

## Q13: What is the effectiveness of behaviour change techniques including life skills education in promoting mental health for children and adolescents?

### **Background**

Primary prevention has always been of interest both to the public and the policy makers and different strategies have been adopted to make this possible. Among primary preventive measures, school based programmes and focusing on young people is to be noted, but unfortunately evidence in favour of the effectiveness of such interventions has not been encouraging. Parents commonly share concerns with primary and secondary care doctors about vulnerability of their young children and how drug and alcohol use can be prevented and how mental health can be promoted. Though most of the preventive measures directly targeting children and adolescents are school based, it seems mandatory to have an update on the evidence base about such programmes share it with non-specialized health care workers and ask them to provide families with valid information and guide them in the right direction.

### **Population/Intervention(s)/Comparator/Outcome(s) (PICO)**

Population:	primary or secondary school pupils
Interventions:	school-based interventions
Comparator:	curricular activities or different school-based interventions
Outcomes:	reduction in risk behaviour
	change in knowledge
	decision-making
	self-esteem
	peer pressure resistance

### **Description of the systematic review**

The search included the Cochrane Drug and Alcohol Group trial register (February 2004), the Cochrane Central Register of Controlled Trials, (*The Cochrane Library* Issue 2, 2004), MEDLINE (1966 to February 2004), EMBASE (1988 to February 2004), and other databases. Researchers in the field were contacted and reference lists of articles were checked.

All studies reporting the evaluation of any intervention program targeting individuals or groups versus a control condition (usual curricular activities or another school-based drug prevention program) and designed to prevent substance use in school setting, were taken into consideration. In order to be included, studies had to be based on an experimental or quasi-experimental design, such as Randomized Controlled Trial (RCTs), Controlled Clinical Trial (CCTs), or on a well conducted observational design such as Controlled prospective Studies (CPS), and fully describe the intervention. School-based interventions were classified according to Tobler (Tobler & Stratton, 1997; Tobler et al, 2000), in terms of their educational objectives (skills, affective, knowledge-focused programs); teaching modality (interactive, passive); administrators (regular teachers, external educators, peers); follow-up (booster yes or no) and context activation (high or low).

Control Intervention included curricular activities and different school-based intervention. Outcomes variables examined in this review included drug knowledge (self reported, specific tests, specific drugs, drug attitudes (self reported, specific tests); acquisition of personal skills (self reported, specific tests), self-esteem, self-efficacy, decision making skills, peer pressure resistance- assertiveness, peers/adults drug use (self reported, specific tests), intention to use drugs, use of drugs (self reported, specific tests, changes in behaviours (self reported), arrests, hospitalization, police incident reports, school performance (specific tests).

32 studies (29 RCTS and three controlled Prospective Studies (CPS) were included with 46539 participants. Twenty eight were conducted in the USA and most focused on 6<sup>th</sup> and 7<sup>th</sup> graders and based on post -test assessment. For the study by study table please see the attached review pages 5-8.

### **List of the systematic reviews identified by the search process**

Faggiano F et al (2005). School- based prevention for illicit drugs' use. *Cochrane Database of Systematic Reviews*, (2):CD003020.

#### **Other reviews that were identified:**

White J, Michie S, Rumsey N (2008). Changing behaviours in young people: Evidence on the effectiveness of behaviour change techniques with people aged 11-18. Commissioned by the Health Inequalities Unit, Department of Health.

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Hawks D et al (2002). Prevention of psychoactive substance use. A selected review of what works in the area of prevention. Geneva, World Health Organization.

### **Quantitative or qualitative analyses**

Two authors independently extracted data and assessed trial quality. They classified the interventions according to the content of the programmes (skills focused, affective focused, knowledge focused, and the usual curriculum), and teaching modality (teachers, external educators and peers).

Data were analysed with RevMan software and RCTs, CCTs, and CPSs were analysed separately. A standardized effect size was calculated for each study based on the outcomes reported and whenever possible relative risks and 95% confidence intervals as well. Some RCTs including those of Botvin did not present data suitable for the inclusion in meta-analyses. In order to assess the effect of the low quality studies on the overall results, the studies providing data for the metaanalyses were submitted to a sensitivity analysis.

### **Methodological limitations**

None of the RCTs satisfied all the quality criteria used in the review and all were classed as B or C. Even so, all but one of the studies comprised in the meta-analyses had a B quality score:

- All studies mentioned randomization procedure without further description.
- None of 29 RCTs adopted blinding strategies.
- In 8 studies losses to follow up exceeded 25%.
- Only 4 of the 29RCTs included were designed to control the cluster effect, as discussed later.
- No study described allocation concealment procedures.

The control for heterogeneity was not satisfactory.

Meta-analysis was not possible for all studies especially the famous Botvin studies.

No assessment of publication bias was performed.

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Most results are outcomes at post test and there are very few long-term follow-ups.

### **Directness (in terms of population, outcome, intervention and comparator)**

28 RCTs came from USA, 1 from Canada and 1 from UK. Directness for Low and middle income countries is low. External validity will be good only for similar educational systems. Many studies do not target drug use but intermediate behaviours.

### **Any additional information (safety and tolerability issues, cost, resource use, other feasibility issues, as appropriate)**

In 2002, WHO commissioned a systematic review to document the evidence for interventions in the area of psychoactive substance use prevention (Hawks et al, 2002). School based educational programmes were included. 1265 studies were reviewed which included high quality ones from industrialized countries based on Cochrane standards and all studies from developing countries. Of these 285 studies include school based programmes. Important conclusions from this review are summarized below:

Life Skills Training programme supports the use of booster sessions, interaction between peers and teacher training.

Substance use specific mediating variables are important for creating substance use behaviour change and should be incorporated into programmes.

