



EU-Dap – European Drug Addiction Prevention trial

The Evaluation of the Efficacy of a School-based Program for Prevention
of Drug Abuse

Study presentation

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1. Introduction

Drug addiction is commonly described from both the medical and the social point of view as a chronic, relapsing disease, characterised by the effects of the prolonged use of the drug itself and by the behavioural disorder due to its compulsive seeking (Leshner 1997).

There is no doubt that, once it is established, addiction "is often an uncontrollable compulsion to seek and use drugs" (Leshner 1999). However, at least two groups of drug users have been identified, the "sensation seekers" and people using drug "as a way to deal with life's problems or with dysphoric mood". Moreover, not all of the initial users progress from experimental use to drug addiction. In fact, it is widely accepted that *experimental use* is typical of adolescents, who "use drugs simply for the pleasant feelings or the euphoria that drugs can produce, or to feel accepted by their peers" (Leshner 1999). Even if individual vulnerability, due to neurological or psychological susceptibility, has to be taken into account, "even occasional drug use can inadvertently lead to *addiction*" (Leshner 1997; Leshner 1999). To explain the origins of addiction, other authors suggest the "stepping-stone hypothesis". According to this, drug use follows culturally determined steps, for example hard liquors and tobacco are defined to be an intermediate step between beer/wine and marijuana, while marijuana represents a further step to other illicit drugs (Kandel 1975). Considering that these are not alternative explanatory models, whichever model of explanation is chosen, primary interventions should aim both to prevent initiation (from a population point of view, to reduce incidence of the first use), and to block the progression, i.e. the transition from *experimental use* to *addiction*. Specific intervention models could choose to aim to a unique approach; cigarette smoking, for instance, is a prototype of the latter approach, in so far initiation is nearly universal, while progression concerns 30-50% of the triers; the progression from marijuana (prevalence of lifetime use >30%) to hard drugs (prevalence <5%) could be a target both of an intervention aimed to reduce initiation or to reduce progression (Siliquini, 2001).

Taking into account these models and the modern theories (Wise 1998; Nestler 1997), addiction can be considered as a unique problem and the preventive interventions must target age categories instead of specific drugs. This is the approach we followed in designing "Unplugged". This program also takes into account that our understanding of the dynamics and determinants of drug abuse is far from satisfactory (Green 1991).

2. The role of the school in prevention of drug use

Schools are appropriate settings for alcohol, illicit drugs and tobacco use prevention programs because of a number of reasons. First, four out of every five persons who use tobacco begin before they reach adulthood. The prevention of substance use needs therefore to focus on school-age children and adolescents, before their beliefs and expectations about smoking and other substance use have been established. Second, schools offer the most systematic and efficient way to reach a significant number of students each year. Third, in most countries schools are in the position to enforce articulated school policies. These, applied fairly and consistently, can help students to decide to abstain from tobacco, alcohol and illicit drug use (CDC 94). The school policy should cover:

- an explanation of the rationale for preventing drug use (e.g. tobacco is the leading cause of death, disease and disability);
- prohibitions against use of smoking, alcohol and other drug use by students, all school staff and visitors on school property, in school vehicles and at school-sponsored functions away from school property;
- prohibitions against alcohol and tobacco advertising in school buildings, school functions and school publications;
- provisions for students and all school staff to have access to programs to help them quit using drugs;
- procedures for communicating the policy to students, all school staff, parents or families, visitors and the community.

Finally, schools are by definition committed to pedagogic interventions on a large range of behaviours, and school personnel needs only minimal training, if any, to implement valuable programs.

As outlined before, school-based interventions do not need to be substance specific, inasmuch preventing tobacco use can also contribute to prevent the use of illicit drugs. It is therefore an advantage if such programs are designed to prevent the use of all substances.

3. School-based interventions against substance use

Most prevention of substance use in the school environment is based on behavioural theory (Kelli 2002, Tobler 2000), and aims at reducing the onset of adolescents' alcohol, tobacco and drug use by decreasing personal and social risk factors and by strengthening personal and social protective factors (Ennet, 2003).

Several studies have compared the effectiveness of different school-based interventions. Life Skills (Botvin et al. 1995), Project Northland (Perry, 1996), The Midwestern Prevention Project (Pentz, 1989), Project SMART (Hansen, 1991) and Project ALERT (Ellickson, 1993) are examples of school-based prevention programs teaching adolescents resistance-, general- social. and personal skills. Although interventions based on the Life Skills model appear the most promising in reducing drug initiation (Foxcroft 2004; Faggiano, 2004; Thomas 2004), the results from most projects generally show a moderate effect on tobacco use, and inconsistent effects on alcohol and drug use (Ashton, 2000, Tobler, 2000).

