekly drinking four or more drinks, with low attrition. Community 4 was predominantly an intervention with black teenagers focusing on HIV risk prevention where alcohol plays a part. This study had some short term positive outcomes, but interestingly, the intervention demonstrated that booster sessions were not effective in reducing alcohol risk in the longer term. With both these studies, however, the more focused the intervention, the less emphasis on community-wide involvement and change.

Sigfusdottir et al’s (2008) Icelandic study (Community 9) is however noteworthy and fully embraces the notion and importance of social capital generated by community and family involvement as a gateway to success and sustainability. In addition it uses a multi-method approach to evaluation. The study was a very large four level intervention based on evidence, reflection and action to lower substance use among adolescents. This had become particularly problematic in Iceland; routine annual data collected from 14-16 year olds demonstrated a rapid increase in reported substance misuse in the preceding years. The intervention levels were as follows:

- Level 1 was the national level with researchers, whereby the extent of the problem was scoped.
• In level 2, project team members used the collated data to consult with local communities such as policy makers, teachers, parents and community members.

• In level 3, interventions were developed based on the 'unique talents, spirit and imagination' of the local community, and actioned at individual, family and community levels.

• For level 4, a series of comprehensive process and outcome evaluations took place alongside integrative reflection and results were considered in relation to a new round of national level data. Annual data of two cohorts of over 7000 young people used for the data.

This study showed a consistent and impressive reduction in levels of alcohol and other substance abuse. Alongside the national survey, a number of indicators were used, such as family based measures (child/parent communication and the extent to which the parent knew where the young person was) alongside more community-wide factors such involvement in recreational activities. In particular, levels of reported drunkenness reduced from 38% in 1997 to 20% in 2007 - with Iceland falling from 4th worst alcohol abuse level (amongst young people) in Europe to 11th.

Key lessons are pointed out by the authors through the process evaluation. The study stresses the importance of simultaneously involving young people, parents, schools and other clubs/organisations for the intervention to work. In addition, they highlight that those who drink a lot are likely to spend little time with parents, so parent only interventions will be of limited value. The critical age of starting interventions is 12-13 years and it is vital not to run interventions too late.

Importantly, it is emphasised that interventions such as this should be a long-term investment. Using multiple layers with constant reflection, mean that it is possible to work effectively and confidently with both known and emerging community-level risk and protective factors for a particular behaviour, without attempting to prove a direct causal relationship. This is an important message to those intent on only pursuing and advocating one form of evidence.

Impressive though this is, there are reasons for caution that are noted by the authors. It is possible that the observed reduction in substance use was part of a secular trend similar to other countries in Europe. There was during this time an increased interest in the role of parental monitoring in Iceland and other Nordic countries, which may have accounted for outcomes such as the low rate of alcohol-related accidents. In addition, ecological factors such as educational policies and factors relating to youth unemployment may have been influential, and these were not accounted for. The authors also confess that ‘things move fast’ in Iceland and so those seeking to replicate the Icelandic Model should take this should take this cultural tendency into consideration. Nevertheless, the study demonstrates the value of a well-grounded theoretical framework that links community-wide mobilisation to individual behaviour, and has some valuable messages for practice.

Overall, this section of projects are of interest, and highlight the importance of a multi-method approach in an effort to combat the inevitable difficulties in establishing cause and effect due to the complexity of the variables involved. Tapping into what can be measured to demonstrate positive effects through trials may not be in reality
entirely possible, such as revealing subtle changes in community attitudes towards tolerance of youth drinking that may in the longer term bring about change in maturing teenagers. In wide-ranging, complex projects it is very often the unknown influences that are not measured or captured that build towards the success, but not making them visible can result in the effects not being transferable outside of the communities in which they took place. It is hardly surprising that such interventions are not widely taken up, as the effort and cost does not seem to match up to the outcome as measured within experimental conditions.

Social Marketing Elements
The social marketing potential of community-based interventions is evident, particularly with respect to Community 3 and 9. With the former, it was a clear goal to change the behaviour of different actors within the community, from vendors to families to other adults who might supply alcohol to young people. Specific social markets were targeted in both the public sector (councils, schools, enforcement agencies) and private (vendors, local businesses more widely and local media). The intervention was novel and there was specific targeting through individual meetings with stakeholders. With Community 9, the goal was to change the behaviour of young people and parents and to raise levels of social capital in communities. The approach was refined in an ongoing way using national data as a basis for discussing what can work at a local level, and involving local policy makers, experts, parents, school personnel and the public. Innovative and organic projects were developed within the local community to meet the specific needs of localities, and while there was no apparent segmentation, all were part of the target audience. In this sense it was likely that the product, place, and price were appropriate to the local market and it could be argued that a sense of ownership and involvement fostered interest against competition.

3.7 IT and Media Based Interventions
These four papers reporting a total of three separate trials again in America were all conducted by Schinke and colleagues between 2004 and 2006. While Slater et al’s (2006) study also makes a significant contribution to media based interventions, it is placed within the category of School and Community (see section 3.3.2)

Schinke’s work focused on testing the effectiveness of a computer-based programme to reduce underage drinking. IT/Media 1 & 3 report the results of one study and a four year follow-up respectively, that tested the programme with and without parental involvement. The intervention involved young people in completing a CD-ROM prevention program that covered aspects such as goal setting, coping, peer pressure, refusal skills, self-efficacy and effective communication. The programme used simulated obstacles and distractions with animated characters similar to their age, gender and ethnic-racial background, with the intention of developing skills of problem-solving and alcohol avoidance. The family interventions consisted of videos and newsletters sent to homes, and there were follow-up booster sessions at 1, 2 and 3 years. In general the CD-ROM programme demonstrated positive effects in reducing underage drinking. Results were only marginally in favour of the intervention with the CD-ROM combined with family intervention, which shows its potential relevance in either situation. Interestingly in the four year follow-up,
youths were less likely to have drinkers (or people who had been drunk) among their five best friends.

In the other two studies (IT/Media 2 & 4), Schinke et al developed a CD-ROM that focused specifically on gender. These studies are smaller but are of value in that the programme was specifically tailored towards girls to enable them to manage stress and develop ‘resistance’ skills against substance use. In IT Media 2, the CD-ROM looked at four particular areas relating to understanding and dealing with stress, drugs and stress, and stress-reducing techniques. Again the programme was effective, albeit in a modest way, in that the intervention group were significantly less likely to see alcohol as a good means of dealing with stress, and they were more likely to have a wide-range of stress-addressing mechanisms.

In the second study (IT/Media 4), there was a further gender focus as the programme included mothers. The home-based interventive software sought to develop a nurturing mother/daughter relationship and hone skills for managing conflict, resisting media influence, refusing alcohol and drugs, and correcting peer norms with substance abuse. Parallels to the Strengthening Families Programme can be drawn here. Positive effects were found in the intervention group and in particular girls reported less alcohol consumption. With this study however there is no information as to the size of the effects. Nonetheless the CD-ROMs were evaluated very positively by the participants and the study shows the potential for structured interventions amongst the family within the comfort of the home. These findings do bring to the fore the potential for multi-media, computer-based, gender specific interventions.

**Social Marketing Elements**

Schinke et al’s work is of particular note as it not only has the gender focus, but has a strong social marketing connection. The use of a media-platform such as CD-ROM for home PCs allows significant tailoring at a social marketing level to change substance use behaviour or intentions, especially when segmented not simply for age but also for gender. Audience research was conducted in order to make the product delivery as effective and attractive as possible, for example appropriate music, graphics and language were used. In general there would appear to be significant advantages to this approach. Notwithstanding the technological appeal to young people, the cost, controllability (no concerns over poor transmission of messages by teachers) and strong social marketing design, combined with effective findings would ear-mark this approach as one with strong potential (Smit et al 2008).

### 3.8 Hospital-Based Interventions

The two studies featured here look specifically at the potential for delivering brief interventions to a segmented, high risk cohort of young people, whose excessive drinking leads to medical emergencies. The purpose is to reduce alcohol-related consequences (eg harm to self and others) and consumption among adolescents. While they were conducted in America, there is increasing interest in this type of intervention in the UK, given the growing concern about the effects of binge drinking and the consequent impact on long term health, as well as the costs for emergency services.
Both studies used a brief motivational interview delivered by a nurse alongside usual treatment, in an oral and maxillofacial surgery out-patient clinic (Smith et al 2003: Hospital 1), and in an emergency department (Spirito et al 2004: Hospital 2). There were some interesting differences between the two studies. Results from the clinic intervention group (Hospital 1) showed a significant decrease in total alcohol consumption across the year, and a reduction in alcohol-related problems. Importantly, there were lower numbers of binge drinkers in the motivational intervention group. In the emergency department setting (Hospital 2), both the intervention arm and the control (which received standard treatment) resulted in reduced quantity of drinking during the 12-month follow-up. In the intervention group however alcohol-related negative consequences were relatively low and stayed low at follow-up. In addition, the more problematic the drinking as screened at baseline, the greater the improvement in alcohol reduction.

The studies suggest that brief interventions are recommended for adolescents who have experienced a harmful alcohol-related event and have pre-existing problems with alcohol use. Their success may lie with the nature of the traumatic experience itself, which may have engendered a sense of ‘readiness to learn’. This refers to a critical junction in the life of a person where education has the greatest impact and is more likely to have long-lasting effects (Waldman et al 1999). This may explain the findings for the second study, where any intervention had some effect.

The ultimate sustainability of these particular effects with maintaining sensible alcohol intakes however has yet to be tested beyond a year. In addition there are some short-comings of the studies. There was an inevitable reliance on self-reported outcomes via a standardised questionnaire, although measures of blood alcohol content were taken in the second study, and this study was also inhibited by high refusal and attrition rates, perhaps due to the blood sampling. In addition, the samples in both were relatively small. Despite this, Boekeloo & Griffin (2007) imply that these weaknesses would not seem to have threatened the reliability of the findings to any great extent, and the approach warrants further research.

**Social Marketing Elements**
The there were limited social marketing strategies employed in these studies.
4 Discussion

When considering the findings of this review as a whole, it must be stated that the data presented are interesting and intriguing, but puzzling and at times contradictory, which make for a fulsome discussion but fail to provide the much needed direction in this area.

There are various explanations for this. Above all, there would appear to be a real paucity of studies with compelling findings; many trials seem to present 'significant' findings but the actual effect size is often not big enough to engender confidence. In addition, due to the considerable contextual variations in where and how the studies are implemented, there are quite a number of mixed messages evident. For example, while a strong recurrent theme running through the review would be the suggestion that involving parents is important, there are other studies (IT/Media 1) where there was no significant benefit from involving parents. Also, where many studies emphasise the importance of boosters to augment and sustain effects, other findings (Community 4) did not note any significant utility. Coupled with this, there are studies that indicate that replicability of trials in the real world is near impossible (School 12); and that the strive to maintain intervention fidelity is actually at the cost of effectiveness (School and Community 4). Indeed, School 13 demonstrated that the greater the fidelity of the studies, the greater the levels of alcohol intake. So in an effort to find a solution to the problem of teenage drinking, studies and hence findings have become context dependent due to the need to test many different approaches. As a result, contradictions become evident when comparisons are made.

