

IMPLEMENTATION OF EUDAP PROJECT

(European Drug Addiction Prevention)

AT A POPULATION LEVEL:

The Eudap 2 Project

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Final Technical Report 2010

Acronym: EUDAP2

Proposal title: Implementation of Eu-Dap project (European Drug Addiction Prevention trial at a population level)

Funded by European Commission under the Programme of Community Action in the Field of Public Health
(2003-2008) - Agreement n. 2005312

Starting date: 01/05/2006

Duration of the project: 44 months

Main partner: Osservatorio Epidemiologico delle Dipendenze – SC a DU Epidemiologia – ASL TO3 Collegno (TO)

Number of associated partners: 9

Total amount of the project: 1.340.537,- €

EC Co-funding : 804.321,- €



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1. Introduction

1.1. Objectives of the project

Substance use is a leading cause of premature mortality in developed countries. Attributable mortality for tobacco smoking ranges from 27% to 32% for men and from 4% to 7% for women in the Europe (Ezzati and Lopez, 2003). Alcohol is estimated to cause 14.6% of all premature deaths in European countries (Rehm et al., 2007). Overall substance use currently accounts for 31% of all deaths, 25% of potential years of life lost and in Canada, 19.5% of all hospital days for those under 70 years of age (Patra et al., 2007). Furthermore, the burden of diseases attributable to the use of alcohol and drugs seems to have increased in developed countries during the past decade, whereas a decrease is evident for that attributable to tobacco smoking.

The use of these 3 substances shares the risk of addiction. Since it is commonly described as a chronic, relapsing disease, the best way to tackle it is prevention. School is an appropriate setting for substance use prevention programs for three reasons: first, four out of five tobacco and drug users begin before adulthood. Second, schools offer the most systematic and efficient way of reaching a large number of young persons every year. Third, schools can adopt and enforce a broad spectrum of educational policies.

On these basis, the objectives of the first EU-Dap (European Drug Addiction Prevention) project were the development and rigorous evaluation of a school-based prevention program. The program has been designed, based on the most recent evidence of effectiveness (Tobler 2000), translated in 7 European languages (“Unplugged” prevention program), and is actually implemented in 7 countries and 9 collaborating centres, involving more than 7000 13-14 years old students. A Cluster Randomised Controlled Trial has been conducted for the evaluation of effectiveness of the program in reducing the initiation of tobacco, alcohol and drug use.

As experienced in the first project, even in an experimental setting, in all involved countries the implementation of such a prevention program is expected to be difficult: the areas, schools or classes in which a failure in the implementation is more frequent are those where the need is higher.

The objectives of EU-Dap 2 were the following: i) to conclude the first EU-Dap project with a long term evaluation of the effectiveness of the prevention program, and the modification of the “Unplugged” program manual, according with the comments of teachers and of supervisors that already implemented it; ii) to plan and apply the implementation at a population level of the prevention program in the centres already involved in EU-Dap as well as in new partners coming from new EU members states. This objective includes the evaluation of the effectiveness in practice of the intervention.

1.2. Context

There is a general agreement that school-based programs are the more appropriate interventions to prevent the starting of substance use. Most schools across European countries, therefore, carry out prevention programs in the school setting. There isn't, however, any national or international policy about the type of intervention to be carried out. There is, actually, a huge variability in the characteristics of the programs offered, and every school is encouraged to carry out, and even to develop by itself, a program against substance use, whatever it is. According to Nancy Tobler (1996) prevention programs can be divided into: i) knowledge-only interventions; ii) affective-only e.g. self-esteem or self-awareness building interventions, based on the assumption that psychological

factors place people at risk of use; iii) peer-based interventions, namely refusal skills and social life skills programs, the former focused on resistance skills or peer role models and the latter on inter-personal or intra-personal skills; iv) knowledge plus affective interventions; v) alternative approaches, such as interventions encouraging alternative activities to drug use. These approaches cannot be chosen in the light of theoretical considerations: the chain of causation of drug addiction is poorly understood, though social and psychological factors, susceptibility, information about hazards and many other factors are involved (Hawkins 1992, Hawkins 2002). Their choice must be pragmatic: “what matters is what works”. Many studies have evaluated the efficacy of substance use prevention programs, and several reviews have summarised their results (Thomas 2006, Foxcroft 2002, Faggiano, 2005). Although the program with a higher impact in the reduction of initiation of use appears to be the Life Skills model (Tobler 1997, Faggiano, 2005), results from most projects generally show a small effect on tobacco use, and inconsistent effects on alcohol and drug use, and a few reported even an increase in the use of drugs following the intervention (Dukes 1997; Hawthorne 1996). This event, occurring in important programs, is absolutely not acceptable on an ethical point of view. Moreover these programs have been mostly developed in North America, for example 28 out of 29 RCTs included in the Cochrane review on prevention of drug use has been carried out in USA (Faggiano, 2005), as well as all the 17 included in a review on tobacco smoking (Gorman, 2005). This may imply differences in effectiveness, when implemented in other cultural contexts: a recent paper from UK (Ashton, 2003) underlines both methodological and dissemination problems in the implementation of complex interventions such as Life Skills in an European setting. The need for a sound evaluation of programs carried out in European countries is the base of the EU-Dap project.

1.3. Specific objectives

1. Evaluation of the effectiveness of the *Unplugged* program in reducing tobacco, alcohol and drug use at long-term, in order to complete the evaluation started with the first EU-Dap project (Faggiano 2008). This objective will be reached by 2 prevalence surveys to be administered to the EU-Dap cohort of 7079 students, to be carried out at 1 year (May 2006) and 2 years (May 2007) after the end of the intervention. The assessment of the persistence of effects is relevant because it distinguishes between prevention and delay of first use. Long term effects evaluation is not common in evaluation studies (Thomas 2001, Foxcroft 2003, Faggiano 2005), and the persistence of effect is frequently contradictory between studies (Flay et al., 1989; Murray et al, 1989). For this reason it is relevant at a Public Health level to measure the achievement of the program in reducing substance use at a medium-long term, compared to controls.
2. Improvement of the first version of the “Unplugged” school-program, on the basis of the comments and criticisms provided by the teachers and supervisors involved in the first study. “Unplugged” is a new program and the first EU-Dap project can be interpreted as an evaluation of effects of it as well as a pilot experimentation to identify keys for its improvement.
3. Planning of the implementation of the prevention program at a population level in the centres already involved in EU-Dap as well as in newcomers from new EU member states. Since the program has been carried out over a sample of schools selected randomly among all schools in the reference area of the centres involved in the first EU-Dap, the problems encountered could be good descriptors of the resistance that could be met in a general implementation of the program to all the schools in the reference area. So, starting from the analysis of these problems, a “Implementation manual” will be prepared, containing recommendations of “good practice” to help the transfer of the evidence produced by EU-Dap (as well as by other programs) in the practice.

4. Implementation of the “Unplugged” prevention program to the scholar population of the reference area of all centres involved in EU-Dap 2. This objective represent an experimental application of the “Implementation manual” created by the specific objective # 3. Together with the system of indicators to be planned with, it will allow for an overall estimation of effectiveness, e.g. the “real” impact, of the program on the substance use, taking into account both the effects measured by the randomised trial and the obstacles encountered in its transfer into practice.

2. The results of the EU-Dap I project and the main open questions

The first EU-Dap project elaborated and evaluated the first version of the school-based program *Unplugged* (van der Kreeft 2009). It involved 7079 students of 12-14 years in 9 centers in 7 European countries (Austria, Belgium, Germany, Greece, Italy, Spain and Sweden). The main results of the evaluation study showed at the short-term follow-up (3 months after the end of the program and 6 months after the baseline survey), a clear protection of students of the intervention arms compared to controls. Intervention groups smoked 12% less during past 30 days, 14% less in a regular way and 30% less daily, if compared with controls. The frequency of drunkenness in past 30 days is also reduced by 28% and 31% for at least once (ALO) and regular respectively, and the consumption of cannabis lowered by 23 and 24%, ALO and regularly respectively, The use of other drugs, although rare, lowered by 11% (table 1).

Table 1. Prevalence Odds Ratios of effectiveness interventions, compared to controls, by intervention arm. EU-Dap 6 months follow-up

	Study arm							
	Controls		Basic		Parents		Peers	
	n/N*	PR	n/N*	PR (95%CI)	n/N*	PR (95%CI)	n/N*	PR (95%CI)
ALO smoking	605/2968	1	165/996	0.97 (0.71-1.33)	171/1001	0.80 (0.59-1.09)	160/982	0.89 (0.65-1.21)
Regular smoking	387/2968	1	93/996	0.81 (0.56-1.19)	110/1001	0.85 (0.59-1.24)	94/982	0.90 (0.64-1.27)
Daily smoking	277/2968	1	61/996	0.64 (0.41-1.01)	75/1001	0.72 (0.47-1.12)	57/982	0.75 (0.49-1.16)
ALO drunkenness	353/3054	1	87/1044	0.79 (0.57-1.09)	72/1029	0.61 (0.44-0.85)	94/1010	0.82 (0.60-1.12)
Regular drunkenness	120/3054	1	22/1044	0.66 (0.37-1.19)	26/1029	0.67 (0.40-1.13)	28/1010	0.76 (0.47-1.24)
ALO cannabis	225/3130	1	43/1066	0.79 (0.54-1.16)	56/1058	0.76 (0.53-1.09)	53/1026	0.79 (0.54-1.16)
Regular cannabis	137/3130	1	26/1066	0.83 (0.47-1.45)	34/1058	0.75 (0.45-1.25)	28/1026	0.75 (0.44-1.28)
ALO drugs	293/3156	1	61/1082	0.80 (0.56-1.15)	85/1066	0.98 (0.69-1.38)	76/1037	0.89 (0.64-1.25)

*. Number of users out of the total number of students answering the question at follow-up (multilevel adjusted model).