Substance use education may benefit from placement within a broader health education curriculum. However, research is needed to clarify the benefits of this placement.

In 2008 another systematic review was conducted by White et al (2009) who focused on all studies that targeted behaviour change as their intervention and among their outcomes smoking and alcohol but not illicit drugs was included and this review can be considered as complementary to the Cochrane review (Faggiano et al, 2005) mentioned above. They filtered out 58 systematic reviews which met the inclusion criteria: Population was non-clinical young people from the general population between 11-18 years; interventions were any which have attempted to promote smoking cessation to reduce alcohol use among others. Outcomes were behavioural outcomes such as smoking cessation and reduced alcohol consumption among others. Important recommendations were: Two techniques were found to be effective across more than one health behaviour. Firstly, improving social skills and second, reinforcing that healthy behaviours were becoming the norm and unhealthy behaviours were less socially acceptable.

For effective alcohol interventions, Techniques from the strengthening families which implicate teaching parents on how to use appropriate disciplinary strategies and communicate with their children and social skills training for both parents and children.

For tobacco prevention correcting perceptions of tobacco use in adults and person and emphasizing the declining social acceptability of tobacco use and publicly pledging not to use tobacco is more effective.

Across multiple behaviours, providing information on the consequences of behaviour was consistently found to be ineffective.

## **Narrative conclusion**

The three groups of prevention programs (knowledge, skills and affective-focused) displayed different patterns of efficacy with regard to individual outcomes: knowledge focused programs improve mediating variables (especially drug knowledge) compared with usual curricula, but is not more effective than skills based programs. When final outcomes are considered (drug use), their effects are comparable to those of the usual curricula and the other two types of programs; affective-focused programs improve decision making skills and drug knowledge compared to usual curricula and knowledge-focused interventions. Two low quality studies gave conflicting results: Sexter et al (1984) showed a positive effect for drug use, whereas Hansen et al (1988) showed an opposite effect for marijuana. This result is in line with a low quality CPS of high school students, suggesting increasing use of marijuana after affective intervention, compared to usual curricula (Valentine et al (1998a)). Skills focused programs have a positive effect on both mediating variables (drug knowledge, decision making, and self-esteem and peer pressure resistance) and final outcomes, compared to usual curricula. The meta-analysis on drug (ns), hard drug and marijuana use show a lower use in the intervention groups at the post test, even years after the intervention, with most of the RCTs included having a satisfactory methodological quality (mainly quality score = B). On the other hand the only difference stemming from the comparison of skills focused programs with other kind of interventions relates to self-esteem improvement.

In summary, higher quality studies favour a positive effect of life skills training on illicit drug use.

## **References**

Faggiano F et al (2005). School- based prevention for illicit drugs' use. *Cochrane Database of Systematic Reviews*, (2):CD003020.

Hansen WB et al (1988). Affective and social influences approaches to the prevention of multiple substance abuse among seventh grade students: results from project SMART. *Preventive Medicine*, 17:135–54.

Hawks D et al (2002). Prevention of psychoactive substance use. A selected review of what works in the area of prevention. Geneva, World Health Organization.

Sexter J et al (1984). Substance abuse: assessment of the outcomes of activities and activity clusters in school-based prevention. *The International Journal of the Addictions*, 19:79–92.

Tobler NS, Stratton HH (1997). Effectiveness of school-based drug prevention programs: a meta-analysis of the research. *The Journal of Primary Prevention*, 18:71–128.

Tobler NS et al (2000). School-based adolescent drug prevention programs: 1998 meta-analysis. *The Journal of Primary Prevention*, 20:275–336.

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Valentine J et al (1998a). Measuring the effectiveness of the Urban Youth Connection: the case for doseresponse modelling to demonstrate the impact of an adolescent substance abuse prevention program. *Journal of Primary Prevention*, 18:363–87.

White J, Rumsey N, **Michie S** (2009). Evidence of the effectiveness of interventions to change behaviours related to health in young people aged 11-18. Commissioned by the Health Inequalities Unit, Department of Health.

### From evidence to recommendations

<b>Factor</b>	<b>Explanation</b>
<b>Narrative summary of the evidence base</b>	<p>The 2005 Cochrane review has provide a number of studies with low and moderate quality which indicate that Skills focused programs have a positive effect though modest on both mediating variables (drug knowledge, decision making, self-esteem and peer pressure resistance) and final outcomes (illicit drug use), compared to usual curricula. Only lower quality studies favour no response or even negative response. Complementary reviews of WHO in 2002 and J.White et al. Focus on behaviour change instead of increasing knowledge alone. Still more is to be known about the long term outcomes of such interventions.</p> <p>Increasing social skills of children and emphasizing on the changing social norms in favour of less smoking is effective. Blending social skills training and parent training may help in preventing alcohol problems in children.</p> <p>The directness of evidence however is very low for low and middle income countries.</p>
<b>Summary of the quality of evidence</b>	<b>Weak to moderate.</b>
<b>Balance of benefits versus harms</b>	High quality studies are not concerned about any harm. The benefits are many. Evidence is in favour of benefits to harm.

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<b>Values and preferences including any variability and human rights issues.</b>	Drug and alcohol use in children and adolescents is considered as a universally negative behaviour. But educational systems are not always prepared to include life skills programme in their curriculum.
<b>Costs and resource use and any other relevant feasibility issues.</b>	Cost of training and follow up is high for life skills training. It is not feasible to implement the programme in all contexts.
<b>Recommendation(s)</b>  Non-specialized health care facilities should encourage and collaborate with school-based life skills education, if feasible, to promote mental health in children and adolescents.  Strength of recommendation: STANDARD	

**Update of the literature search – June 2012**

In June 2012 the literature search for this scoping question was updated. No new systematic reviews were found to be relevant.