Embedded within these confusions are doubts surrounding statistical rigour and an important critique stems from Gorman (Gorman 2002; Gorman et al 2007). As outlined in School and Family (3.3.3), Gorman is particularly critical of and refutes the statistical evidence provided in support of effectiveness of SFP and LST programmes. Critiques such as Gorman’s could be levelled at a number of quantitative analyses and the points made are no doubt relevant and should be considered when comparing findings. However, the crucial part of his reviews are not so much to ascertain which findings are significant and which are not, as if these were the ‘golden keys’ to reducing teenage drinking, but rather to compare similar analyses and ascertain why some are more effective than others. It is this latter issue that is so testing to ascertain however, given the potential for contradictions.

Raistrick et al (2006) state that a further difficulty in evaluating evidence is the tendency of journals not to publish negative findings, which may give important insights into the limitations of a particular approach. For example, some studies in our review did not make attrition rates transparent. Yet another difficulty is that there may be a formidable new treatment that has not been evaluated and cannot, therefore, appear in a review. Also no matter how good a clinical trial might be, there are inevitably differences between the real world and the trial as we have found. These differences are minimised in some methodologies, for example in a pragmatic trial design. Research typically answers one question; it may be a big question, but findings still need to be interpreted into clinical practice, in order to suit the variety of circumstances in which treatment takes place and the range of service users looking for help.
Another issue that must be taken into consideration when reviewing effective interventions is age. Teenagers are a very large variable cohort and it would be naïve to assume one end of the spectrum will react in the same way as the other. In particular some of the findings might be read as suggesting that younger adolescents are ‘malleable’ (eg Community 7), which infers that older ones are not. However the University freshers have been included to show that very short interventions can be effective, even into the longer term.

Leading on from this, many of these contradictions probably have their roots in the unpredictability of the target group and the inherent difficulties with dealing with the turbulence that is adolescence. It remains a stark fact that interventions to prevent alcohol misuse are being implemented at a time when alcohol experimentation is becoming desirable among young people. Given this backdrop, it is unsurprising that effectiveness is difficult to establish, that sometimes attrition rates are high and that the body of evidence for or against certain approaches remains indefinite. Superimposed on this is the very high reliance on self-report and accurate memory recall, although commentators state that the large numbers involved and randomised approach could negate some of these validity and reliability concerns (Foxcroft 2006).

In the absence of any cut and dried conclusions there are nonetheless a number of spectra which would seem to be salient. Multi-factoral interventions were often very effective such as the Trelleborg project (Community 8) and the Icelandic model (Community 9), which has had large effects on large swathes of the population over a period of time. Still, with these approaches, there were outcomes that could be attributed to variables outside of the experimental conditions. Also, brief motivational interviews would appear to be a promising way forward, as positive results were found in a range of settings. Certainly in terms of value for money, the type of short-term intervention used in the three University studies would seem to pay-off, especially in one case where this intervention was targeted at high risk drinkers (University 2). This study in particular showed the ability of interventions even at this stage (18-19 years) to move trajectories away from adult alcoholism. A review of the effectiveness of treatment for alcohol problems in the population at large (Raistrick et al 2006) concluded that in general, evidence for this kind of approach is strong but only effective if carried out in accordance with good practice and by a competent practitioner. The authors state that assumptions drawn from the evidence are predicated on the availability of trained practitioners.

Alongside this and despite Gorman’s critique, a number of studies based on similar approaches to SFP and life skills training would seem to suggest that parental attitudes, skills and support are a key concern, and this was evident in all of the themes. How these parents are engaged is another vital issue, and some of the process evaluations gave some useful insights, particularly the UK transfer studies of Spoth et al’s SFP (School and Family 4, 5, 7 & 8). These studies highlight in particular how to bring in parents and not alienate them, as well as overcoming some major cultural factors when importing a Mid-West USA programme into an area such as Barnsley.
With reference now to the social marketing approaches, none of the studies appeared to explicitly indicate the use of these methods, although social marketing principles were apparent in some form, especially in the community-based interventions. There also did not seem to be any clear connection between social marketing methods and intervention effectiveness. However Slater et al’s study (2006: School and Community 3) seemed to make a strong contribution to this end, using consumer involvement and promotional activities to guide a strategy for the in-school media campaign, with positive outcomes. With respect to the more cultural studies, it was advantageous to present interventions in a way which was relevant to the group. Some studies did this by gender (IT/Media 3 & 4) and two studies in particular were effective at targeting their project to ethnic cleavages (Community 2 & 4). Involving people in the development of interventions and throughout the life of the project (Community 9) helped to support its promotion and ‘buy-in’, as well increasing the consumer relevance. It is evident however that projects would benefit from fully embracing social marketing principles, especially those connected to addressing competition (looking at project aspects that may keep young people away) and exchange (that young people get some explicit benefits from being engaged).

It would seem that social marketing principles do have a place in the design of interventions to tackle alcohol misuse, and it is indeed desirable that comprehensive prevention projects should include elements that have universal applicability to young people such as pricing, marketing and availability (Stockwell et al 2004).

4.1 Strengths and Weaknesses of the Review

As with all literature reviews, there can never be complete assurance that all available published information on the subject has been included. However the search strategy capitalised on the current extensive range of internet-based search engines and on-line publications, supplemented by more traditional hand searching of relevant journals. All available sources were cross-checked with each other and the inclusion of review articles proved to be additionally valuable in this respect. A weakness could be the reliance on secondary sources such as the Cochrane review; however it was judged to be a sound resource as seldom was any evidence presented here refuted and on the contrary, was the most cited review.

The judgement of the articles for inclusion was taxing on occasion, as commentators were sometimes divided on their opinions as to the worthiness of the article. Again, having clear inclusion criteria assisted the decision-making, and including a range of study methodology outside of the RCT format was particularly valuable in drawing out some important process variables. Assessing each selected article was also challenging for the same reasons; as is often the way with academic debate, statistical outcomes were supported by some reviewers and not by others, and elements of subjectivity in the review process will inevitably creep in. However, all perspectives are summarised in the inventory where possible; although this makes for a crowded matrix, inventories provided by other reviews were so abbreviated as to be unintelligible, and this author wanted to ensure clarity of reporting.
To conclude therefore, it is clear that there is a great deal of scientific uncertainty surrounding what constitutes effectiveness in alcohol misuse prevention among young people. As a result of this, the evidence is currently failing to provide definitive markers for practitioners and there are a number of convoluted and interwoven explanations for this that are wrapped up in adolescent development, demography, psychology sociology and methodology. On a practical note, Velleman et al (2005) state that in the same way that there is no one reason why a person starts to use or misuse alcohol and other substances, so there is no one method to prevention or intervention which will work with everyone.

An important consideration for practitioners in the Kent area is the transferability and applicability of results for their local areas. It must be remembered that most of the projects were based in the USA, and studies reporting cultural transfer of programmes to the UK have been useful in highlighting issues that need to be taken into consideration. Therefore recommending practice guidelines from this review, in the absence of evidence to ascertain good transferability, will mean that guidelines will need to be couched as broad principles for practice.

These impediments should not however be a barrier to action, and Foxcroft (2006) reviews an idea termed the ‘precautionary principle’ in relation to alcohol misuse prevention, that lends weight to the continuation of interventions in the absence of clear guidance. This concept was originally developed in 1992 as a global policy directive to cover environmental hazards relating to preventing irreversible ecological damage when scientific uncertainty prevailed; simply put, it is better to act than to do nothing. It has since been extended to other areas of public safety such as mobile phone use, and also where there is overlap between the prevention of harm and the promotion of health. Hence in this reconfigured meaning, the precautionary principle is used to support and justify an activity where there is scientific uncertainty of potential benefit, such as in health promotion.

Foxcroft states that it is possible to apply this to alcohol and drug prevention policy and practice, and intimates that policy makers and practitioners have probably been applying an implicit form of this principle for many years. In alcohol prevention activity as we know, there is provisional or equivocal evidence about the effectiveness of prevention programmes, and the potential for harm if a programme is not implemented is considered to be high. Thus policy makers and practitioners arguably have a rationale for invoking the precautionary principle until such a time as further evidence becomes available. This principle should not however be used so that just any preventive action can be justified. To avoid misuse, such as applying it to actions where there is no or poor evidence and possibly doing harm, Foxcroft puts forward four qualifying criteria:

- The costs and harms associated with a lack of effective action are considered to be high;
- There is some provisional high quality evidence of effectiveness for a specific preventive action, with no indication that the preventive action is in itself harmful but further research is needed to provide convincing evidence either for or against this action;
• Cost-effectiveness studies or models point to the potential of the preventive action to reduce costs and harms;
• Further high quality studies are fully resourced and planned, or on-going to establish convincing evidence for or against the specific action so that the costs associated with an ineffective action can be minimised.

These qualifying criteria have yet to be fully embraced by the alcohol prevention fraternity; however they do provide some guidance in the absence of any other.
6 Recommendations for Practice and Service Improvement: Elements for practice

The following elements for practice have been extracted from the reviewed studies, and provide some broad indicators for project development associated with reducing alcohol consumption and misuse. There are six sections that display the practice elements according to the most prominent and supported evidence from the review. These sections are general points; the school environment; involving the family; the community setting; brief motivational interventions; and social marketing approach.

6.1 Elements for Practice: General Points

- Effective alcohol prevention programmes must be well organised and co-ordinated with a central project manager.

- Programmes must be constructed and costed in a realistic and achievable way within the allocated resources. It is reasonable to seek funding from multiple agencies as interventions can result in multiple outcomes, not just in health.

- The goals of the programme must be acceptable and relevant to young people, and delivered by competent and knowledgeable facilitators. Appropriate training should be provided if necessary.

- Ideally young people and other stakeholders (such as parents, teachers, and community representatives) should be consulted about the content of the programme to ensure relevance and the programme should be piloted before rolling out. This is particularly important if using material developed in another country. Technological approaches have an engagement advantage and appeal. The interpersonal ‘behind the scenes’ engagement work is vital to ensure success and sustainability.

- Comprehensive prevention policies must include elements that have universal applicability to young people such as pricing and availability.

6.2 Elements for Practice: the School Environment

- The programme content must be clear and oriented towards life skills building with psychosocial components. Information giving in the classroom should be creative, using interactive techniques, discussion, role play and videos. Life skills training should contain aspects such as
  - developing cognitive behavioural abilities to raise self-esteem;
  - resistance to pressure and assertiveness;
  - anxiety management and communication skills.