PR. Prevalence Odds Ratios (interventions vs control) estimated using multilevel model 3 (RIGLS bin 1st order MQL with 3 levels adjusting for centre prevalence of daily smoking and baseline status of the outcome)

The main conclusions of the final report were:

Unplugged works, at least in a short term. But it seems to work better:

- for alcohol and cannabis than for smoking
- for higher frequent use than for sporadic users
- for boys than for girls

Moreover it highlighted that: i) there were large differences between centers (a North-South gradient) that seems to be explained by intensity and typology of interventions involving control schools; ii) there was a lack of evidence concerning any extra intervention (parents, peers), probably due to low power to detect weak effects; iii) the follow-up at 6 months was based on a very short period of observation and that a longer follow-up was needed in order to test the stability over time of the results (for further details, see Faggiano 2008).

The report addressed a further recommendation about the teacher manual. The process monitoring indicated the need for improvement of this material, and also the need for new materials for the students.

3. Structure of the project

Apart from the basic Work Packages (WPs) aimed at coordination, dissemination and evaluation of the project, the project is organized in 4 WPs:

WP4: *Long term evaluation of the effectiveness of the EU-Dap intervention: 1 and 2 years follow-up of the first EUDAP cohort.* This WP is coordinated by the Avogadro University of Novara. The follow up of the EUDAP cohort will provide the following outputs:

- results at medium term of the effectiveness of a school based preventive intervention for drug use. These results are relevant in order to establish the persistence of the effect of the intervention at a medium term.
- the results will be mainly published in scientific papers and will be presented in national and international conferences.

This work package, in addition to the objectives established at the application for funding, developed a set of further statistical analysis on the database of the study, in order to study the mediator effect of some mediatory factors. These analysis are relevant in order to identify how the program works, and which factors are to be addressed for the improvement of the program. This further objective of the study has been developed with the support of the EMCDDA of Lisbon, and in collaboration with American researchers from the University of South California, University of Akron and National Institute of Drug Addiction (USA).

WP5: *Improvement of the manual of the ‘Unplugged’ prevention program.* This WP aimed at the improvement of the program *Unplugged*. This work package was coordinated by De Sleutel Institute of Gent in Belgium. The modification of the ‘Unplugged’ prevention package has been done starting from the process evaluation (van der Kreeft 2009), and from the comments of the teachers collected during the experimentation. The new release of the program had the ambition to be more user-friendly, and should result in an easier and more efficient implementation in terms of resources needed for the training for teacher and the time allocated to each unit).

The modified program was complemented with a more detailed ‘hand book’ for teacher , which should allow schools to implement the program also with minimal teacher training. as well as with a Students’ Workbook.

WP6: *Defining the procedure for the implementation and dissemination of the ‘Unplugged’ school outside the experimental setting.* This WP was coordinated by the Stockholm Centre for Public Health (from January 1, 2009 Department of Public Health Sciences and School of Public Health, Karolinska Institutet) in Stockholm, Sweden. Starting from the analysis of the implementation problems faced during the experimental phase, a “Guide to successful implementation of Comprehensive Social Influence (CSI) curricula in schools” was developed, in order to facilitate the dissemination of effective programs at a population level.

WP7: *Defining the procedure for a not experimental implementation for ‘Unplugged’ school program.* This WP, coordinated by Pyxida, Thessaloniki, Greece, was aimed at assessing the effectiveness of the dissemination of an effective program, Unplugged. This will allow us to estimate the effectiveness of the dissemination process outside an experimental and protected setting. This is particularly interesting in Eastern Europe countries where drug prevention, in spite of the high prevalence of consumption, does not yet represents a Public Health priority and the actions carried out toward this objective are in a very preliminary phase.

4. Work Package 4: Mid term and long term evaluation of the effectiveness of *Unplugged*: 1 and 2 years follow-up of the EUDAP cohort

The aim of the Work package 4 were to continue the follow-up of the cohort of schools and students involved in the study at 18 (2nd year follow-up) and 30 months (3rd year follow-up) after the baseline survey. After the first analysis, the EU-Dap Study Group decided to add a new objective to this WP: the analysis of intermediary factors. This has been done in the framework of a collaboration between the EU-Dap Study Group, the Prevention Science and Methodology Group of the South Florida University, which is co-funded by the NIDA, and the European Monitoring Centre for Drugs and Drug Abuse (EMCDDA). The work is on-going, and this report will present some preliminary results, in particular the preliminary validation study and some results.

Furthermore, a set of analyses has been performed on the Eudap dataset in order to assess the effects of the intervention in subgroup. The analysis on gender is presented.

4.1. Final results of the 2nd year follow-up

In brief, Seven European countries participated in the study; 170 schools (7079 pupils 12-14 years of age) were randomly assigned to one of three experimental conditions or to a control condition during the school year 2004/2005. The program *Unplugged*, a 12-hour curriculum based on a comprehensive social influence approach, was administered to classes by teachers after a 2.5-day training course, standardised at international level (van der Kreeft 2009). The study was carried out simultaneously in Austria, Belgium, Germany, Greece, Italy, Spain and Sweden. The German centre participated to the 2nd follow-up without a financial contribution from the EUDAP 2 project, because they was unable to participate to the project. For these reason they did not participated to the 3rd year follow-up. The newly involved centres of Poland and Czech Republic did not participated to this phase of the project because they were not involved in the EU-Dap 1 study.

Methods: Study design

Details of the study design have been previously published (Faggiano et al., 2007) and are briefly summarized here. The study is a cluster randomised controlled trial (ISRCTN-18092805) where schools were randomly assigned to one of four experimental arms (three intervention arms and one “usual curriculum” control group). The source population consisted of students attending junior high school (12-14 years of age) in the geographical areas of the centres participating in the study - Bilbao (ES), Ghent (B), Kiel (D), Stockholm (S), Thessaloniki (GR), Turin, Novara and L’Aquila (I), Vienna (A).

The study was powered to detect statistically significant an odds ratio of 0.75, ($\alpha = 0.05$, power 0.80, 10% prevalence in the control group and 20 students per class), comparing the intervention arms pooled together with the control group. To estimate the Inflation Factor, ICCs for lifetime and past 30-day smoking, drunkenness episodes and cannabis were estimated from past school-based surveys carried out in Greece and Sweden.

A total of 323 eligible schools were invited to take part in the trial: 33 schools were excluded because they did not meet the inclusion criteria (minimum number of classes and no involvement in structured anti-drug programs), while 120 refused to participate, mainly because they were unable to schedule the intervention during the following school year (74%). No differences were found on social stratification between accepting and refusing schools ($p=0.154$). Thus, 170 schools were

centrally randomised to one of the study arms (figure 1), grouped in three socio-economic strata at the area level, according to the most reliable available indicator. Out of 170 randomised schools, 15.9% (n=27) withdrew from the study before the baseline survey, which corresponded to 23.5% of the schools in the pooled intervention arms and 4.4% of those in the control arm (figure 1). The withdrawal of intervention schools mainly occurred during, or just before, the training of teachers, while no association was found between the risk of drop-out and social stratification of the school's catchment areas.

The school curriculum was taught from October 2004 to January 2005 in 78 intervention schools, while 65 schools acted as controls. In total, five schools refused to continue participation during the 18-month follow-up, two from the intervention arm and three from the control arm. Reasons for schools leaving the study were lack of time (3 schools), disapproving questions about inhalants (1 school), and mistrust on confidentiality (1 school).

Methods: Study population

Pre-test data were collected from 7079 students during September to October 2004 (Faggiano et al., 2007). Post-test data were collected from 6604 students in May 2005 (Faggiano et al., 2008), and again in May 2006, about 18 months after the pre-test (15 months after the end of the program), when 5812 students participated in the survey.

Data from baseline and follow-up surveys were matched using a self-generated anonymous code (Galanti et al., 2007). Across all centres, 81.3% of the records generated by the students at baseline could be linked to those generated at second post-test.