In an extensive research Tobler shows that an interactive curriculum, which involves students in a more intensive way, is more effective than a non-interactive one, based mostly on traditional lessons, in preventing illicit and legal drug use among adolescents (Tobler, 2000). Tobler further identifies several characteristics of the intervention that are critical in increasing in effectiveness of school-based intervention. These are: i. appropriate information about drugs, including information on short-term effects and long-term consequences; ii. focus on personal, social and resistance skills, helping to identify internal (e.g. anxiety and stress), as well as external (e.g. peer and advertising) pressures; iii. emphasis on normative education and reinforcement of awareness that most adolescents do not use alcohol, tobacco or other drugs; iv. structured broad-based skills training such as goal setting, stress management, communication skills, general social skills and assertiveness skills; v. teacher training and support from program developers or prevention experts; vi. active family and community involvement; vii. cultural sensitivity- for

example by including activities that require teacher and student input and which can be tailored to the cultural experience of the classroom (Kelli, 2002).

4. Rigorous evaluation of the primary prevention of substance use

In order to scientifically evaluate whether a given intervention promotes the reduction substance use there are two main methodological requirements:

- 1. use of a group of subjects to which the intervention is not administered (controls) for comparison reasons. In fact, it is not considered valid for the evaluation of efficacy to just compare drug use before and after the intervention, because a huge number of other factors may affect the outcome (for instance increasing children age, media prevention campaigns etc). The control group plays the central role to show what the frequency of substance use would be had the children not been exposed to the intervention. For this reason the control group must be treated as much as possible in a similar way as the intervention group, except for the intervention, i.e. will get the same questionnaires, the same time schedule, as the intervention group;
- 2. random assignment of schools to the intervention or control group. In order to represent the unexposed population, the control group at the project start needs to be as identical as possible to the intervention group, with the exclusion of the intervention. For instance, there should not be important differences in social class, gender, etc. The only way to ensure that this happens is not to allow schools choose by themselves which program they want to follow. Someone else has to do this choice, and it has to be done completely by chance. For this reason the schools who will be invited to participate to the study, will sign up to be included in the study, not in a specific intervention. The schools accepting this condition will be randomly assigned to one group or another. They will be communicated which group they belong before the conclusion of the current academic year.

What kind of results should the evaluation focus on is another critical issue for this kind of projects: the evidence that an intervention improves the knowledge about the risks associated with tobacco smoking or alcohol consumption cannot be considered enough to conclude that the intervention is effective. We need to prove that the intervention is able to reduce the number of users, and that the students who receive the intervention smoke, drink and use drugs actually less than controls.

The others characteristics of a sound evaluation study are less relevant for this concise presentation; for the EU-Dap study they are extensively explained in the Study Protocol (EU-Dap SDG, 2004).

5. Why the EU-Dap project?

In most junior-high and high schools in Europe some kind of intervention against the use of smoking, alcohol and drugs is carried out every year. Most of these are programs, however, have never been evaluated with the scientific methodology described above. This is a particularly serious problem: on one side, as already mentioned, the theory about the origin of drug use is still weak, so that a lot of interventions can be based on not really valid principles. On the other side, the evaluations of efficacy carried out so far does not allow to draw firm conclusions and to

take decisions. In some cases only the ability of the intervention to modify knowledge or some skills was studied., In other cases the methodology was not sound, for instance there was no control group. These premises can even create damage. How important a proper evaluation is can be easily understood from the following example: the authors of a widespread prevention program, Life Education, stated: *“When the results” of the study “are reported to the general population of children, we may think that all smoking among year 6 schoolchildren, 25% of girls’ and 19% of boys’ smoking could be attributed to participation in Life Education, as could 22% of all boys’ recent drinking“.* The authors conclude that *“The findings suggest that intervention programmes should be thoroughly evaluated prior to widespread implementation...”* (Hawthorne 1996). From the ethical point of view, it is absolutely not acceptable that an intervention, carried out without an expressed need, could cause harm (Gillon, 1994)

In the absence of substance use prevention programs with solid evidence of effectiveness, there is a need for a sound evaluation of programs carried out especially in the European countries. The EU-Dap project was born to fill this gap of knowledge. The intervention program we intend to evaluate was especially conceived for the European schools, and using principles and methods that scientific literature have indicated by now as the most useful in reducing substance use prevalence (Tobler 2000, Faggiano, 2004).

The ambition of EU-Dap researchers is to give to European school and health authorities some information useful to implement effective interventions to prevent the drug abuse and to implement methods for the evaluation of the effectiveness of interventions in schools.

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6. How does the project look like?

The “Unplugged” program to be evaluated in this project, has been especially created by the EU-Dap IPG group, and is presented in details in a separate document (EU-Dap IPG group, 2004). Here we will instead present the evaluation plan.

There will be a basic intervention, which will be administered in all schools (apart from control schools). In some schools, together with the basic intervention, other two activities will be evaluated: the involvement of parents and the involvement of school-peers.

In other words, altogether the project will evaluate three different curricula, delivered to three different groups of schools:

- **basic curriculum:** basic intervention with students alone;
- **class-peer curriculum:** basic intervention plus the involvement of peers.
- **parents curriculum:** basic intervention plus the involvement of parents;

7. Methods

7.1 Population

The target population consists of 13-14 years old adolescents of the area of the Participating Centres (see table).