- Age and gender should be considered when planning programmes. Older teenagers are able to process more complicated tasks such as weighing up the pros and cons of unhealthy behaviour and can learn more sophisticated approaches for resisting alcohol. Younger teenagers will however need to be taught simpler more concrete strategies. Separating genders may be
important in life skills training for self-esteem building, assertiveness skills, sexuality and health education.

- Booster sessions should be provided at relevant periods in young people’s development and specifically tailored to their changing needs. Information should also be of immediate practical use to young people.

- Interactive CD-ROM prevention programmes seem to be effective. The programme should cover aspects such as goal setting, coping, peer pressure, refusal skills, self-efficacy and effective communication. Skills of problem-solving and alcohol avoidance are best developed when material is age appropriate and related to gender and ethnic-racial differences.

- Content should also include harm minimisation strategies – drinking safely - in recognition that teenagers will not respond to abstinence programmes and will at some stage experiment with alcohol.

- Interventions should not be too time-consuming or elaborate, as this will disengage teachers as well as students.

### 6.3 Elements for Practice: Involving the Family

- The Strengthening Families Programme (SFP) is a promising way forward:
  - the duration of the programme needs to be over a number of weeks (ideally half-day weekly sessions for 14 weeks) and use a combination of parent and young person only classes with some mixed;
  - it needs to be designed to develop specific protective or ‘resilience’ factors and to reduce risky behaviours by improving aspects such as communication styles, school involvement, and a more nurturing parenting manner;
  - personal and family goals for the future must be developed, alongside ways to improve family relationships, manage stress and develop skills for dealing with peer pressure;
  - translation of the US based programme to the UK setting is required to ensure acceptability and engagement.

- Family interventions that are underpinned by family psychology and the development of resistance skills are more likely to succeed:
  - interventions that help co-ordinate parents, teachers and young people in supporting and praising positive behaviour as opposed to threat of negative sanctions are of use, especially with girls;
  - interventions that have a strong focus on parents, helping them to learn consistent communication skills for giving effective anti-alcohol messages and reducing family conflict are also promising;
  - interventions that draw upon social networks and social support systems involving the family either centrally or peripherally will result in a more effective preventive programme;
  - prevention programmes that harness the family in ways that strengthen it (like the SFP) serve to increase the likelihood of preventing or decreasing substance misuse.
6.4 Elements for Practice: the Community Setting

- For community interventions to be effective and sustainable, project organisers must gain the support and involvement of the community at the beginning through the engagement of stakeholders, who must remain as advisors throughout. The mobilisation of community forces will create a more ‘alcohol aware’ community and simultaneously involving young people, parents, schools and other clubs/organisations increases success.

- Stakeholders can include:
  - key policy officials and community members;
  - school and local council representatives;
  - the police;
  - the leisure industry;
  - health and social care professionals;
  - parents/carers and young people.

- Successful interventions include the following characteristics:
  - scoping the extent of the problem and involving stakeholders in developing realistic interventions;
  - having achievable and different levels of action happening simultaneously. For example combining pro-active education in school with law and order responses, media coverage and parental information-giving appeared an effective, holistic approach;
  - frequent reflecting and process evaluation to reveal strengths and weaknesses, and to pre-empt any difficulties;
  - peer-led activity;
  - starting interventions at the critical age is 12-13 years and it is vital not to run interventions too late;
  - community interventions should be a long-term investment, therefore there should be sound financial backing.

6.5 Elements for Practice: Brief Motivational Interventions

- Brief motivational interventions are demonstrating increasing success. They should be directed at hazardous and harmful drinkers who are not typically complaining about or seeking help for an alcohol problem. The following aspects should be taken into consideration:
  - they can be carried out in a variety of setting such as schools, universities, hospitals and other general community settings;
  - they can be delivered by non-specialist personnel such as general medical practitioners and other primary healthcare staff, hospital physicians and nurses, and social workers, but interventions are only effective if carried out in accordance with good practice and by a competent practitioner;
  - the target group can be identified by opportunistic screening or some other identification process, such as Casualty attendance;
  - some studies using brief interventions to families have also been effective in sustaining reduced alcohol use.
• Brief interventions can themselves be subdivided into:
  o **simple brief interventions** (or minimal interventions) - which are structured advice taking no more than a few minutes usually with health promotion literature;
  o **extended brief interventions** – structured therapies taking perhaps 20 to 30 minutes and often involving one or more repeat sessions.

6.6 **Elements for Practice: Social Marketing Approach**
Social marketing approaches can be beneficial and effective in relation to alcohol misuse interventions, and should go beyond simply defining goals that change behaviour. The following provide some examples of noteworthy approaches.

• Having a clear goal is fundamental to programme success, but must be realistic and achievable:
  o ideally it should be developed with the target groups;
  o if interventions involve a number of stakeholders as in community-based ones, all must ‘sign up’ to the same goals such as changing the behaviour of different actors within the community, from vendors to families to other adults who might, for example, supply alcohol to young people.

• Consumer involvement approaches included the following:
  o using local and wider research as a first step to better understand adolescents' attitudes, values and behaviours about substance use, and this should guide programme development;
  o continuously getting feedback from those involved or external stakeholders and developing programmes accordingly; this is important for school-based ‘booster sessions’ and community interventions where there are many intervention layers to co-ordinate.

• Studies that were impressive with targeting their audience used a variety of approaches such as:
  o gradual tailoring of focused interventions through reflection and consumer involvement to ensure the right approach;
  o different mixes of components to appeal to their audience in the way messages were put across:
    ➢ from family interventions: brief nurse-led individual consultations, letters and ‘prevention postcards’ to parents, family sessions with clinicians and family home packs;
    ➢ from school-based interventions: a mix of peer-led classroom sessions with parental involvement, youth or teacher-led activities outside of the classroom, and community adult action teams;
    ➢ from IT/Media: the use of a media-platform such as CD-ROM for home PCs allows tailoring to change substance use behaviour or intentions, especially when segmented not simply for age but also for gender.
• Strategies to promote programmes included the following:
  o knowing about what will attract young people, such as understanding their media preferences and using promotional images like rock-climbing that are appealing to risk-oriented, sensation-seeking youth;
  o understanding that adolescence is about becoming more independent and autonomous and that interventions should take into consideration teenagers’ aspirations;
  o with CD-ROM interventions, using audience research to make the product as effective and attractive as possible, for example appropriate music, graphics and language;
  o injecting a creative novelty value to avoid boredom and distraction, such as getting young people to make films of their peers.

• While issues relating to other aspects of social marketing principles were not explicit within any of the articles reviewed, interventions would benefit from their inclusion. These ‘missing’ issues relate to:
  o addressing competition: this refers to considering ‘risky’ aspects of the project that will stop people from getting involved and becoming engaged. It necessitates that projects offer more attractive options to what alternatives may be, and examples might be coupling alcohol messages with other activities such as sport or creative arts;
  o mutually beneficial exchange: this refers to ensuring that people taking part in the interventions get some benefit out of attending, which will increase a sustained involvement. Examples might be giving something that will be of immediate practical use, or offering new skills as with above.
7 References

*indicates review articles


Substance Use Initiation and Growth Across Adolescence. Prev Sci (web access ref D10.1007/s11121-009-0126-0)


<table>
<thead>
<tr>
<th>School</th>
<th>USA</th>
<th>Author(s)</th>
<th>Intervention/publication name</th>
<th>Year</th>
<th>Social Marketing components</th>
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<th>Outcomes</th>
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<tr>
<td>School 1</td>
<td>USA</td>
<td>Botvin, Baker &amp; Dupont</td>
<td>Life skills training/Long-term follow up results of a randomised drug abuse prevention trial</td>
<td>1985</td>
<td>Cognitive-behavioural skills to raise self-esteem, resistance, assertiveness, anxiety, management and communication skills (LIFE SKILLS TRAINING) given in school. 15 classes at year 8 (age 12-13), 10 booster sessions (yr 9), and 5 booster sessions in yr 10. Teacher trained by video. B. teacher trained with video, C. control group (no intervention). n=556. Behaviour change is sought, but little else in terms of SM.</td>
<td>Three year follow-up. Significant improvement in knowledge and attitudes reported. Self-reported frequency of drunkenness reduced in teacher and video group, measured by drunkenness in last month on 9 point scale. Results = Formal training and feedback 2.31, teacher trained by video 2.19, control 2.32. NP &lt;0.05 between these last two.</td>
<td>Combination of social resistance skills and general life skills - need to be well implemented and include at least 2 years of booster sessions</td>
<td>This was a mainly white, middle-class population sample in the US. Described by Cochrane review as a &quot;thorough study&quot;. Yet while statistically significant difference in outcomes between group b and the control, this is hardly a compelling difference.</td>
<td><a href="http://jama.ama-assn.org/cgi/content/abstract/273/14/106">http://jama.ama-assn.org/cgi/content/abstract/273/14/106</a></td>
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<td>School 2</td>
<td>Australia</td>
<td>Farrington &amp; McBride</td>
<td>The school health and alcohol harm reduction programme/IT WORKS! COMBINING RESEARCH AND EDUCATION TO ACHIEVE CHANGE IN SECONDARY SCHOOL STUDENTS ALCOHOL RELATED BEHAVIOUR.</td>
<td>2000</td>
<td>Quasi-experimental conditions, (no control group) with a comparison group with a more typical alcohol education classes lasting a term. The intervention group began with children aged 13 who were given a 17 session programme which was followed up a year later with another 12 sessions. Specific teacher training over a couple of days was provided alongside teacher manuals, student workbooks and a video designed to trigger discussion. Sample of over 2300 students. The retention rate was 75.9% over 32 months.</td>
<td>Unlike the outcomes data reported in School 9 - McBride) this paper focuses more on process evaluation and reflection - these findings are given in the adjacent box as 'Elements for practice'.</td>
<td>The young people interviewed were quite scathing in their views of the alcohol education they had received, indicating that it was boring, had no relevance as its primary goal and focused on the negative aspects of drinking. It was clear that these young people were unresponsive to an abstinence only message seeing it as inappropriate and hypocritical in a society were alcohol use is prevalent, accepted and encouraged. There was strong consensus that harm minimisation was the education approach most likely to be accepted by young people.</td>
<td>Process evaluation with many useful findings/recommendations which give the size of the study and the relative effectiveness might considered noteworthy.</td>
<td><a href="https://www.aare.edu.au/10april/10FarringtonMcBride.htm">https://www.aare.edu.au/10april/10FarringtonMcBride.htm</a></td>
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<tr>
<td>School 3</td>
<td>USA</td>
<td>Donaldson, Thomas, Graham et al</td>
<td>Verifying Drug Abuse Prevention Program Effects Using Reciprocal Best Friend Reports</td>
<td>2000</td>
<td>Within this trial there were four different groups with different combinations of intervention type. The key element was that of 'normative education' - thinking about the consequences of action etc. This was combined with either information and or resistance skills training re: peer pressure. Hence there was a clear attempt to change behaviour (1), apparently based on previous research into interventions (2) though no other SM characteristics were apparent (3-6).</td>
<td>Data comparing self-reported drinking levels with 'best friend reports' suggested self-reporting was a fairly accurate measure with previous interventions of similar programmes. Measures were used to take account of life time alcohol use (totality of occasions and lifetime drunkenness) as well as last 30 day measures. While resistance training accentuated alcohol use when compared to the comparison (info only) groups - there was a significant effect of the normative education in public schools (state) in the programme (in comparison to the non-normative ed groups) though this was not the case within the private Catholic Schools. That these figures are taken from follow-ups at 6th, 9th and 10th grade (up to 5 years after initial intervention) is very impressive.</td>
<td>Length of time for which the interventions continued to be significantly different to comparison groups is impressive and suggests an effectiveness of normative education which highlights the potential for this type of programme. Normative education has been shown to be most effective in public school settings where adolescents are likely to overestimate the drug use prevalence and acceptability beliefs of their peers.</td>
<td>Large scale, rigorous study with long-term follow ups giving significant findings. Useful comparison between self-reported measures and best friend reports - though the latter should not be considered as reliable a benchmark as the study suggests.</td>
<td><a href="http://www.cgu.edu.au/include/Verifying%20Drug%20Prevention%20Program%20Effects.pdf">http://www.cgu.edu.au/include/Verifying%20Drug%20Prevention%20Program%20Effects.pdf</a></td>
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Adolescents Training and Learning to Avoid Steroids Programme