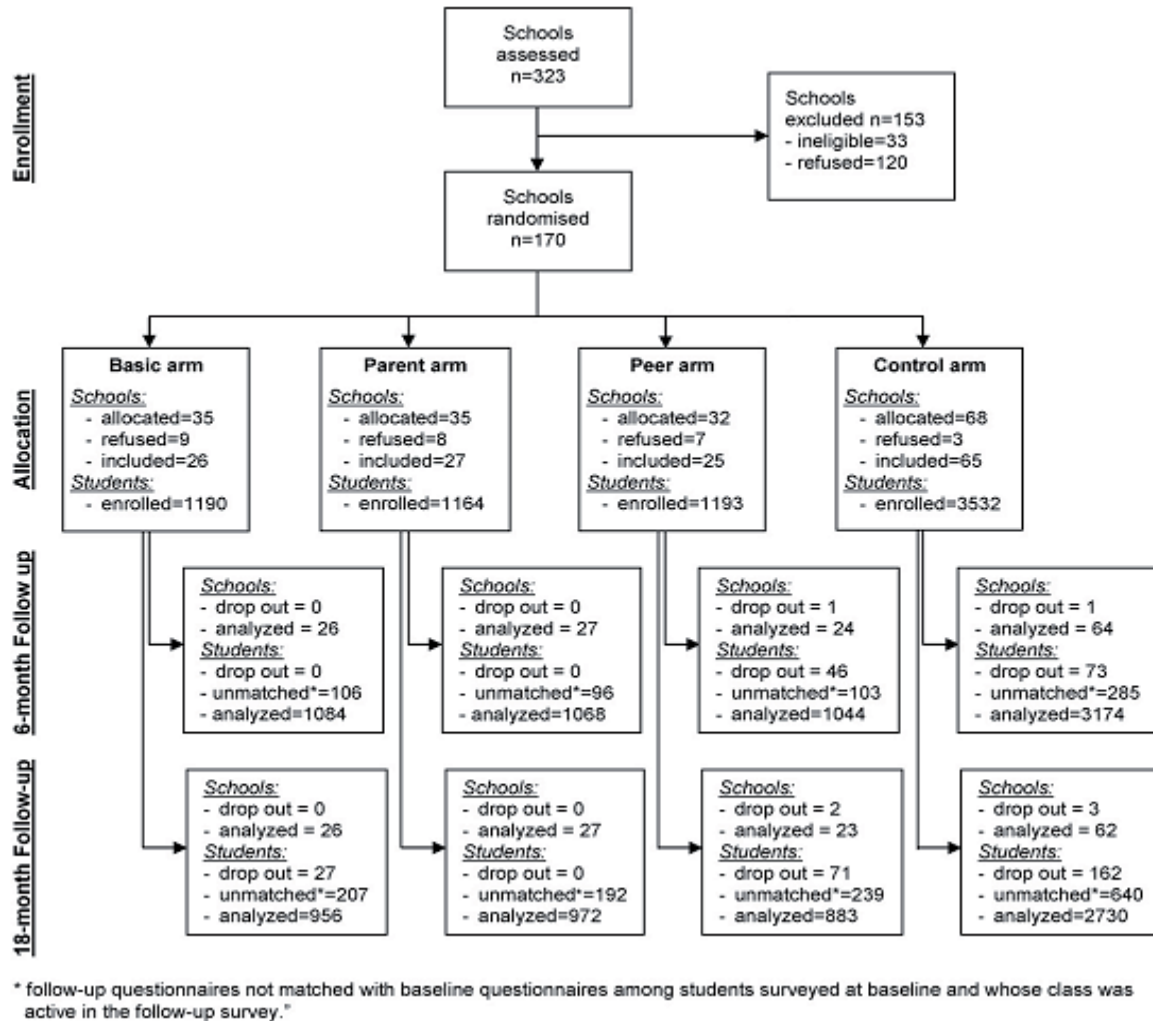
Therefore, 5541 students constituted the analytical sample of the second follow-up.

Methods: Outcome assessment

The primary outcomes of the study were behavioural endpoints regarding tobacco, alcohol and illicit drugs use. Changes in knowledge, skills, attitudes and intention to use substances in the future were secondary outcomes. Information on behavioural and psychometric outcomes was collected using a self-completed anonymous questionnaire encompassing 37 items. Questions about tobacco investigated lifetime use, use in the past year and past month, as well as number of cigarettes smoked during a week. Frequency of current alcohol consumption was investigated in five response options, from "never" to "every day". Questions on drug use and episodes of drunkenness covered lifetime, past year and past month experience. Although most items were retrieved using instruments provided in the Evaluation Instruments Bank of the EMCDDA (see <http://eib.emcdda.europa.eu/>), a test-retest evaluation of repeatability was conducted before administering them in the main study. It was found that recent use of cigarettes, marijuana and episodes of drunkenness showed a concordance higher than 90%.

The questionnaire was identical in all countries, apart from language adaptation, and kept unchanged during both surveys. Students completed the questionnaire in the classroom and during school time without teachers' participation. No biochemical validation of self-reported behaviour was planned, since adolescents' self reports in anonymous surveys show high reliability (Caraballo et al., 2008, Post et al., 2005).

Figure 1. Schools and students flow in the EU-Dap study



Methods: Statistical analysis

Seven outcome variables were derived from the information on substance use, all of them with reference to the 30 days preceding the survey: i. any cigarette smoking; ii. frequent cigarette smoking, defined as smoking six or more cigarettes per month; iii. daily cigarette smoking, defined as smoking 20 or more cigarettes per month; iv. any episode of drunkenness; v. frequent drunkenness, defined as three or more episodes; vi. any cannabis use; vii. frequent cannabis use, defined as use on three occasions or more. All outcome variables were analyzed as dichotomous (yes/no).

Past 30-day frequency of use, reflecting current use, is considered an accurate predictor of future substance use (Ellickson et al., 1992). Concerning alcohol, drunkenness is considered a stronger predictor of subsequent escalation of use than average alcohol consumption (Scheier et al., 2001).

Prevalence Odds Ratios (POR), and their corresponding Confidence Intervals (95% CI), were calculated as the measure of association between exposure to the program and behavioural outcomes (Faggiano et al., 2007), whether or not the program was delivered entirely, partially, or not at all (Intention To Treat analysis). In addition, each intervention arm was separately contrasted to the

controls to estimate a possible differential effectiveness, although these comparisons were powered to only detect large effects.

In order to take into account the hierarchical structure of the data and the cluster effect, a multilevel modelling approach was used in the analysis (Murray et al., 2004). Data were analyzed with MLwiN 2.02 software (Rasbash et al., 2004). Restricted Iterative Generalized Least Square (RIGLS) estimation procedure was used to estimate the random parameters, since it is considered to lead to unbiased estimates (Goldstein, 2003). Marginal Quasi Likelihood (MQL) and 'first order' were then selected to include estimated residuals in the RIGLS procedure, and to control for the degree of approximation. It was not possible to use 'second order' which generally provides the most accurate estimates, because, as frequently observed (Rasbash et al., 2004, Goldstein, 2003), in most cases the model does not converge.

Multivariate multilevel models were fitted using three levels: centre, class and students. The choice of the class level instead of the school (the unit of randomisation) was justified by two reasons: a. the Intraclass correlation coefficients were larger for classes than for schools; b. the sample size calculation was done using class ICCs (Faggiano et al., 2007). This approach should result in a more conservative estimate of the effects of interest (Bauer et al., 2006). Alternative models, testing the effect of different hierarchical structures of the data (for example, using schools instead of classes as second grouping level) were fitted with very similar results. Differences in prevalence of use between centres were adjusted for by including in the model daily smoking prevalence at baseline.

Absolute Risk Reduction (ARR) and Number Needed to Treat (NNT) to prevent one additional event were calculated using the product of the average prevalence at follow-up among controls and the corresponding PORs as adjusted prevalence rate of the experimental condition (Altman, 1998).

Furthermore, an analysis of transitions between stages of use was performed, where the intensity of past 30-day use at the baseline survey was compared to that at follow-up by means of percentages and 95% Confidence Intervals (Altman, 1991). For this purpose, the following mutually exclusive categorization was used: no use (no cigarettes or cannabis use in the past 30 days, no drunkenness episodes); occasional or sporadic use (one to 19 cigarettes, one to three episodes of drunkenness or cannabis use); and daily or frequent use (twenty or more cigarettes, more than three drunkenness episodes or occasions when cannabis was used).

Methods: Baseline prevalence of substance use

Significant differences in the prevalence of some substance use between intervention and control group were detected at baseline (Faggiano, 2007). Therefore, we conducted an in-depth analysis in order to identify the causes of this imbalance and its effect on the results.

The difference in prevalence appeared to be due to the inclusion among the controls of a single large school in one Italian centre, accounting for 13 classes and 238 students. In this school there was an unusually high prevalence of substance use, when compared with the remaining schools in the same centre. Excluding this school, the baseline prevalence of use was very similar between arms, and the estimates of program effects closely overlapped those obtained with the complete data, apart from lower precision due to loss of power (data not shown). The school was therefore retained in the analysis, and all estimates were adjusted by individual baseline status of the corresponding outcome.

No other school characteristics, in either the centre or other stratification level, could be linked to differences in prevalence of substance use between intervention and control group.

Methods: Attrition analysis

Failure to link the pre-test and follow-up data from the same individual could depend either by non-response to the survey (i.e., absentees, school drop-outs or refusals) or by inaccurate transcription of the anonymous code. However, these occurrences could not be separated at the stage of the computerized matching. To quantify a possible attrition bias due to selection of students that dropped out between baseline and the 2nd follow-up, we analysed the program effects after carrying forward the outcome status last assessed (Last Observation Carried Forward) (Wood et al., 2005). Also, we repeated the analyses according to a Best Case-Worst Case scenario. In the first scenario, all non-participating students were considered non-users, while in the second case they were considered users.

Results: Program implementation

Fifty-six percent of the enrolled classes implemented all the units in the curriculum, while 66% received at least 10 units and 77% at least six. Less than 5% of the classes failed to implement any part of the curriculum. On average, each unit was taught to 78% of the target population. This level of program implementation is comparable to that of other curricula administered in a European setting (Stead et al., 2007). The degree of implementation of the peer program was low in all centres. Very few classes conducted all seven of the planned meetings (8%), while 71% did not conduct any meeting at all. The degree of implementation of the parents' program was high: 70% of the schools implemented all seminars and 89% hosted at least two seminars. However, average parents' attendance was very low at 12 parents per seminar (van der Kreeft et al., 2009).