Participating Centre	# of inhabitants	SE characteristic	Coordinator	# of schools / # of students to involve
GREECE North-west region of Thessaloniki	500.000	Mixed industry and agriculture	Greece REITOX Focal Point	15/600
SPAIN Comunidad Autonoma del Pais Basco	2 million	Mixed terciary sector, agriculture and industry	EDEX	15/600
GERMANY Kiel	230.000	Mixed tourism, agriculture and industry	IFT – Nord Institute for Therapy and Health Research De Sleutel	15/600
BELGIUM Merelbeke				15/600
ITALY Novara	100 000	middle urban communities	University of Eastern Piedmont	15/600
SWEDEN Stockholm region (excluded Stockholm municipality)	1.1 million	Large and middle urban communities	Centre for Tobacco Prevention - Stockholm centre of Public Health	30/1200
ITALY Torino	900 000	Industrial town	OED –University of Torino	30/1200
AUSTRIA Wien	1.562.482 million	Urban technology, tourism, education + administration	Institut fur social-und Gesundeits Psycologie	15/600
Total				150/6000

The minimum number of schools to be identified by each centre is 15, but the centres of Stockholm and Turin will include twice as many. The characteristics of the involved schools have been defined by the Search Coordinating Group (SCG) and are described in the Study protocol.

7.2 Assignment of schools

The three school-based interventions will be compared with a non-intervention group. The assignment of the schools to the intervention or to control group will be randomly done by the coordinating centre of the study. Out of 15 schools involved in each centre, 3 will carry out the

basic curriculum, 3 the class-peer curriculum, 3 the parents curriculum, and 6 will make the control arm.

Within each school at least 2 classes will be included and followed-up. During the time the designed schools follow the “Unplugged” program, the control schools will follow the usual health education program, if any.

7.3. Evaluation of results

The aim of the program is to reduce the use of the following drugs: tobacco, alcohol, marihuana and other drugs. We will specifically look at the difference in initial and regular use after the interventions between children in the intervention and control schools.

To this end, a self-completed questionnaire will be distributed during the first month of the school year 2004-2005 in order to evaluate the start point and to collect socio-demographic and other data.

The main sections of the questionnaire are:

- social environment;
- own substance use;
- knowledge & opinions about substances
- substance use in the nearest environment;
- family and social environment;
- school environment and school climate
- problems and skills

A second assessment will be done 3 months after the completion of the intervention in the first year (approximately May-June 2005). In order to evaluate the long-term effectiveness of the program a similar evaluation is scheduled after 1, 2, and 4 years.

In order to preserve the integrity of the children and protect the confidentiality of the answers we will identify the questionnaires by means of a code which will be autonomously generated by the children themselves.

7.4. Who will carry out the program?

The **basic curriculum** (12 school-hours) will be carried out by teachers in the participating classes, appointed by the school. The designed teachers will participate in a specific 2.5 days training session prior to the beginning of the intervention.

The **class-peer curriculum** will be carried out by some designed students in each class, with a minimal supervision by the teachers. To this end, a specific teacher manual will be distributed.

The **parents curriculum** (3 evening seminars) will be conducted by an expert from outside the school, appointed by the local co-ordinator.

7.5. Duration of the program and time-line

Each curriculum will be conducted throughout the school year 2004-2005. Booster interventions will be carried out during following years.

The total class-time for the curricula to be implemented is shown in the following table

A. Duration of the intervention by type of program

	Controls	Interventions		
		Basic intervention	Parents curriculum	Class-peers curriculum
Training of teachers	—	2.5 days	2.5 days	2.5 days
Pre-test questionnaire administration	1 hour	1 hour	1 hour	1 hour
Basic intervention administration	—	12 hours	12 hours	12 hours
Training peers (students)	—	—	—	2.5 hours
Monitoring peers (teachers)	—	—	—	3 hours
Post-test questionnaire administration	1 hour	1 hour	1 hour	1 hour
Total teachers' time	2 hours	34 hours	34 hours	39.5 hours

The time schedule of the project is drafted in the following table. The teacher's training should be carried out in 2.5 consecutive days just before the start of the scholar year; during the first two weeks of school the pre-test will be given to students. The intervention will take approximately 3 months (1 hour per week) and the post-test is foreseen in May.

B. Time-line for the project

	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY
Teachers' training			→									
Pre-test				○								
Intervention					→							
Post-test												○

7.6 Analysis and results dissemination

The final analysis will be done after the second students survey (between June 06 and September 06) The results will be presented separately by each curriculum both for all countries together and at the level of each centre.

A final congress will be organised in Lisbon during the year 2005: all schools will be invited to participate and all results will be available in the EU-Dap Web Site.

8. Further information

For further information see the EU-Dap Web Site: www.eudap.net or please contact:

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