School 4

USA

2000

Goddard, Mackinnon, Elliot et al

Interactive classroom and exercise training sessions given by peer educators and facilitated by coaches and strength trainers. Program content included discussion of sports nutrition, exercise alternatives to steroids and sport supplements, and the effects of substance abuse in sports, drug refusal role-playing, and the creation of health promotion massages. 8 - 14 sessions led by coaches and peers. n=3207 over 31 schools. All male.

Outcomes were lower incidence of drink-driving after 1 year. Measured by cumulative incidence of this form of behaviour - ie baseline control = 4.6 and intervention = 5.0, 1 year on control = 12.1 and intervention = 10.7.

A useful model of social marketing via sport - and tailoring based on a specific gender/age/culture cohort

...with specific (young-male-American Football and...}

Binge Drinking During Early Adolescence: One- and Two-Year Follow-Up of a School-Based Preventive Intervention

School 5

USA

2000

Booth, Griffin, Dusz et al

Clear attempt to change behaviour (1) and the intervention has been developed and modified over a long period of time, towards minority ethnic teenagers (2) to which the intervention is especially targeted (3). While the approach is well-planned and specific, it is very much taught within a scholastic framework with little regard given to Andreason's items 4-6.

Life-skills training which includes cognitive behavioural skills to raise self-esteem, resistance, assertiveness, relationship, anxiety management, and communication skills. Cohorts of multiple minority ethnic groups (n=5233) across NYC experiencing clear socio-economic disadvantage. NB Teachers were given one-day training workshop. Intervention group (16 schools) vs control group (13 schools) who received normal NYC curriculum on drugs and alcohol. Participants were initially 12-13 year old.

1 year follow up measured binge-drinking (more than 5 drinks per occasion) = int. 1.8%, contrl. 4.3%; 2 year follow-up = int. 2.2%, contrl. 5.2%.

Following further studies by the same author this study would seem to underline the effectiveness of psycho-social model interventions in schools and demonstrate their effectiveness in marginalised, multi-ethnic inner-city areas as well as with white, middle-class youth (see School 1). That this intervention was specifically taught within a scholastic framework with little regard given to Andreasen's items 4-6 would seem to be important.

Life skills training/Preventing

Cochrane

http://archpedi.a

USA

http://psycnet.ap

Netherlands

Healthy school and drugs project/The effects of drug abuse prevention at school: the 'Healthy School and Drugs' project.

School 6

2002

Colautti, Jonkers, De Weerdt et al

Behavioural goals evident (1), and developed with audience; 64–73% of Dutch secondary schools included and was gradually developed over the 1980s (2). Notion 3 of segmentation is not met. High level of dissemination has been reached by close cooperation with schools in the development of the intervention, and by building strong relationships with prevention specialists and local authorities (ensures against ‘competition’ of doing nothing - 6).

The 'Healthy School and Drugs' project was disseminated in the 1990s. Being used by 64-73% of Dutch secondary schools and at least 350 000 high school students receive this intervention each year. A quasi-experimental study was used in which students of nine experimental (N = 1156) schools were compared with students of three control schools (N = 774). The groups were compared before the intervention, 1 year later, 2 years later and 3 years later.

Groups - experimental (9 schools, n=1156) and control (3 schools, n=774) were measured at baseline and followed up at 1, 2 and 3 years afterwards. Measures were proportion who drank, proportion who drank weekly, how many drinks per week and how many drinks per occasion. At 3 year follow up the proportion who drank = int. 0.738, contrl. 0.805; proportion of weekly users = int. 0.442, contrl. 0.569; drinks per week = int. 4.06, contrl. 5.27; drinks per occasion = int. 4.79, contrl. 5.82. All these were significant. However the actual differences with the control (no programme) are not compelling.

This study shows the impact that can be made with a coordinated strategy and while this impact is not vast, given the proportion of the country using this approach, a significant number of young people would seem to be affected positively. Moreover the study highlights the importance of the interpersonal, behind the scenes work in local authorities and schools which is essential.

http://pt.who/health

...with 'competition' of doing nothing - 6)....
Little apparent social marketing approaches other than the clear attempt to change behaviour (1) and the development of this approach in previous research (2). The approach seems to use relatively straightforward teaching approaches within typical school settings.

This process evaluation gives insight on the social marketability of Life Skills Training (LST) format. Hence while it has clear goals (1) that have been refined over many studies (2) and is in some senses tailored to the age-level involved (3), the paper discusses issues around working with teachers as they try to adapt and work with the programme to the particular clientele and classroom context (5) as a means of keeping the participants interested (4) and avoiding boredom and distraction (6).

Clear behavioural change sought but information was given as a 'curriculum programme' rather than by any particular means of appealing to, differentiating or capturing the specific social market.

The school health and alcohol harm reduction programme/Harm minimization in school drug education: final results of the School Health and Alcohol Harm Reduction Project (SHAHRP).

The curriculum seeks to change students' beliefs about drug norms and the consequences of using drugs, to help them identify and resist pro-drug pressures from parents, peers, the media, and others; and to build resistance self-efficacy. Project ALERT uses interactive effective teaching methods, such as question- and-answer techniques and small-group activities.

Measures (18 months after intervention) looked at alcohol issues from one included vomiting, fighting, trouble at home, trouble at school, doing something later regretted; second, binge drinking, weekly drinking and polydrug use; third, overall misuse (sum of all 8 variables). However the regular users at baseline had significant differences in measures of overall misuse, alcohol related consequences and high-risk use. Change in high risk use in particular was significant to a 99% confidence interval. The effects of the intervention were not significant on any of the measures for the non-users and experimenters.

It must be noted that while this school-based, curriculum focused intervention was significant among those most at risk, it nonetheless achieved relatively small changes in behaviour across the board. It would seem that mere knowledge impartation in a relatively formal classroom setting is insufficient.

As is the norm with process evaluations, the results are nuanced and unclear; an important result includes the importance of effective working relationships and clear communication between those overseeing the programme and the teachers charged with implementing it. This involved emphasizing the link between program fidelity and program success.

As referred to in the outcomes, relationships and clear communication with teachers of those charged with presenting/teaching the programmes on the ground is essential. At a SM level there is also an apparent tension between sticking rigidly to what works at a scientific level (fidelity) and being contextually relevant from a SM angle.

Relatively small effects in changes and Foxcroft suggests that it would seem that even the significant effects are found via post-hoc tests and therefore should be approached with caution - it could be a chance finding of significance.

Quasi-experimental conditions (no control group) but comparison group with more 'typical' alcohol education classes. Intervention group at 13 yrs given a 17 session (spread over 8-10 lessons) programme, followed up a year later with 12 more sessions. Specific teacher training over 2 days provided with manuals, student workbooks and a video to trigger classroom discussion. The sample involved over 2300 students. The retention rate was 75.9% over 32 months.

Intervention (SHAHRP) followed up over a 32-month period from baseline, with earlier follow-ups at 8 and 20 months. Assessments about alcohol measured: knowledge, attitudes, consumption, risky patterns, context of use, harms/risks from self and others. Results: clear difference in consumption of alcohol - converged during follow-ups after the scheme finished; ie first measurement showed a 31.4% difference in consumption between the intervention and comparison group; second phase the intervention group drank 31.7% less. 32 month follow up - after completion - difference had dropped to 9.2%. This final follow up not reaching significance with the non-parametric tests. In terms of risky consumption the intervention group were only 4.2% less likely to drink to 'risky' levels. Most compellingly intervention students reported 22.9% less harm associated with their own use of alcohol than the comparison group.

Detailed contents of course unclear, but intervention had some degree of effect, partly in lowering levels of drinking in the short term but questionable in the long-term. Message would be to try to provide expertise so that heavy drinking will be done 'safely'.

In the Cochrane Report, Foxcroft notes the post-hoc tests which were applied in the 2000 paper (increasing likelihood of accidental levels of significance) are less apparent in the 2004 paper and the findings seem quite compelling. Aspects of non- significance are noted. Findings are impressive as the intervention is not drawn against a control group but one which had 'normal' levels of alcohol awareness classes. However the sample could have been skewed by the attrition rate.
The adoption of a multilevel, whole school approach to health and mental health promotion in schools requires a stronger interface between health and education at all levels. It is also therefore, appropriate to have multi-sectoral support and importantly, funding for such initiatives as they affect multiple outcomes. A more effective focus for health and mental health promotion is on people, processes, and support structures rather than health education packages. Furthermore, this approach leads to a broader conceptualisation of student welfare from individual service focus, to a focus on organisational health.

Differences between intervention groups were evaluated with a series of MANCOVA tests. Project SPORT participants demonstrated significant positive effects at 3-months post-intervention for alcohol consumption, alcohol initiation behaviors, alcohol use risk and protective factors, drug use behaviors, and exercise habits, and at 12-months for alcohol use risk and protective factors (‘p’ < 0.05).

The key findings of the study and the point of the paper is to note the difference between efficacy trials (to see whether the intervention does more harm than good) and effectiveness trials which test whether the interventions have any sizeable impact in ‘real world conditions’. Positive efficacy trial findings were not replicated in the effectiveness trial. All main effects were either null or worse for the experimental than for the control group.