Results on substance use prevalence

The mean prevalence at baseline across centres and age groups for the relevant outcomes was 6.4% for daily smoking, 6.7% for at least one drunkenness episode in past 30 days and 3.8% for at least one episode of cannabis use. However, all groups showed a pre- to post-test increase in the prevalence of behavioural outcomes, as expected from the usual increase in incidence of onset in early adolescence (figure 2). After 18 months (15 months after the end of the program), the increase in the use of tobacco and cannabis as well as the frequency of drunkenness episodes was lower among the students exposed to experimental program compared to the control sample (figure 2). Indeed, in the crude analysis comparing the three pooled intervention arms with the control group at both follow-ups, a statistically significant negative association was observed between attending the program and all behavioural endpoints (data not shown).

When adjusted multilevel models were fitted, a significant intervention effect was detected at the first follow-up, consisting in decreased prevalence of daily use of cigarettes as well as of episodes of drunkenness in the past 30 days, while the effect on cannabis use only attained marginal statistical significance (Faggiano et al., 2008). At the 18-month follow-up, the association with decreased prevalence of cigarette smoking was no longer statistically significant, whereas the associations with decreased risk of drunkenness and of frequent cannabis use persisted (Table 2).

The NNT to prevent one additional event ranged from 26 for any drunkenness to 46 for frequent cannabis use, a substantial decrease from the first survey which is explained by the increase in prevalence.

Alternative multilevel models, fitted for purpose of sensitivity analysis, showed very consistent results (data not shown). A secondary analysis which compared each of the three intervention arms to the control arm was conducted, however the results were very imprecise and not statistically significant.

Results: Attrition

As expected, the students who could not be linked at the 18-month follow-up showed significantly higher baseline prevalence of past 30-day substance use compared to those retained in the analysis. Notwithstanding, there was also a modest statistically significant difference in retention between interventions and controls, favouring the program (data not shown). In an analysis of drop-out risk, the interaction terms between intervention condition and baseline behaviours were not statistically significant for any variable, but for cannabis use. The LOCF analysis, substituting missing outcome values with the corresponding behaviour at baseline, did not substantially change the results, as also was the case for the Best-Case scenario. In the Worst-Case scenario all associations were weakened and no longer statistically significant, but all point estimates still were below unit (data not shown).

Results: Stages of behaviour

Table 3 shows an analysis of the transitions between stages of tobacco use from the baseline survey to the 18-month follow-up. In line with the findings from the short-term post-test, students of the intervention arms, compared to controls, showed a higher tendency to remain non-users of tobacco (83.3% vs 81.4%, $p<0.05$) or to regress from occasional to no use (30.7% vs 25.7%, ns), whereas among daily users at baseline the transitions were not different between arms. The association between intervention and behavioural changes was stronger for drunkenness (table 4): in the intervention condition, compared to controls, the percentage of students that remained without an episode of drunkenness in past 30 days was significantly higher (87.3% vs 85.0%). Among students declaring sporadic episodes at baseline, a significantly higher percentage of controls progressed to frequent episodes, and a significantly lower percentage regressed to no episodes. Concerning cannabis (table 5), the proportion of persistent non-users was significantly higher among students who participated in the program compared to controls (94.4% vs 92.4%, $p<0.05$), as was the proportion of sporadic and frequent users that decreased their use (48.0% vs 41.2%, ns, and 43.5% vs 29.8%, ns).

Figure 2. Changes in prevalence of past 30 days substance use between EU-Dap participants at baseline (n=7079), at the 6-month (n=6370) and at the 18-month follow-up (n=5541).

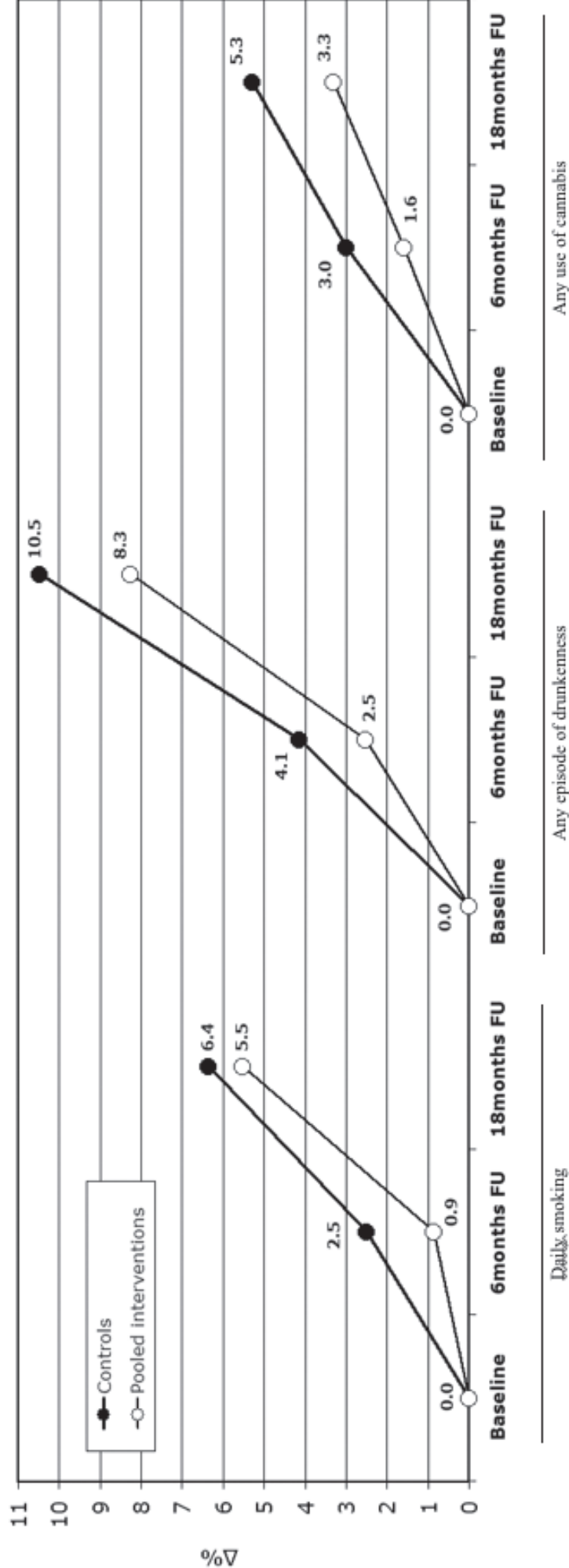


Table 2. EU-Dap Multilevel model - adjusted Prevalence Odds Ratios (POR) of substance use in past 30 days (pooled intervention arms vs control) at the 18-month follow-up.

	Intervention	Control	POR (95%CI)	ARR	NNT
	n/N*	n/N*			
Any smoking	649/2699	734/2637	0.94 (0.80-1.11)	3.7%	27
Frequent smoking	421/2699	506/2637	0.89 (0.72-1.09)	3.6%	28
Daily smoking	300/2699	355/2637	0.92 (0.73-1.16)	2.4%	42
Any drunkenness	389/2747	479/2662	0.80 (0.67-0.97)	3.8%	26
Frequent drunkenness	107/2747	170/2662	0.62 (0.47-0.81)	2.5%	40
Any cannabis	186/2792	260/2716	0.83 (0.65-1.05)	2.9%	34
Frequent cannabis	107/2792	162/2716	0.74 (0.53-1.00)	2.2%	46

*. Number of users out of the total number of students answering the question at follow-ups.

POR: Prevalence Odds Ratios (pooled interventions vs controls)

Multilevel model (RIGLS bin 1st order MQL) with 3 levels adjusting for centre prevalence of daily smoking and baseline status of the outcome

ARR: Absolute Risk Reductions were calculated using as prevalence rate of the intervention arm the product of the prevalence at follow-up among controls by the corresponding Prevalence odds ratios

Table 3. EU-Dap Stages of behaviour – Transitions in the intensity of **tobacco use in past 30 days**, from baseline to 18-month follow-up survey, by intervention arm

Intensity of use			18-MONTH FOLLOW-UP SURVEY			
			no use	occasional	daily	total (n)
Pooled intervention arms						
BASELINE	no use	%	83.3	<i>11.5</i>	<i>5.2</i>	2319
		95%CI	81.7-84.8	10.2-12.8	4.3-6.1	
	occasional*	%	<i>30.7</i>	28.6	<i>40.6</i>	192
		95%CI	24.2-37.3	22.3-35.0	33.7-47.6	
	daily**	%	<i>6.6</i>	<i>4.4</i>	89.0	91
		95%CI	1.5-11.7	0.2-8.6	82.6-95.4	
	total (n)		1996	326	280	2602
	Control arm					
BASELINE	no use	%	81.4	<i>12.4</i>	<i>6.2</i>	2209
		95%CI	79.8-83.1	11.0-13.8	5.2-7.2	
	occasional*	%	<i>25.7</i>	35.0	<i>39.4</i>	226
		95%CI	20.0-31.4	28.7-41.2	33.0-45.8	
	daily**	%	<i>7.3</i>	<i>4.9</i>	87.8	123
		95%CI	2.7-11.9	1.1-8.7	82.0-93.6	
	total (n)		1866	359	333	2558

* = Occasional use: till 20 times in past 30 days

** = Daily use: 20 times or more in past 30 days

Table 4. EU-Dap Stages of behaviour – Transitions in the intensity of **drunkenness episodes in past 30 days**, from baseline to 18-month follow-up survey, by intervention arm.

Intensity of use		18-MONTH FOLLOW-UP SURVEY			
		None	sporadic	frequent	total (n)
Pooled intervention arms					
BASELINE	none	87.3	9.5	3.2	2584
	95%CI	86.1-88.6	8.4-10.6	2.5-3.8	
	sporadic*	58.6	25.3	16.1	87
	95%CI	48.3-69.0	16.2-34.4	8.4-23.8	
	frequent**	59.3	18.5	22.2	27
	95%CI	40.7-77.8	3.9-33.2	6.5-37.9	
total (n)		2324	272	102	2698
Control arm					
BASELINE	none	85.0	10.5	4.5	2466
	95%CI	83.5-86.4	9.3-11.7	3.7-5.4	
	sporadic*	37.8	28.8	33.3	111
	95%CI	28.8-46.9	20.4-37.3	24.6-42.1	
	frequent**	29.3	24.4	46.3	41
	95%CI	15.3-43.2	11.2-37.5	31.1-61.6	
total (n)		2149	301	168	2618

* = Sporadic episodes: till 3 times in past 30 days

** = Frequent episodes: 3 times or more in past 30 days

Table 5. EU-Dap Stages of behaviour – Transitions in the intensity of **cannabis use in past 30 days**, from baseline to 18-month follow-up survey, by intervention arm

Intensity of use		18-MONTH FOLLOW-UP SURVEY			
		no use	sporadic	frequent	total (n)
Pooled intervention arms					
BASELINE	no use	94.4	2.6	3.0	2720
	95%CI	93.5-95.2	2.0-3.2	2.4-3.7	
	sporadic*	48.0	12.0	40.0	25
	95%CI	28.4-67.6	-0.7-24.7	20.8-59.2	
	frequent**	26.1	17.4	56.5	23
	95%CI	8.1-44.0	1.9-32.9	36.3-76.8	
total (n)		2585	78	105	2768
Control arm					
BASELINE	no use	92.4	3.5	4.2	2618
	95%CI	91.3-93.4	2.8-4.2	3.4-4.9	
	sporadic*	41.2	11.8	47.1	34
	95%CI	24.6-57.7	0.9-22.6	30.3-63.8	
	frequent**	25.5	4.3	70.2	47
	95%CI	13.1-38.0	-1.5-10.0	57.1-83.3	
total (n)		2444	97	158	2699

* = Sporadic use: till 3 times in past 30 days

** = Frequent use: 3 times or more in past 30 days

Discussion

Fifteen months after the completion of the program, exposure to *Unplugged* was associated with a significantly lower prevalence of episodes of drunkenness and marijuana use in the past 30 days. The estimated reduction was around 38% for drunkenness and of 26% for cannabis use, which puts our findings in line with the effective school-based programs that underwent a peer reviewed evaluation (Faggiano et al., 2005, Griffin et al., 2003). As for tobacco use, no significant effects were found even if the intervention appeared to be effective at least in preventing non-smokers from progressing toward initiation with cigarettes.

Thus, the effectiveness of the program on cigarette smoking appears to be short-lived and at odds with the effects observed on alcohol or cannabis abuse. In fact, the statistically significant 30% reduction in prevalence of daily use reported at the short-term follow-up (Faggiano et al., 2008) was no longer detectable during the second year of follow-up. This loss of effect is in some ways expected, since a previous well conducted large trial found even no effect at all (Peterson et al., 2000), and recent systematic reviews concluded that evidence of effectiveness is inconclusive and there is no evidence for long-term effectiveness of school-based interventions (Thomas and Perera, 2006, Muller-Riemenschneider et al., 2008).

Three explanations may be offered for the fading effect of the program on smoking.

- On the one side evidence is accumulating that dependence in adolescence can occur following sporadic use of tobacco and not with alcohol and cannabis (O'Loughlin et al., 2003, Kandel D et al., 1997).
- Secondly, at the age of the students in our sample, cigarette smoking may be a normative behaviour to a larger extent compared to episodes of drunkenness or using illicit drugs. This may be particularly true in Southern European countries, that accounted for the majority of the population enrolled in this study. A similar explanation was raised by Ellickson (Ellickson and Bell, 1990) for alcohol use in the United States, and indicates that other social influences may play down the effect of any program, in the medium or long-term.
- Thirdly, the intensity of this program may not compare with that of other successful programs included in the review by Thomas and Perera (2006). In particular, *Unplugged*, that can be described as a combined intervention since it encompasses some general competences to the social ones, did not include a systematic involvement of parents (Josendal et al., 1998, Spoth et al., 2002, Spoth et al., 2004) nor reinforcement sessions (Botvin et al., 1990, Botvin et al., 1995, Botvin et al., 1999, Sheier et al., 2001), two characteristics of the programs which could increase its effectiveness.

Contrary to the results on smoking, the program appeared to be associated with a prolonged decreased risk for episodes of drunkenness and for cannabis use, especially on a frequent monthly basis. Moreover, the analysis of the transitions between behavioural stages suggested that the program was effective both in hindering the progression of use and in facilitating regression toward less intensive patterns of use. These results are encouraging, since if there is some evidence of the effectiveness of social influence programs on cannabis use from systematic reviews (Faggiano 2005), the effect on alcohol use is less clear (Foxcroft et al., 2002). For example, in the 18 months evaluation of the ALERT study (Ellickson et al., 2003), the curriculum was effective on alcohol misuse (early drinkers) but not on alcohol initiation, and in a previous evaluation (Ellickson and Bell, 1990) the modest effect observed at grade 7th on alcohol was not sustained at longer follow-ups.

The sustained effect on drunkenness and cannabis use after one year from the completion of the program is of importance. In fact, the positive health consequences of delaying the onset of substance use should not be underestimated. There is evidence that earlier is the onset of alcohol and drug use, higher is the probability of lifetime drug addiction and alcoholism (DeWit et al., 2000, Pitkanen et al., 2005). The risk of alcohol dependence decreases of 14% with each increasing year of age at onset of use (Grant and Dawson, 1997), and that of drug dependence by 4% (Grant and Dawson, 1998).

A secondary objective of the study was to detect major contributions of the involvement of parents and class-peers to the effectiveness of the basic program. The low reach of these two activities, either due to low implementation (peer program), or to low attendance (parents' workshops), together with the limited size of each single arm can explain the absence of detectable effects of these additional components. It has already been noted that family-based universal prevention programs in Europe rarely achieve high intensity and parents' participation (Bauman et al., 2001, Cohen et al., 1995). As for the peer-led activities, they usually require high level of leadership, not common in this age group. Therefore, a disproportion between the target's age and the assigned task can be the main cause of poor implementation (van der Kreeft et al., 2009).

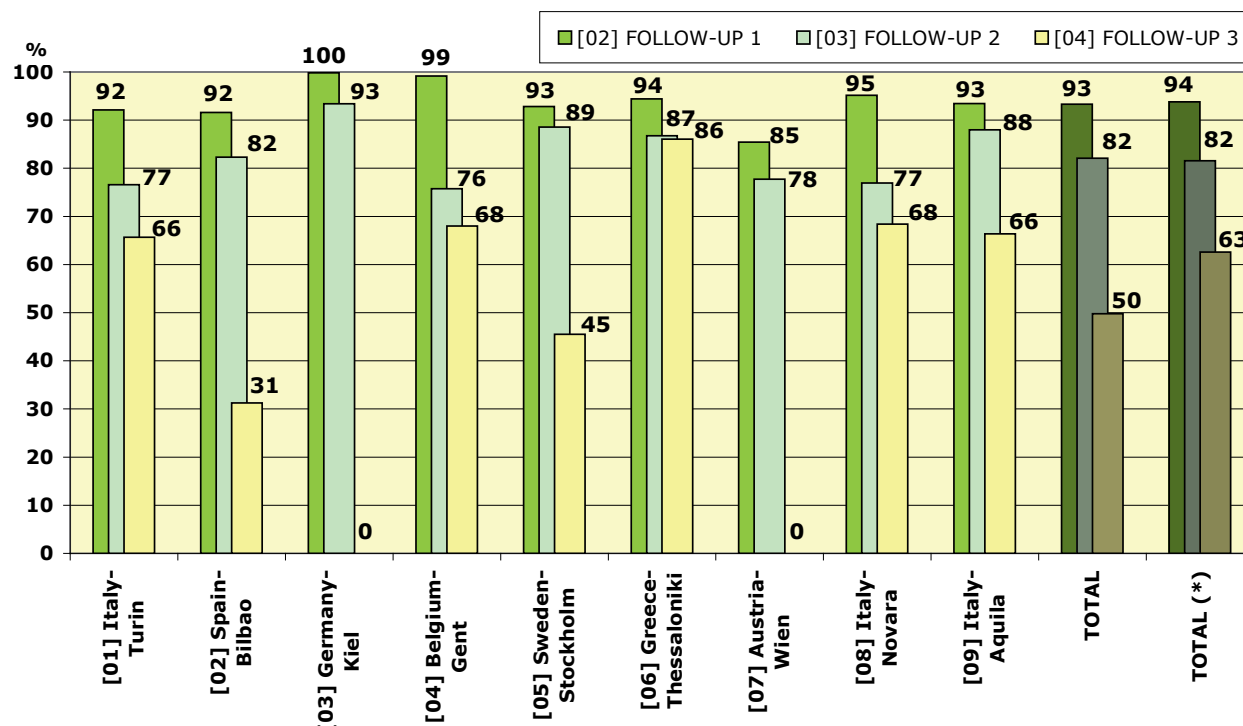
Even if the prevalence at follow-up of most of the behavioural outcomes was still low, the impact of the program, measured by NNTs, is encouraging and sustainable over time. In other words, implementing the program in one to two classes could prevent one case of alcohol abuse, as well as one case of cannabis use. The size of NNTs is comparable to that of several effective public health interventions, such as vaccination for flu, treatment of hypertension in the elderly and statins for primary prevention of myocardial infarction (<http://www.shef.ac.uk/scharr/ir/nnt.html>) which suggests a favourable cost-effectiveness, given the overall low expenditure of the program.