No significant impact on longer term though notions of considering social impact and environment seem well theorised and founded. Though importantly, attempted change in the social environment failed to bring about significant change in these measures.
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<th>Country</th>
<th>Title</th>
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<td>2007</td>
<td>USA</td>
<td>School 13</td>
<td>Sanchez, Weiser, Nettel et al</td>
<td>Fidelity of implementation in a treatment effectiveness trial of Reconnecting Youth</td>
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<td>2008</td>
<td>UK</td>
<td>School 14</td>
<td>Coleman &amp; Rumm</td>
<td>Digital stories/Researching the potential of Digital Storytelling as a brief alcohol intervention for young people delivered in non-medical settings</td>
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<td>2009</td>
<td>UK</td>
<td>School 15</td>
<td>Control, Castellano-Mickle</td>
<td>Personality targeted interventions/Personality targeted interventions delay the growth of adolescent drinking and binge drinking</td>
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**Intervention is highly similar to School 12 except that the RY syllabus was taught over 41 classes rather than 55. The program consists of 1-semester class, to improve academic achievement, reduce or prevent drug use and improve mood management (depression, anger and anxiety). School A situated in a large city in southwestern USA; B in a large metropolis on the Pacific coast. Site B completed in spring 2003 and Site A in autumn 2004. Data collected over 3 semesters from 41 RY classes in nine high schools across the two sites. Outcome data are from 369 students who enrolled in the semester-long class and who attended >1 day.**

**Intervention consist of two components delivered within one 45 minute session. One of these is watching four digital stories which have been made by young people about their day to day experiences. The other segment is 20-25 minutes in small group discussions. Baseline cohort n=423 - the third questionnaire (completed 6 months post-int.) n=283. NB high attrition rate.**

**The key novelty and interest with this intervention is in its segmented targeting of the population by which young people are screened for personality type which might indicate disposition towards binge-drinking and tailors specialist interventions towards this (3). This is based on research about prior attempts (2) and has clear behavioural oriented goals (1). As to the attractiveness, positioning and competition (4,5,6) this is less clear.**

**RCT was carried out with 368 adolescents recruited from years 9 and 10 (median age 14) with personality risk factors for substance misuse. Participants received either a personality-targeted brief intervention or no intervention. Outcome data were collected on alcohol use through self-reports at 6 and 12-month post intervention and analyses were conducted on the full intent to treat sample. Multi-group analysis of a latent growth curve model showed a group difference in the growth of alcohol use between baseline and 6-months follow-up, with the control group showing a greater increase in drinking than the intervention group. Interventions were effective in preventing the growth of binge drinking in those students with a sensation seeking (SS) personality. SS drinkers in the intervention group were 45% and 50% less likely to binge drink at 6 and 12 months respectively, than SS drinkers in the control group, p = .001, phi = .49. While there may be some points of discussion regarding the ethics of this type of approach and targeting certain types of people, it nonetheless seems to be an effective and efficient method. It demonstrates the importance of a focused approach to prevention.**

**Only one study and perhaps should be seen as anomalous. However it does raise concerns over how the inter-personal aspects of teaching can be overlooked by a disembodied, policy-focused approach to meeting objectives. This would seem to be a rigorous RCT and the surprising linkages around alcohol and fidelity were not always significant, or with marginal effect.**

**It is unclear quite how these findings should be interpreted. However, the more systematic the approach - the more aspects like value-based notions, knowledge assimilation and teaching the requisite classes - and values of young people are missed out. An important findings was that the ideal RY teacher with excellent classroom teaching skills and experience working with high-risk students, were the least likely to be released from regular teaching to do the project work.**
<table>
<thead>
<tr>
<th>School and Community 1</th>
<th>USA</th>
<th>Project Northland: long-term outcomes of community action to reduce adolescent alcohol use</th>
<th>2012</th>
<th>Perry, Williams, Komro et al</th>
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<tr>
<td>Measures were multifarious and similar to below: Phase 1 (1991–1994), when the targeted cohort was aged (11-14), included school curricula, parent involvement, peer leadership and community task forces. The Interim Phase (ages 14-16) involved minimal intervention. Phase 2 (1996–1998), when the cohort was aged 16-18, included a classroom curriculum, parent education, print media, youth development and community organizing. N= 2351 at baseline. Control group and intervention.</td>
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<td>Outcomes are significant in some cases but this depends on growth curve analysis (ie changes over time) rather than absolute differences. Even then these changes are not vastly impressive, so no conclusive elements for practice.</td>
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<td>While DARE is a formal social awareness and life skills education about resisting the subtle effects of alcohol and other drugs, DARE plus is much more novel and social marketing relevant. Apart from the clear aim (1), the approach has been refined (2), and uses a mix of peer-led parental involvement classroom program called &quot;On the VERGE,&quot; youth-led activities, community adult action teams, and postcard mailings to parents (5). A clear segmentation of audience (3) (between parent and child - and in curriculum as child advances through school) as well as an attempt to make the mode attractive (4).</td>
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<td>RCT design with schools separated between control, DARE curriculum and DARE plus further activities (see social marketing box for info). NB Intervention begins at 11-12 age and follows them throughout secondary school for approx 6 years (with the odd year without classes). N=6237 at baseline.</td>
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<td>Key component of results was 'growth curve' analysis which takes time-series data and compares changes over time. Of relevance was that the various findings at the 18 month follow up were significant for boys but not for girls. These measures were: past year alcohol use, past month alcohol use (significant difference in growth rate for boys at 99% confidence interval) and ever been drunk (not significant). Where results were significant this was in the case of DARE plus, not DARE.</td>
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<td>The effects and scale of this study are impressive in some senses although the changes in behaviour, whilst statistically significant, are not substantial. Key finding is that DARE on its own is not significant but DARE with further components is. However good elements include community strategies of involvement, user-led approach and SM components.</td>
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<td>4 waves of data collected at follow ups over two years and analysed for growth rates and levels of use. Combined effect on the odds ratio (OR - likelihood of alcohol use) of combined community coalition intervention and in-school media (compared with control) was 0.398 significant above the 99% confidence interval. This would seem compelling. The RCT was combined with process evaluation and while the study mentions that factors affecting ability to run media in communities and schools was variable there is very little information on this.</td>
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<tr>
<th>School and Community 2</th>
<th>USA</th>
<th>A Randomized Controlled Trial of the Middle and Junior High School D.A.R.E. and D.A.R.E. Plus Programs</th>
<th>2013</th>
<th>Perry, Williams, Komro et al</th>
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<tr>
<td>SM principles used to guide the development of the media for behaviour change (1). Research used to better understand adolescents' attitudes, values and behaviours about substance use, and this guided the strategy for the in-school media campaign (2). 'Be Under Your Own Influence'. Knowledge of promotional issues (ie media preferences) gained through interviews (4/5). Materials included posters, book covers, T-shirts etc. Resulted in low cost and increased benefit of the non-use choice by adolescents (6). Used images like rock-climbing that were appealing to risk-oriented, sensation-seeking youth (3).</td>
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<td>N=4216 11-13 year olds (at baseline) across 16 communities. If media treatment control communities throughout US randomly assigned. Within both media treatment and media control communities, one school received a research-based prevention curriculum (one did not), so crossed, split-plot design. Central premise: adolescence is about attaining greater independence and autonomy. Principal benefit of substance use likely to be noncompliance and independence. Campaign sought to emphasize the inconsistency of drug, alcohol and tobacco use with aspirations. Mixed method evaluation.</td>
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<th>USA</th>
<th>Combining in-school and community-based media efforts: reducing marijuana and alcohol uptake among younger adolescents</th>
<th>2016</th>
<th>Satter, Koff, Edwards et al</th>
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<td>N=6237 at baseline. Within both media treatment and media control communities, one school received a research-based prevention curriculum (one did not), so crossed, split-plot design. Central premise: adolescence is about attaining greater independence and autonomy. Principal benefit of substance use likely to be noncompliance and independence. Campaign sought to emphasize the inconsistency of drug, alcohol and tobacco use with aspirations. Mixed method evaluation.</td>
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There is a lot of reliability and fidelity information. It suggests that high fidelity may detract from effectiveness. But it is recommended that future drug education curricula need to build in more flexibility for discussion without compromising core evidence-based elements. Even with substantial training and support, individual variations in delivery were found, although few differences were found between teachers with prior expertise and teachers new to drug education. The methods and measures applied in the Blueprint study all represent attempts to improve on previous measures in terms of both reliability and sensitivity.

Important observations about issues around the fidelity of interventions when rolled out on a large scale - though other studies suggest that this concern with fidelity may come at the expense of effectiveness.

The project sought to change behaviour (1) and took a multi-component approach (School and Community 2) using schools, parents, media, health policy and the local community. This multi-factorial approach does not seem to have been segmented as such - being "universal" (3), but appears to be attractive (4), considerate of place, promotion etc (5).

Class based teaching used three modes of delivery: pupil-pupil interactions; teacher-class interactions; and teacher-led sessions; these were joined with substantial teacher training, parental workshops, mass media publicity, stakeholder communications. The project also sought to engage the wider community in terms of 'readiness' - though this is not discussed in any detail.

This particular assessment of Blueprint is a process evaluation - in particular it focuses on the quality of implementation and how different dimensions of fidelity could conflict with one another: under pressure of time, generic elements and processes designed to reflect on learning were sometimes sacrificed in order that core drug education activities could be completed.

The combination of one-to-one consultation combined with direct information to parents/guardians and then family lessons would seem to be effective in suburban and rural areas though would appear to be counterproductive in urban settings.

Clear differences between 3 settings. Measures included a discussion of intention to use alcohol as well as measures of regular and heavy use of alcohol within the last 30 days. In urban area intervention group, alcohol was consumed by 13.8% compared with 7.4% contr; suburban = int. 5.9% contr. 15.6%; rural = int. 0%, contr. 9.4%. 30 day heavy use results: Urban = int. 6.9%, contr. 0%; suburban = int. 0%, contr. 9.4%; rural = int. 0%, contr. 10%.

Followed outcome measures from parents and children at a number of points - from pretest and posttest through to 1, 2 and 3.5 year follow ups. While the comparisons between levels of drinking between intervention and control groups was not significant, the trajectory of growth over-time (from early towards mid-teens) was significant to a 95% confidence interval. Appeared to significantly reduce the growth of alcohol use and improved parent norms regarding adolescent alcohol use over time.

While the trajectory argument is compelling, the study still fails to achieve significant differences in consumption between the experimental and control groups - hence would not appear to be very impressive, at least in the short term.

Not clear and article not able to be accessed - though one would assume that the approach was similar to Werch 2003 (see below)

Brief nurse consultation at 11-12 years - follow up consultation later. Physician endorsed parent/guardian letter. Up to 9 physician endorsed family based prevention lessons. N=211 in three schools, urban, suburban and rural. Controlled trial with the control group receiving an information leaflet.

Cochrane - N8 information in systematic review.