4.2. Preliminary results of the 3rd year follow-up (27 months follow-up)

The third follow-up was held in May 2007. Two centres did not participate: Germany, who did not participate in the EU-Dap2 study, and Austria, who could not contact the students anymore because of confidentiality constraints.

The participation rate at the follow-up surveys is shown in the Figure. Overall, including Austria and Germany, 50% of baseline students participated in the third follow-up. Excluding Austria and Germany, the two non-participating countries 63% of baseline students from the other 7 centres participated in the third follow-up study.

Students' participation rate (%) at follow-ups



The rate is quite low, especially when looking at the country specific rates: Spain and Sweden had respectively 31% and 45% of participation rate. In the other countries the participation was around 65%, apart from Thessaloniki where 86% of the original sample was surveyed.

To evaluate the effectiveness of the Unplugged program in reducing tobacco, alcohol and substance use, the same model used in the first and second follow-up was applied. The model included 3 levels (centre, class, student) and adjusted for centre prevalence of daily smoking and baseline status of the outcome. The results are shown in the following table. Effects on all types of substance use are not evident anymore. The results are consistent between the genders.

Adjusted Prevalence Odds Ratios of substance use in the past 30 days, 27 months follow-up (n=3413).

Indicator of use	n/N*	n/N*	Adj POR (95%CI)		
	Cntr	Int	All students	Boys	Girls
Any smoking	557/1624	551/1686	1,13 (0,93-1,38)	1,12 (0,86-1,48)	1,18 (0,92-1,53)
Frequent smoking	390/1624	371/1686	1,14 (0,92-1,40)	1,17 (0,87-1,57)	1,11 (0,83-1,47)
Daily smoking	298/1624	286/1686	1,13 (0,89-1,44)	1,06 (0,77-1,45)	1,19 (0,85-1,66)
Any drunkenness	354/1639	355/1702	1,02 (0,83-1,26)	1,07 (0,81-1,42)	0,94 (0,71-1,25)
Frequent drunkenness	129/1639	117/1702	0,92 (0,67-1,27)	0,94 (0,65-1,38)	0,75 (0,47-1,20)
Any cannabis	225/1667	178/1722	0,92 (0,74-1,14)	0,83 (0,59-1,15)	1,05 (0,73-1,50)
Frequent cannabis	144/1667	110/1722	0,93 (0,70-1,24)	0,92 (0,61-1,40)	0,88 (0,53-1,47)

* Number of users out of the total number of students answering the question at follow-up

POR, Prevalence Odds Ratios (all interventions vs control) estimated using multilevel model (RIGLS bin 1st order MQL with 3 levels adjusting for centre prevalence of daily smoking and baseline status of the outcome).

Restricting the analysis to centres with attrition rate lower than 40% (Torino, Gent, Thessaloniki, Novara, L'Aquila), the results did not change (data not shown).

While firm conclusions are hampered by loss of study power, the most likely scenario is that the effect of program seems to only last a couple of years. The result is not surprising, and completely in line with previous evaluations, nonetheless it is disappointing. Further research is needed to identify the most effective components of this kind of programs, in order to achieve long-lasting effects.

4.3. Intermediate analysis: factorial validity, test of cross-cultural invariance and preliminary analysis

The first step of the analysis of intermediate factors has been the construction of factors. In the light of literature and theoretic behavioural models, it's possible to classify the variables assessed by means of the Eudap Questionnaire as: (1) attitudes and beliefs, (2) social support, (3) school experience, (4) personal skills, (5) knowledge, and (6) intentions. Most of these variables (1 to 4) are multi-item scales, whereas the others (5 and 6) are single items.

Before using these variables as potential intermediate variables (i.e., predictors, moderators or mediators) of drug abuse behaviours and their changes, mainly induced by Unplugged intervention, two validation procedures are needed for all multi-item scales of the questionnaire.

1. Exploratory Factor Analysis (EFA). The a priori problems of the questionnaire structure is the absence of previous validation studies for several scales or alteration of items and scales as compared to originally validated sources. Thus, the first step was to validate the multi-item scales of the questionnaire by means of Exploratory Factor Analyses (EFAs). Since the original version of the questionnaire in English language was not used in any country, we decided to run the EFAs on the largest subsample (i.e., the Turin subsample).

In this way, we first tested the **factorial validity** of different sets of items, thus identifying what latent variables they measure. We used the extraction method of PCA and the 'varimax rotation' method to obtain the rotated component matrix. According to the large amount of literature reporting gender differences, all EFAs were performed separately for males and females.

Summary of EFAs results

On the whole, EFAs allowed to extract well identifiable multi-item scales with high factor loadings. In most sets of items, the factorial structure did not differ as a function of gender.

(1) *Attitudes and beliefs.* Items measuring attitudes to drug use have a two-factorial structure (positive vs. negative attitudes). Items measuring beliefs on consequences of cigarettes, alcohol, and drug use have a two-factorial structure (perceived costs vs. perceived benefits) and a three-factorial structure only in the case of females' beliefs on consequences of cigarettes use (with perceived costs being further differentiated in social and dependence costs).

(2) *Social support.* This set of items, which was heavily modified from the original source, allows now to identify a scale of parental support and a separate item reflecting friends' support. From the 20-item Family Life Questionnaire', 15 items were pooled into to four main scales reflecting 'positive relations', 'absence of control', 'peace climate', and 'family rules'.

(3) *School experience*. This set of items is pooled into two factors representing perceived ‘emotional class climate’ and ‘orientation to academic achievement’, respectively.

(4) *Personal skills*: general self-esteem and self-efficacy in decision making skill, resistance skill, communication skill, and assertiveness. The items of self-esteem and decision making skill, they loaded on two factors, identifiable as high and low self-esteem or decision making skill, respectively. However, gender differences exist for the decision making skill, with item c belonging to the ‘high skill’ scale in males, but to the ‘low skill’ scale in females. The resistance skill items have a mono-factorial structure, whereas the communication skill items are mono-factorial for males, but two-factorial for females (with factors representing ‘empathetic communication skill’ and ‘assertive communication skill’, respectively). The set of items measuring assertiveness presented several problems concerning score attribution and face value of items and could not reveal any significant factorial structure. The only reasonable solution for further analyses is to use single item scores as potential predictors for testing assertiveness influence on drug abuse behaviour.

2. Confirmatory Factor Analysis (CFA). When translating a questionnaire into different languages, as in the case of the EUDAP questionnaire, the equivalence of the factor structure and factor loadings across centres must be tested. The usual procedure of translation in (and back-translation from) languages different from that of the originally validated version ensures the correctness of the translation itself. However, it cannot ensure that all data from different countries fit in the factorial structure as well. To this aim, CFAs were run for the subsamples of all EUDAP centres except of the Turin centre, whose subsample was first used to identify the basic factorial structure.

Only after verifying the **multigroup factorial invariance**, that is after performing a **cross-cultural validation**, we are allowed to use the variables of interest to identify what are the predictors/moderators of drug abuse across centres.

All the CFAs have been performed separately for males and females of each centre by means of AMOS (SPSS) software. Thus, 2 (males, females) x 8 (centres) CFAs analyses were run for the same 11 multi-item scales that were previously submitted to EFA for the Turin’s subsample, for a total of 171 CFAs.

In all CFAs, the factorial validity of the scales structure found in the Turin subsample was assessed using structural equation modelling (SEM). Evaluation of goodness-of-fit of each model was based on consideration of three model fit measures: (1) the chi-square minimum fit function test which is an inferential test of the plausibility of the model, (2) the Root Mean Square of Approximation (RMSEA) which expresses the lack of fit, and (3) the Comparative Fix Index (CFI) which assesses model fit relative to a null model using non-centrality parameters.

For good-fitting models, the chi square must be not significant; since, however, the chi square statistic is sensitive to sample size, the large sample used in the present study renders the chi square test alone inappropriate. Thus, also RMSEA and CFI indices were considered. According to the literature, following values can be considered threshold values for very good, acceptable or poor fit:

Goodness-of-fit	very good	acceptable	poor
RMSEA	≤ 0.06	0.06 – 0.10	> 0.10
CFI	≥ 0.95	0.90 – 0.95	< 0.90

Summary of CFAs results

On the whole, CFAs demonstrated that the factorial structure of the multi-item scales first identified for the Turin subsample holds for all other centres.

Most of the analysed scales (believes on consequences of cigarette use, believes on consequences of alcohol use, attitudes to drug use, parental support, and school attitudes) showed an acceptable to very good fit. Therefore, they are validated and can be undoubtedly used as predictors/moderators of substance use for further analyses merging data from different centres.

However, some other scales did not show an acceptable fit in several centres, above all in the female subsamples. Therefore, inspection of modification indices (MIs) was performed to understand whether the lack of goodness-of-fit was primarily due to correlated error variance terms or to cross-loading items. This distinction is crucial because a consistent presence of items loading on more than one factor should render the scales invalid.

The inspection of MIs revealed, in almost all cases of poor fit, some abnormally large values representing error covariances between items. Despite common findings of correlated error variance terms, there remains considerable controversy in the CFA literature regarding their interpretability, since model specification that forces all error terms to be uncorrelated is rarely appropriate with real data. We can consider that incorporation of these correlated error terms into CFA models does not undermine the factorial validity of the considered scale, but rather, it provides a more realistic factorial representation of the observed data structure. Given this theoretical justification, we incorporated correlated error terms into the models, when needed, and obtained an acceptable fit. The only difference in the factorial structure obtained with the first EFA (Turin centre) and the successive CFAs (all other centres) concerns the presence of a cross-loading item within the ‘absence of control scale’ of the Family Life Questionnaire. The elimination of this item produced a significant enhancements of model fit for several centres.

Finally, the only set of items which could not be submitted to CFA was that of the resistance skill scale. Since this scale is composed of only 3 items, CFA iterative processes could not be run. However, the very simple structure and very high factorial weights in the EFA, should allow to merge data from different centres and to use this scale as a predictor/moderator of substance abuse.

3. Analysis on mediators of effect. For a better understanding of the mechanisms of effect, trying to identify effective components of the program, it is important to perform mediation analysis. Various steps have to be followed to reach the final “mediation analysis”.

The first step is to identify possible factors mediating the effects and code the variables measuring them, as described in the sections above.

A second task is to identify from the theories on which the program was built the theoretical model describing the factors addressed by each unit.

The second step is to understand on which factors the program works. It is in fact needed that the program works on the factor for the factor to be a mediator. This objective was investigated applying multilevel model to mediators variables, adjusting for the baseline level of the mediator, similarly to the main analysis on behavioural outcomes.

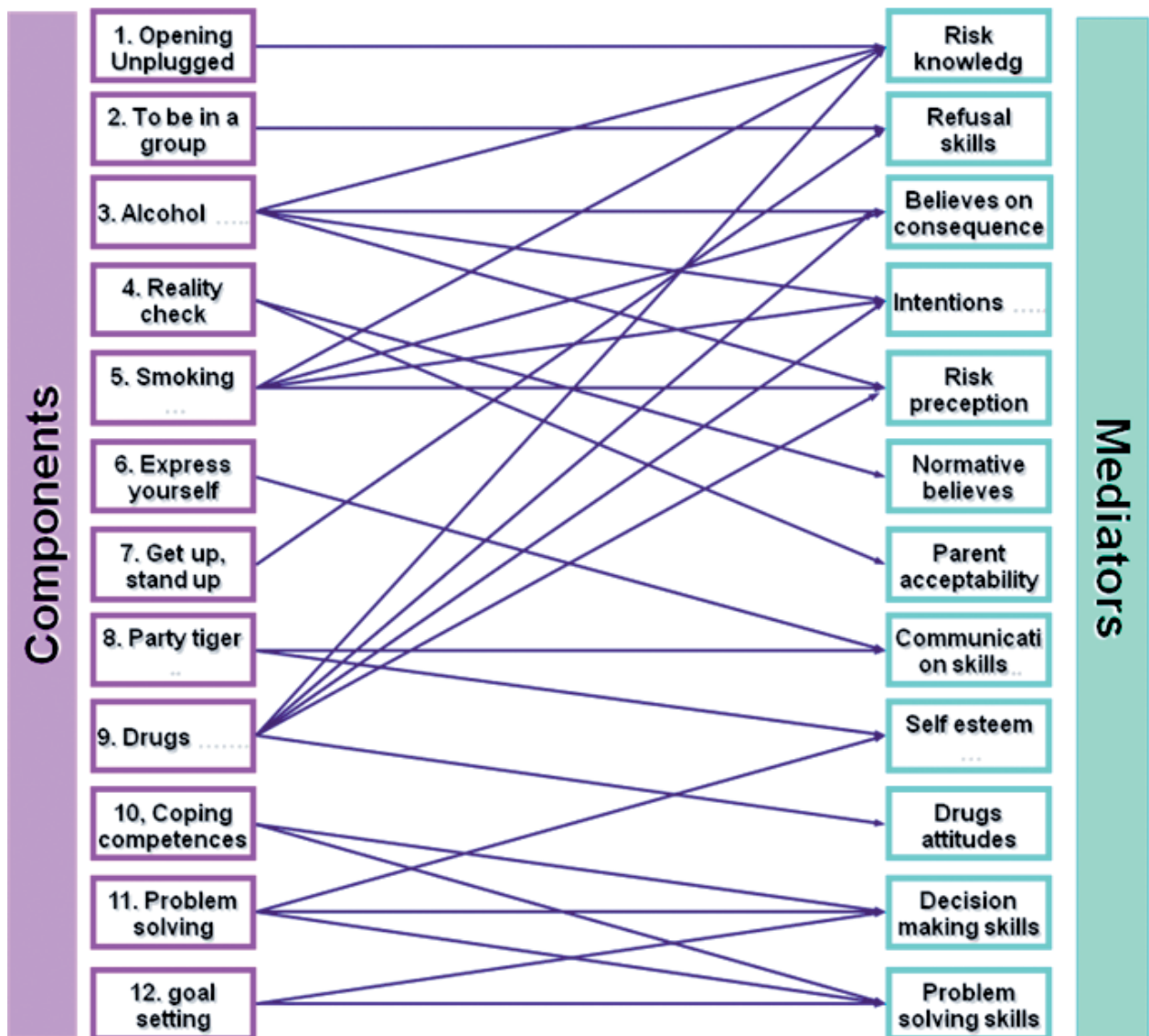
The third step, mediation analysis, was only preliminarily analyzed introducing the mediators in the effectiveness model and estimating the changes in the significance of the model. This is a simple model of analysis, but is only preliminary and probably it will be needed to find a more appropriate and complex model for this step.

Results

The theoretical model is described in Figure 3.

The analysis of the effect of Unplugged on the mediators showed that the program improved refusal skills toward cigarettes and alcohol, reduced positive expectancies towards cigarettes, alcohol, and cannabis, and reduced positive attitudes towards illegal drugs (see the following table).

Figure 3. Theoretical model describing the mediators addressed in the 12 Unplugged units.



Adjusted Prevalence Odds Ratio of Unplugged effect on the mediators - 1st follow-up vs baseline (n=6370), intervention vs control pupils.

Mediator	Adj POR (95%CI)	Possible mediators of effect
Intentions to smoke cigarettes	0.85 (0.72-1.01)	
Intentions to drink alcoholics	0.93 (0.80-1.09)	
Intentions to get drunk	0.96 (0.81-1.14)	
Intentions to smoke cannabis	0.87 (0.70-1.09)	
Intentions to take illegal substances	0.85 (0.67-1.08)	
Refusal skills to smoke cigarettes	1.18 (1.01-1.39)	on daily cigarette use
Refusal skills to drink alcohol	1.18 (1.02-1.37)	on drunkenness episodes
Refusal skills to use cannabis	1.10 (0.92-1.31)	
Decision making skills	0.98 (0.88-1.09)	
Communication skills	0.91 (0.79-1.04)	
Positive expectancies toward cigarettes	0.80 (0.69-0.92)	on drunkenness episodes on cannabis use
Positive expectancies toward alcohol	0.83 (0.72-0.96)	
Positive expectancies toward cannabis	0.82 (0.72-0.94)	
Normative beliefs/friends smoke cigarettes	1.02 (0.84-1.23)	on cannabis use
Normative beliefs/friends get drunk	0.91 (0.76-1.09)	
Normative beliefs/friends use cannabis or other drugs	0.81 (0.65-1.01)	
Cigarette perception of harm	1.01 (0.84-1.22)	
Alcohol perception of harm	0.97 (0.82-1.16)	
Cannabis perception of harm	1.11 (0.89-1.39)	
Positive attitudes toward illegal drug use	0.82 (0.67-1.00)	on daily cigarette use, on drunkenness episodes, on cannabis use

*POR, Prevalence Odds Ratios (intervention vs control) estimated using multilevel model 3 (RIGLS bin 1st order MQL with 3 levels, adjusted for centre prevalence of daily smoking and baseline value of the outcome.

For cigarettes, when including refusal skills towards cigarettes and positive attitudes towards illegal drugs, the model loses significance, indicating a mediation effect of these two factors.

For drunkenness, the model loses significance when including refusal skills and positive expectations towards drinking and positive attitudes towards illegal drugs.

For cannabis, the model loses significance when including normative beliefs on cannabis, positive expectations and positive attitudes towards illegal drugs.

Conclusions

The effectiveness of the program seems mediated by refusal skills for cigarettes and alcohol, by expectations for alcohol and cannabis, by normative beliefs for cannabis and by attitudes towards illegal drugs for all substances.

4.4. Subgroup analysis: gender differences in Unplugged effectiveness

Gender stratified analysis of the effectiveness of the program showed a significant association between program and lower prevalence of all behavioural outcomes among boys, but not among girls (table 1).

From the literature, gender differences in substance use are well known, including age of start, pattern of use, risk factors, access to treatment, and even treatment effectiveness (EMCDDA 2006, Stocco 2000). However, concerning primary prevention, few studies systematically investigated gender differences in the effectiveness of interventions, and when differences have been found, the general evidence was in favour of an apparent higher effectiveness among girls (Blake 2001). Limiting the evidence to school-based interventions, we found however that the findings were actually rather mixed: three out of five of the programs effective on males were based on the social influence approach (Oslo Youth Study (Klepp 1993), North Karelia Youth Programme (Vartiainen 1998) Project Towards No Drug Abuse (Sussman 2003)), as well as Project SMART (Graham 1990) and ALERT Plus (Longshore 2007), more effective among girls.

We therefore investigated possible explanations for the observed differences in the effectiveness of Unplugged program on males and females (Vigna-Taglianti 2009).