This counter-productivity in urban areas is confusing and Foxcroft notes, in his Cochrane review, how there is potential for contamination of information across the experimental and control groups as both were in the same schools. More baseline differences existed in drinking behaviour which is not ideal and may skew the results.
Clear motivation towards behavioural change (1) and specific targeting and tailoring of the way message is presented as refined over a number of studies (2) (3). The means of marketing (via classes, one-to-one consultation with nurses, postcards to parents and take home classes to be done as a family) was original and considered the setting, product and means of promoting awareness. No explicit mention of competition (6) though one might assume this is implied by the clear need to gain child and parental attention.

Brief nurse consultation at 11-12 years re: alcohol use follow up consultation a year later. 10 prevention parent/guardian postcards. Following year 4 take home packs for the family. N=650 in 2 schools one local school and one magnet school (where kids are bussed in). 87% of those eligible recruited. 2 year follow up. Control = alcohol information booklet. Information concentrates on social skills and emotion/affection.

Key measures include 30 day use and heavy use: neighbourhood school 30 day use = int. 2.1%; contr. 5%; 30 day heavy use = int. 1%, contr. 2%. 'Magnet' school 30 day use = int. 9.6%, contr. 14.9%; 30 day heavy use = int. 3.8%, control. 9.3%. NB only heavy use results are statistically significant (to 95% confidence interval).

In contrast to School and Family 2, this study includes follow up social marketing after a year and uses postcards rather than letters. The elements of SM would appear to be useful to practice and potential success.

Whether this follow and postcard pattern explains the success of interventions in urban areas (in contrast to Welch et al 2000a) or whether the data (much of which is not significant) is mere happenstance is a moot point.

Thirty-six rural schools were randomly assigned to one of 3 conditions: a) the classroom-based Life Skills Training (LST) and the Strengthening Families Programme for parents and children 10-14; b) LST only; c) a control condition. N=1664 where LST and SFP=549; LST only=621; control=494.

This is a different manifestation of Schools and Families 4 to test different programme features. Measures based on self-reporting of lifetime drunkenness and first time (new) users of alcohol. Relative reduction rates for alcohol initiation were 30.0% for the combined intervention and 4.1% for LST only. This suggests the efficacy of family strengthening interventions.

The study adds further weight towards the efficacy of family strengthening programmes - where behaviour might be best understood within the social context of the family as opposed to merely the result of assimilated information.

A question that begs asking is why was there not an arm with purely an SFP intervention as a means of comparing the efficacy of the two - as the conclusions drawn suggest the superiority and importance of family strengthening as opposed to LST with little consideration of the possible complimentarity of two separate approaches. Again the participants are almost entirely white/rural.
<table>
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<tr>
<th>Study</th>
<th>Intervention</th>
<th>Description</th>
<th>Findings</th>
<th>Notes</th>
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<td>Werch, Owen, Carlson et al</td>
<td>STARS for families (Start taking alcohol risks seriously)/One-year follow-up results of the STARS for Families alcohol prevention program</td>
<td>Clear motivation towards behavioural change (1) and a specific targeting of the way this message is presented and refined over a number of studies (2) (3). The means of marketing (via classes, one-to-one consultation with nurses, postcards to parents and take-home classes to be done as a family) was original and considered the setting, product and means of promoting awareness. No explicit mention of competition (6) though one might assume this is implied by the clear need to gain child and parental attention.</td>
<td>Follow up of Werch 2000b (Schools and Families 3) - one year following the end of the programme.</td>
<td>78% completed questionnaire. Key measures again include 30 day use and heavy use: neighbourhood school 30 day use = int. 20%; contr. 13.2%; 30 day heavy use = int. 6%, contr. 9.3%. Magnet school 30 day use = int. 9.3%, contr. 17.4%; 30 day heavy use = int. 4.7%, control. 7%. Though impressive in many instances, most of these results are not statistically significant. The study did find significant and large differences relating to intentions to drink and similar variables - ie these might be considered some way from robust outcomes.</td>
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<tr>
<td>Iowa Strengthening Families Program (ISFP) and Preparing for the Drug Free Years (PDFY) program/Brief Family Intervention Effects on Adolescent Substance Initiation: School-Level Growth Curve Analyses 6 Years Following Baseline</td>
<td>Follow-up study - see Schools and Families 4.</td>
<td>Follow-on from Schools and Families 4. 2 brief interventions with 33 rural schools: PPDFY (based on social learning theory - life skills), 5 weekly sessions and ISFP (based on biopsychosocial models), 7 weekly sessions, plus control group with minimal contact. Focus on parents &amp; children; for parents, discipline skills, child-parent relationship and bonding, managing emotions, effective communication. For children; peer relationships and peer resistance. Family sessions include conflict resolution, communication skills, cohesion. (11-12 year olds children and their families). Initial baseline = 446 families, 293 (2 years), 303 families (4 years).</td>
<td>6 years following baseline the data seem quite compelling, with the difference between the ISFP and control groups in terms of drinking without parental permission (12.4% lower) and drunkenness (13.3%) over the lifetime significantly different. While both programmes slowed growth in initiation of substances over 6 years, the PDFY programme achieved very marginal or negative success with respect to alcohol.</td>
<td>These 6 year from baseline findings add further weight to the assertions of the effectiveness of the strengthening families programme.</td>
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<td>Combined Universal Family and School Preventive Interventions/Randomized Study of Combined Universal Family and School Preventive Interventions: Patterns of Long-Term Effects on Initiation, Regular Use, and Weekly Drunkenness</td>
<td>Follow-up study - see Schools and Families 5</td>
<td>Follow-up on Schools and Families 5. Thirty-six rural schools were randomly assigned to one of 3 conditions: a) the classroom-based Life Skill Training (LST) and the Strengthening Families Programme for parents and children 10-14; b) LST only; c) a control condition. N=1664 where LST and SFP=S49; LST only=621; control=494.</td>
<td>As with other Spoth studies the findings highlight the importance of combining life skills training with strengthening families, as the former on its own does not achieve significance (in comparison to the control) whereas both combined do achieve significant differences in terms of weekly drunkenness at the 2 year follow up (0.34 vs 0.56 - mean score based on scale of 0 and 1). Though importantly the results are not significant for regular drinking.</td>
<td>Once again the same study (as reported above) shows the importance of combining life skills with family strengthening though, even with both, the results (though significant in one area) are not compelling.</td>
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<tr>
<td><strong>UK</strong></td>
<td>School and Research Council (Coombes)</td>
<td>School and Family 9</td>
<td>2006</td>
<td>Alcohol Education and Research Council (Coombes)</td>
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<td><strong>2006</strong></td>
<td>This study replicates the Strengthening Families Programme developed by Spoth et al to test transferability issues in the UK</td>
<td>The running of the SFP (see Schools and Families 7 for intervention details) in a northern city in the UK. Essentially a process evaluation concerned with transferability questions. 50 families attended SFP10-14 programmes in the Barnsley area 2002-2004. 50 parents and 52 young people attended programmes. The median age of the young people was 12 years. 23 facilitators reported having undergone SFP10-14 training in the Barnsley area. Mixed method study using focus groups, interviews and questionnaires. Families who participated found the SFP10-14 useful in preventing young people's alcohol and drug use in terms of: learning more about alcohol and drugs, using knowledge and skills to reduce behaviours that might lead to alcohol and drug use and dealing with peer pressure. Also had a positive influence on the emotional health and well being of the participating families. The SFP 10-14 contributed to changes in the behaviour of the young people during the programme in how they relate to rules, boundaries, dealing with peer pressure etc. and helped to improve family functioning. Also families noted it was important not to be seen as a &quot;problem family&quot; or as a &quot;failure&quot;, the timing and place of programmes was crucial regarding family attendance. The findings of this study suggest that the relative effectiveness of family focused interventions as reported through the work of Spoth and others above may be highly transferable to the UK context. Though with a number of cultural caveats borne in mind - see next study (Allen 2006a)</td>
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<td><strong>2006b</strong></td>
<td>This study replicates the Strengthening Families Programme developed by Spoth et al to test transferability issues in the UK</td>
<td>The same SFP intervention as used in the studies above was applied amongst a small pilot group of 23 parents/care givers and 24 young people from 3 sites. There are no clear or consistent outcomes associated with the data due to small numbers. This was a pilot exploration and authors recommend a larger scaleRCT-type study be carried out. Assert that SFP10-14 (UK) had played a part in improving family functioning including improving parent communication, using a consistent approach, increasing the repertoire for dealing with situations, identifying family strengths, learning to listen more, developing more interaction among the family. Again the findings draw some small question marks over the transferability issues relating to the apparent success of SFP in rural America. Small study - limited findings - but these draw question marks (albeit small ones) around transferability of apparently successful American studies.</td>
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The intervention is referred to as 'Unplugged' and based on the 'social influence approach'. But the intervention is delivered through standard classroom settings although some involve side-activities with either peers or parents. In some senses this is in consideration of place, product, etc (5). However little thought is given to maintaining the audience’s attention (6) or making the intervention attractive (4). Indeed as the high drop out rate among the intervention schools makes clear - notions around audience’s attention (6) or making the intervention attractive (4) - fail to win over the teachers who are integral to its success - especially in such a school based intervention. Hence it is clear that notions of social marketing should be considered as much for teachers (or others running the intervention) as young people.

The only applications worth noting here are the dangers that too elaborate or time-consuming an intervention will fail to win over the teachers who are integral to its success - especially in such a school based intervention. Nonetheless the results seem relatively reliable. Effective, apparently robust study which applies useful measures and considers its own limitations as: self-reported subjective measures of drunkeness etc, that the effects were measured at the individual levels and not at school or class level. Nonetheless the results seem relatively reliable.

Evaluation used measures of parental attitudes against underage drinking and youths' participation in organized activities. Outcomes were youths' drunkenness and delinquency. The implementation successfully influenced parents' attitudes against underage drinking, but not youth participation in organized activities. At post-test, youths in the intervention group reported less drunkenness and delinquency. Effect sizes were 0.35 for drunkenness and 0.38 for delinquency. Findings were similar for boys and girls and for early starters. Effects were not moderated by community type.

Working via parents proved to be an effective way to reduce underage drinking as well as delinquency.

The large drop-out rate is evident. At a more process evaluation level, the study clearly notes the burden on teachers and likely effect this had on the dropout rate/poor participation of schools. This is an important finding in itself.

Follow-up examination of data. See Schools and Families 4 for SM approach.

One must always wonder as to the accuracy of the self-completed data by the young people and the extent to which trust (in confidentiality) and moral obligation (of what they would have liked to be the case) might skew the results. This being said, the way in which the alternative programme clearly had limited or no success measured in the same way suggests a certain validity of the measures. Again the participants are almost
Mixed findings which fail to show a compelling difference in change over time are significant. This 5.5 year follow up takes the significance when comparing basic levels of drunkeness and initiation behavior - mean levels fail to reach a significant difference with changes over time do seem to suggest the efficacy of intervention. While studies referred to above at earlier follow ups seem to suggest that LST + SFP was much more effective than the LST on its own - the growth curve analyses at 5.5 years in (age 17-18) seem to suggest a much less contrasting effect between the two - but both are more effective than the minimal contact control (when measured by change over time).

The findings must be considered within their limitations however it would seem that there was a lower increase in drinking amongst the parental arm of the intervention groups than any of the others. The peer arm seems to be the least effective.

Interesting psychological model relate approximately a 9% reduced risk in initiating alcohol use. Girls were more likely than boys to move towards accelerated patterns of smoking and drug use, though this was not the case for alcohol. However, the LIFT programme operated in a preventive way to reduce the growth rates for girls. Deviant peer pressure was the strongest risk factor for substance use initiation.

While the data based on growth curve analyses (change over time) are significant, the intervention fails to reach significance when comparing basic levels of drunkeness and initiation at 17-18. Although by using the words 'significant findings' the study may be able to suggest 'success' - there is lack of anything which convinces of stark efficacy.
| University 1 | Walters, Bennett & Miller | Reducing Alcohol Use in College Students: A Controlled Trial of Two Brief Interventions | 2000 | Segmented and targeted via a questionnaire though not so much in marketing sense. Though arguably the personalisation is a strong marketing feature in itself in regards to competition - though was not conceptualised as such (6). Thirty-seven 18 year old college students who were moderate to heavy drinkers completed measures of quantity/frequency, drinking consequences, and attitude questionnaires. Participants were randomly assigned to one of three groups: 1) a two-hour information and motivation session plus mailed personal feedback on their drinking; 2) mailed feedback only; or 3) no treatment. Brief intervention model. 363 of the original 433 participants were involved in the 2 and 4 year follow up. While there was little change in drinking frequency amongst the groups there was significant reductions in quantity and negative consequences. The effect sizes of these changes were not great. Individual change analyses suggest that the dependence symptoms of those receiving the brief intervention are more likely to decrease and less likely to increase. At a 6-week follow-up session, the feedback-only group decreased drinks per month as compared to control with a large effect size (0.57). Motivational interview was not effective. The personalised mailed feedback seems to have been more effective with the cohort than a motivational interview. The notion of personalisation might well be very important here. Large effect size though small sample and only 6 week follow up and the study involved first year psychology students. 

University 2 | Bans, Khalian, Burns et al | Brief Intervention for Heavy-Drinking College Students: 4-Year Follow-Up and Natural History | 2001 | Limited evidence of social marketing. Clear attempt to change behaviour (1) and targeted at a particular high risk group (young people who drank heavily at high school) hence it would seem to be targeted in terms of effectiveness and efficiency (3). A single-session, individualised brief preventive intervention was evaluated within an RCT with university firsties aged 18 who reported drinking heavily while in high school. An additional group randomly selected from the entire screening pool provided a normative comparison. Participant self-report was assessed annually for 4 years. 433 sample size, follow-up after 2 and 4 years. Twelve fraternities randomly assigned to receive either a motivational enhancement intervention with individual and house-wide feedback components or a treatment-as-usual control condition (n = 159). Individual feedback was delivered either by peer interviewers or professional research staff. Participants were assessed during their pledge (first) year of house membership and during a follow-up period 1 year later. Of the participants who completed follow-up (N = 120), fraternity members who received the brief intervention reported significant reductions in alcohol use (total average consumption) and typical peak blood alcohol concentrations when compared with fraternity members in the control condition (effective size on drinks per week = 0.37). No differences in drinking-related consequences were observed. Fraternity members who received their individualized feedback from peer interviewers and professional members of the fraternity are from high university students. How transferable this intervention is more widely should be questioned. The findings of these cohorts tell us some important things about the 'exit trajectory' of teenage drinking. Those in the part of the population (42% in the UK) who go on to university will achieve some maturation effects regardless of intervention (ie peak in drinking at beginning of university starts to reduce again over time). However it also points to the potential for breaking negative dependencies amongst those already drinking heavily when they arrive at university. 

University 3 | Larr, Turner, Anderson et al | Evaluating a brief alcohol intervention with fraternities. | 2001 | Limited evidence of social marketing. Clear attempt to change behaviour (1) and targeted at a particular high risk group (college fraternities in the US) hence it would seem to be targeted in terms of effectiveness and efficiency (3). Of the participants who completed follow-up (N = 120), fraternity members who received the brief intervention should be noted - especially given first year at university/college can be a high risk time for late teenagers. However the lack of significant effects on drink-related consequences undermines the social context in which drinking occurs (regardless of individual or small group behaviour) and fraternity members are from high socio-economic status even within university students. How transferable this intervention is more widely should be questioned. Whilst drinking was lowered the negative consequences were not. NB level of analysis was different from that of randomisation. Also difficult to separate house-wide and individual feedback. |
<table>
<thead>
<tr>
<th>Community</th>
<th>Holder</th>
<th>Year</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Community 1</td>
<td>USA</td>
<td>1997</td>
<td>Successful intervention and demonstrates the importance of segmenting audience and ethnic focus. Specific cultural relevance to the UK low but key life skills approach could be transferable to some settings here.</td>
</tr>
<tr>
<td>Community 2</td>
<td>Holder</td>
<td>2000</td>
<td>Behaviour change aimed at vendors and young people. Little evidence of specific targeting and segmenting or other aspects. Intervention has multiple effects across the population as a whole, e.g. heightened awareness among vendors of the illegality of selling alcohol to underage people (via local TV and newspapers) the information also reaches and impacts on a more general audience.</td>
</tr>
<tr>
<td>Community 3</td>
<td>Wagoner, Murray, Gabel et al.</td>
<td>2000</td>
<td>Behavourial change is sought (1), and while little evidence of research into target market (2) the attempt to be culturally relevant (4, 6) is clear. No apparent segmentation or attention paid to the 4 'p's.</td>
</tr>
</tbody>
</table>
Clear behavioural change intended but more focused on sexual relationships than alcohol (1), with alcohol as a means to an end. The intervention has been honed and refined during previous research and is specifically targeted - first at children and then at children with parents (FOK and imPACT). Other characteristics (4-6) are difficult to gauge from the paper - the approach uses video, games and role-play though it is hard to say whether these are creative, novel and appealing or not. No awareness of competition (i.e. distractions) apparent.

FOK is an HIV risk reduction intervention among black teenagers. 8 sessions includes decision making, relationships, information about abstinence & safe sex/dating/alcohol. Format includes games, discussions, videos, imPACT includes 20-minute video (made in and for the targeted communities) emphasizing concepts of parental monitoring and communication, with 2 instructed role-play vignettes. Intervention given in youth's home. Boosters for FOK were conducted after the 6-month follow-up and at 10 months among the youth only. n=165. The addition of the imPACT intervention seemed to reduce drinking when compared with the results from the FOK alone group. Mean difference though statistically significant is small and effect size not clear.

Results significant though insubstantial to convincingly effect change. Variation in baseline consumption of alcohol makes one wonder about the comparabilities of cohorts. NB There was no control group in this study with which to compare.

Very short term trial, hence it is hard to take many conclusive lessons from this - however some apparent benefit of effectiveness of CBT orientated motivational interviewing. Given the spread of age range in this study, and the effectiveness of this types of approach amongst college students it could be hypothesised that these interventions are effective towards the upper levels of our age range. This is speculation as no comparison data is given.

Very short sample size and very short period of testing. Measures are often based on 4 or 5 point scales which are open to interpretation.

Cognitive Behavioural Therapy (CBT)-type motivational interview/Pilot randomized controlled trial of a brief alcohol intervention group for adolescents

Recruitment into the programme was via posters in local youth centres. Apart from this a fairly standard motivational interview set-up with clear aim to reduce alcohol levels (1), approach based on previous cognitive models - not least CBT approaches (2), and the project was aimed at an area of New South Wales with typically low socio-economic status (3). Notions 4, 5, 6 not apparent.

Two groups int. (n=17) and control (n=17) of young people (age 12-19) were assigned - with control having no exposure to any alcohol related interventions and the intervention group comprised of 4 x 30-40 minutes of group motivational and information sessions partly based on a CBT-type model. A trained psychologist "administered" the intervention. Various measures were applied pre- post- and at 1 and 2

The questionnaires on which data are based comprised of 4 tests in 1: alcohol use disorders test; the Readiness to Change Questionnaire; locally devised knowledge questionnaire; and the Drug and Alcohol Problem (DAP) quick screen. The int. group drank more regularly than the control at the pre-test, but at post-test, 1 month and 2 month follow up there were significant changes over time and between groups (95% confidence int). At 2 months the levels of drinking had returned to slightly above the pre-test for the int. group but this was significantly less than the control group. Similar results for binge drinking - hazardous drinking reduced among the int. group over the period of testing, but increased substantially amongst the control.

Very short sample size and very short period of testing. Measures are often based on 4 or 5 point scales which are open to interpretation.
Outcomes looked at overall consumption of alcohol at the two year follow up (which was significantly reduced) as well as a number of intermediary factors. Crucially the study shows that drinking behaviour is related to willingness (disposition to the idea of drinking) and intentions (influenced by parental role models and expectations) which are independent of one another. The increases in parental involvement, monitoring, and communication changed intentions to drink, and this favourability changed willingness to drink. Both of these changes were linked to changes in consumption.

The program is a seven 2-hr weekly group meetings held at community facilities. Each meeting includes separate training sessions for parents and children, followed by a joint parent–child session where families practice the skills they learned. Focus is on communication, understanding influences and boundaries of alcohols, guidance and support, decision-making. Group sizes ranged from 3 to 12 families, with an average of 10 families attending each session. 64% of the families attended five or more sessions, and 36% attended all seven. N=281 African American children. Mean age = 11.2 years.

Community 7  Strong American Families Program/A Theory-Based Dual-Focus Alcohol Intervention for Preadolescents: The Strong African American Families Program

Gerhardt, Gaborn, Brody et al 2006

Clear intention to change behaviour toward alcohol (1) based on theoretically sophisticated and refined model (2) which is aimed at a specific ethnic cleavage within American families (3). As with discussion of SAAF in Community 6, there is little evidence of factors 4-6 being covered, but explicit focus and tailoring towards African Americans makes it relevant.

The study was unable to control for parenting behaviour during the course and understand fully how this might or might not have changed. Very young adolescents used (mean age =11.2) so low levels of drinking anyway. This issue also raises questions of whether older adolescents become more independent of their parents in terms of behaviour and thus less ‘malleable’ as the authors put it.

Clear purpose (1) (focus on alcohol preventative strategies for children and adolescents; decreasing heavy episodic drinking; delaying onset of consumption; achieving changes in attitudes towards alcohol and drinking behaviour in the adult population) and based on previous research (2): social structures, interaction, environment, economics, the role of public policy, and risk and protective factors. Curriculum was accompanied by a number of local measures including leaflets being sent to parents re: good practice. Other SN factor unclear.

A community action programme for reducing harmful drinking behaviour among adolescents: the Trelleborg Project.

Ståhl,B, Oestergren, Larsson et al 2006

From baseline data in 1999, 3 surveys done annually to 2003. Analysis determined the link between risk factors and excessive drinking, binge drinking, purchaser of alcohol, and alcohol provided by parents. Results: decrease in harmful drinking behaviour in Trelleborg when comparing baseline with postintervention measures (consumption; excessive drinking; binge drinking in last month; purchasing alcohol; parental provision of alcohol). Comparison with other studies showed changes in indicators were more rapid and consistent in Trelleborg. Finally, multivariable logistic regression analyses showed that the outcomes were not likely to be attributed to changes in environmental factors.

The strength of the successful project would seem to be its multi-factorial interventions which acknowledge both demand and supply factors, at the structural and agency levels. Combining pro-active education with law and order responses, media coverage and parental information-giving would seem to be an effective, holistic approach.

Very robust study with long-term data, and impressive regression analysis which seems to elucidate the effects of the intervention from external environmental factors - especially through comparisons with data of changes over time from elsewhere in Sweden. However the curriculum for parents was only completed by a pilot group, which raises questions about full parental engagement.

http://www.psychology.iastate.edu/~fgibbons/pdfs/gerrard2006SAAF.pdf

http://pt.wkhealth.com/pii/10902409/2006/01/00012.jpg

http://pl.wihealth.com/pdf/jhi/addlabstracts/000008514-200606000-00012.html;jsessionid=Kv1XtCWQy9zZ0yZFhnbnvppZfGs23Gh2gJFGvkzS1KHL7-JFVkw5HKL7jwCgZwMf196604724181105629f8991-1
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<tr>
<th>Model</th>
<th>Country</th>
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<th>Interventions</th>
<th>Findings</th>
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<tbody>
<tr>
<td>Icelandic</td>
<td>Iceland</td>
<td>Computer-Based Intervention</td>
<td>with and without Parent Involvement Reducing the Risks of Alcohol Use among Urban Youth: Three-Year Effects of a Computer-Based Intervention with and without Parent Involvement</td>
<td>Results seem convincing and seem to suggest very modest difference between the groups with CD-ROM and parents from those who only used the CD-ROM. Mean alcohol over the past 30 days at baseline (n=514) = 0.7, 1 year follow up (n=513) = CD-ROM 0.8, CD+Parent 0.8, contr. 1.2. 2 year follow up (n=452) = CD 0.9, CP 0.9, contr. 1.4. 3 year follow up (n=469) CD 1.0, CP 0.9, contr. 1.6. All these findings are significant at 95% confidence interval. Attrition is relatively small.</td>
</tr>
<tr>
<td>Icelandic</td>
<td>USA</td>
<td>Schinke &amp; Schwinn</td>
<td>Intervention for preventing drug abuse among girls</td>
<td>The use of a media-platform such as CD-ROM for home PCs allows significant tailoring at a social marketing level to change substance use/abuse (1) especially when segmented (3) not simply for age but also for gender. Audience research (2) in order to make the product delivery effective (5) and attractive (4) was clearly evident. Appropriate music, graphics and language etc was used. Participants were seventh grade (12-13) girls (n=91) from 2 schools in New York City. Take-up rates were high (95%) and girls were assigned to receive either conventional interventions or a gender-specific computer based intervention. CD-ROM looked at 4 areas - what is stress?; Drugs and stress; Dealing with stress; Stress-reducing techniques. Measures were taken at pre- and post-test in terms of how the girls handled deals with stress, attitudinal issues re: their appearance and weight, and substance use questions regarding attitudes towards consumption as a means for dealing with stress. All of these measures were adjusted to be scaled 1-5. The intervention group were significantly less likely to see alcohol as a good means of dealing with stress, they were more likely to have a wide-range of stress-addressing mechanisms.</td>
</tr>
<tr>
<td>Icelandic</td>
<td>USA</td>
<td>Schinke &amp; Schwinn</td>
<td>Intervention for preventing drug abuse among girls</td>
<td>Three key lessons pointed out, though many more apparent. Study stresses the importance of simultaneously involving young people, parents, schools and other clubs/organisations for the intervention to work - they point out that those who drink a lot are likely to spend little time with parents - hence parent only interventions will be of limited value. The critical age startiing interventions is 12-13, important not to run interventions too late. In addition this is a long term strategy and it is possible to work effectively with both known and emerging community-level risk and protective factors for a particular behaviour without attempting to prove a direct causal relationship.</td>
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**IT/Media 3**

**Schinke, Schwinn & Cole**

Computer-Based intervention with and without Parent Involvement/ Preventing Alcohol Abuse among Early Adolescents through Family and Computer-Based Interventions: Four-Year Outcomes and Mediating Variables

Same as ‘IT/Media 1’: Very strong social marketing basis as clear attempt to limit alcohol use (1), specifically tailored to a certain age range and the mode of consumption (CD-ROM) shows clear and novel mode of appealing to young people (2,3). This would appear to be attractive to young people (4), have strong characteristics in terms of product, place etc (5) though whether the CD-ROM is actually used or shelved for another distraction (6) would inevitably be hard to discern.

Four year follow-up of ITMedia 1 - see for original intervention description. Follow-on interventions consisted of annual CD-ROM booster sessions with a review of prior components. Issues covered increasing peer pressure, dating, greater access to alcohol, media influences and increased unsupervised time. Parent booster sessions consisted of 4-hour workshop addressing stress of having teenagers, different gender needs, communication and discussions around alcohol. Five years after first testing, 91.8% completed the four year follow-up measures.

Building on the findings for ‘IT/Media 1’ this four-year follow-up adds to the longitudinal understandings of this innovative intervention. The findings were marginally in favour of the intervention with the CD-ROM combined with family intervention, which in turn was marginally more effective than the control. Further evidence was stated that the CD-ROM/family arm youths were less likely to have drinkers (or people who had been drunk) among their 5 best friends.

Through effective, the success of the intervention over the control is marginal. However the study does point out the possible mediating variable of the best friends that young people were associating with. Technological approach advantageous.


**IT/Media 4**

**Schinke, Cole & Fang**

Computer-mediated mother-daughter programme/ Gender specific intervention to reduce underage drinking among early adolescent girls: a test of a computer-mediated, mother-daughter programme

Similar details to IT/Media 2: The use of a media-platform such as CD-ROM for home PCs allows significant tailoring at a social marketing level to change substance use/abuse (1) especially when segmented (3) not simply for age but also for gender. Audience research (2) in order to make the product delivery as effective (5) and attractive (4) as possible was clearly evident. Appropriate music, graphics and language etc was used.

202 mothers/daughter (age 10-13) pairs took part in the study as recruited through local advertisements both online and elsewhere. The software sought to develop nurturing mother/daughter relationship and home skills for managing conflict, resisting media influence, refusing alcohol and drugs, and correcting peer norms regarding substance abuse. A control group was also assessed. There was a 2 month and one year follow up.

While the findings were significant, there is no information as to the size of the effects. Nonetheless the CD-ROMs were evaluated very positively by the participants and the study showed the potential for structured interventions amongst the family within the comfort of the home.


**Hepworth**

**Smith, Hodgson, Bridgeman et al**

Brief motivational interview/ A randomized controlled trial of a brief intervention after alcohol-related facial injury.

Clear attempt to change behaviour (1) and segmented marketing (3) by targeting young people who have had a facial injury requiring surgery following an accident related to alcohol and could be deemed high risk (and willing to learn). The fact that they are in the midst of receiving treatment in A&E also suggests high level of attention versus competitors (6) albeit not in a typical marketing sense.

The setting was an oral and maxillofacial surgery out-patient clinic in an urban teaching hospital. 151 participants were randomized to motivational intervention and control conditions. The intervention was treatment as usual plus a one-session brief motivational intervention administered by a nurse. Control treatment was as usual.

Three sets of measurements: baseline, 3-month and 1-year follow-up. Primary outcome measures: total alcohol consumption, typical weeks consumption and days abstinent in preceding 3 months. Other outcome measures included the Alcohol Use Disorders Identification Test and a measure of satisfaction with social relationships. Results showed significant decrease in 84-day total alcohol consumption across the year (P = 0.006) and a significant effect for the intervention group. (P = 0.029). This pattern repeated for days abstinent and alcohol consumption in a typical week as well as alcohol-related problems. Significantly greater reduction in the percentage of binge drinkers in the motivational intervention group (60% to 27%, P = 0.009) compared to control group (from 54% to 81%, NS).

This approach demonstrates a useful way of targeting a segmented, high risk cohort. The study concludes that brief interventions are recommended for adolescents who present to an A&E with an alcohol-related event and report pre-existing problematic alcohol use. May need the skills of a nurse trained in this technique to be effective.

No data given as to the size of the effect on behaviour. Intervention assumes computer literacy and owning a PC. The alcohol consumption levels were highly significant even though at the 2 month follow up.

http://ptd.uk/health.com/articles/abstract000085 14-200301000-00007.html?sess id=9f1a6d41 teachersho l/af9l4hdf4aj89ln LFPevm82W6tVYv0G2H1XQ 3J3D1vs5-1260103914!181195628!8091!-19118394

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**References**

- Boekeloo & Griffin, 2007. Rehabilitation.
Similar segmentation and approach to Hospital 1. Clear attempt to change behaviour (1) and segmented marketing (3) by targeting young people who have had an accident related to alcohol and could therefore be deemed 'high risk'. The fact that they are in the midst of receiving treatment in A&E also suggests high level of attention versus competitors (6) albeit not in a typical marketing sense.

The study tested whether a brief motivational interview (MI) would reduce alcohol-related consequences and use among adolescents treated in an emergency department (ED) after an alcohol-related event. Patients aged 13 to 17 years (N=152) with a positive blood alcohol concentration (BAC) by lab test or self-report were recruited in the ED and randomly assigned to receive either MI or standard care (SC).

Both conditions resulted in reduced quantity of drinking during the 12-month follow-up, whereas alcohol-related negative consequences were relatively low and stayed low at follow-up. Adolescents who screened positive for problematic alcohol use at baseline reported significantly more improvement on 2 of 3 alcohol use outcomes (average number of drinking days per month and frequency of high-volume drinking) if they received MI compared with SC.

This approach demonstrates a useful way of targeting a segmented, high risk cohort. The study concludes that brief interventions are recommended for adolescents who present to an A&E with an alcohol-related event and report pre-existing problematic alcohol use. May benefit from skilled nurse to deliver intervention.

Study inhibited by high refusal rate, an inevitable reliance on self-reported outcomes data and difficulty with people dropping out of the study.

http://linkinghub.elsevier.com/retrieve/pii/S0022347604003786