Methods

The statistical analysis was conducted according to the methods used in the main analysis and papers. Eight non mutually exclusive outcome variables were created, with reference to the 30 days preceding the survey: i) any cigarette smoking (at least one cigarette); ii) frequent cigarette smoking (six or more cigarettes); iii) daily cigarette smoking (20 or more cigarettes); iv) any episode of drunkenness (at least one episode); v) frequent drunkenness (three or more episodes); vi) any cannabis use (at least once); vii) frequent cannabis use (three or more occasions); viii) any illicit drug use, (use of any illicit drug, including cannabis). All outcome variables were analyzed as dichotomous (yes/no).

Prevalence Odds Ratios (POR) and their corresponding Confidence Intervals (95% CI) were calculated as measure of association between experimental conditions (all intervention arms pooled together) and behavioural outcomes, separately by gender.

In order to take into account the hierarchical structure of the data and the cluster effect, a multilevel modelling approach was followed in the analysis of the data, using MLwiN 2.02 software (Murray 2004, Rasbash 2004). Multivariate multilevel models were fitted using three grouping levels: centre, class and students. Differences in prevalence of use between centres were adjusted for by including in the model the baseline centre prevalence of current daily smoking, defined as smoking 20 or more cigarettes in the last 30 days. Finally, all estimates were adjusted by individual baseline behaviour of the corresponding outcome.

We also conducted a tabular analysis comparing intervention and control group, separately by gender, as regards to the proportion of students who at the end of follow-up had transitioned to higher (progression) or lower (regression) frequency of use of tobacco, alcohol, and drugs. For

this analysis, mutually exclusive categories of use were employed: a) non smoker (no cigarette smoking in the past 30 days); b) occasional smoker (1-19 cigarettes in the past 30 days); c) daily smoker (20 or more cigarettes in the past 30 days); d) no drunkenness (no episodes of drunkenness from alcohol drinking in the past 30 days); e) drunkenness (one or more episodes of drunkenness in the past 30 days); f) no cannabis use (no cannabis use in the past 30 days); g) cannabis use (use of cannabis in one or more occasions in the past 30 days).

Main results

At enrolment, boys were more likely than girls to have used cannabis (4.2% vs 2.4%, $p<0.001$) and illicit drugs (5.6% vs 4.1%, $p=0.005$) at least once in the past 30 days, while girls had a higher prevalence of any cigarette smoking in the past 30 days (15.9% vs 12.7%, $p<0.001$). The proportion reporting recent episodes of drunkenness was slightly higher among males, but the difference was not statistically significant ($p=0.07$). Also, at baseline more boys in the control group were current users of all substances than boys in the intervention group, while this imbalance was not seen among girls.

At baseline, a lower proportion of girls scored high on the positive self-esteem score (83.2% vs 87.7%, $p<0.001$). On the other hand, no appreciable gender differences were seen concerning positive expectations towards smoking, while boys endorsed more often than girls positive expectations towards alcohol (“feel relaxed”: 21.2% vs 18.5%, $p=0.008$, “become more popular”: 17.3% vs 14.7%, $p=0.005$) and cannabis (“feel relaxed”: 41.8% vs 37.5%, $p=0.001$, “become more popular”: 21.4% vs 18.6%, $p=0.006$).

On the follow-up survey conducted three months after the completion of the experimental school curriculum, significant program effects with decreased risks in almost all indicators of substance use were observed among boys (Table 6). Among girls, there was an indication of decreased risk of frequent drunkenness in the past 30 days, but the estimate did not attain the statistical significance.

Table 6. Adjusted Prevalence Odds Ratios of substance use in the past 30 days among boys and girls, the EU-Dap Study short-term follow-up, May 2005.

Indicator of use	Boys			Girls		
	n/N* Cntr	n/N* Int	Adj POR (95%CI)	n/N* Cntr	n/N* Int	Adj POR (95%CI)
Any smoking	304/1509	220/1563	0.88 (0.66-1.18)	300/1453	276/1412	0.86 (0.65-1.15)
Frequent smoking	211/1509	126/1563	0.68 (0.50-0.93)	175/1453	171/1412	1.07 (0.74-1.55)
Daily smoking	159/1509	80/1563	0.49 (0.34-0.71)	117/1453	113/1412	0.99 (0.64-1.52)
Any drunkenness	209/1548	136/1623	0.64 (0.49-0.85)	143/1501	117/1456	0.86 (0.63-1.18)
Frequent drunkenness	80/1548	51/1623	0.68 (0.45-1.04)	39/1501	25/1456	0.66 (0.37-1.18)
Any cannabis	161/1596	88/1668	0.62 (0.45-0.85)	63/1528	64/1478	1.05 (0.70-1.58)
Frequent cannabis	106/1596	54/1668	0.60 (0.40-0.91)	30/1528	34/1478	1.17 (0.59-2.33)
Any illicit drug	194/1615	115/1686	0.64 (0.48-0.86)	97/1534	107/1495	1.40 (0.95-2.04)

* number of users out of the total number of students answering the question at follow-up (multilevel adjusted model).

° POR, Prevalence Odds Ratios (intervention vs control) estimated using multilevel model 3 (RIGLS bin 1st order MQL with 3 levels, adjusted for centre prevalence of daily smoking and baseline use of the corresponding substance.

Some gender differences were found concerning the transitions between different stages of substance use from baseline to follow-up. Among boys, the proportion progressing to more advanced stages of smoking was lower among those who received the experimental curriculum compared to controls, while the proportion regressing was higher. Among girls a similar but less pronounced pattern was observed. Daily smokers were not affected by the intervention in either gender, but among girls a higher proportion of the control group regressed from daily use, compared to the intervention group. Similar patterns emerged in the use of other substances: delayed progression and enhanced regression were higher in the intervention group among boys, while no, minimal or reverse differences were observed among girls.

When the gender-specific estimates of program effect were analysed in separate strata of the self-esteem indicator, some differences emerged (Table 7) although based on not statistically significant estimates. Among boys, level of self-esteem did not substantially affect the curriculum effect seen in the whole group. Among girls, the program was rather associated to a tendency towards unfavourable effect in the group categorized as having low self-esteem.

Table 7. Adjusted Prevalence Odds Ratios of substance use in the past 30 days among boys and girls, by level of self-esteem.

Indicator of use	Boys		Girls	
	High self-esteem N=2741	Low self-esteem N=385	High self-esteem N=2422	Low self-esteem N=488
	Adj POR (95%CI)	Adj POR (95%CI)	Adj POR (95%CI)	Adj POR (95%CI)
Any smoking	0.76 (0.55-1.04)	1.23 (0.61-2.50)	0.85 (0.62-1.16)	0.70 (0.39-1.26)
Frequent smoking	0.62 (0.45-0.87)	0.70 (0.27-1.80)	1.04 (0.69-1.57)	0.92 (0.43-1.97)
Daily smoking	0.46 (0.30-0.68)	0.56 (0.20-1.58)	0.86 (0.53-1.40)	1.35 (0.63-2.87)
Any drunkenness	0.69 (0.50-0.94)	0.58 (0.29-1.17)	0.83 (0.58-1.19)	1.23 (0.66-2.29)
Frequent drunkenness	0.71 (0.43-1.14)	0.75 (0.25-2.19)	0.59 (0.31-1.12)	1.71 (0.49-5.92)
Any cannabis	0.63 (0.43-0.91)	0.43 (0.20-0.92)	0.89 (0.58-1.37)	1.83 (0.66-5.06)
Frequent cannabis	0.62 (0.39-1.00)	0.42 (0.16-1.09)	0.74 (0.38-1.43)	2.14 (0.58-7.95)
Any illicit drug	0.68 (0.48-0.97)	0.35 (0.18-0.71)	1.27 (0.88-1.85)	1.59 (0.78-3.22)

* POR, Prevalence Odds Ratios (intervention vs control) estimated using multilevel model 3 (RIGLS bin 1st order MQL with 3 levels, adjusted for centre prevalence of daily smoking and baseline use of the corresponding substance.

In a separate analysis by gender and age group (Table 8), non statistically significant associations with risk reduction for the exposed to the experimental curriculum compared to controls were found for frequent and daily smoking, as well as for recent drunkenness, among girls in the youngest age group (11-12 years at baseline), while among boys the associations were similar in both age groups.

Table 8. Adjusted Prevalence Odds Ratios of substance use in the past 30 days among boys and girls, by age.

Indicator of use	Boys		Girls	
	11-12 years N=842	13-18 years N=2482	11-12 years N=781	13-18 years N=2254
	Adj POR (95%CI)	Adj POR (95%CI)	Adj POR (95%CI)	Adj POR (95%CI)
Any smoking	1.27 (0.57-2.85)	0.81 (0.59-1.10)	0.78 (0.45-1.34)	0.84 (0.63-1.13)
Frequent smoking	1.17 (0.40-3.46)	0.63 (0.45-0.87)	0.52 (0.23-1.21)	1.21 (0.83-1.77)
Daily smoking	1.41 (0.35-5.75)	0.41 (0.28-0.61)	0.45 (0.18-1.13)	1.19 (0.77-1.85)
Any drunkenness	0.56 (0.25-1.28)	0.63 (0.48-0.83)	0.44 (0.19-1.04)	0.94 (0.68-1.29)
Frequent drunkenness	0.53 (0.13-2.24)	0.69 (0.46-1.04)	0.70 (0.16-3.01)	0.65 (0.37-1.16)
Any cannabis	0.60 (0.16-2.31)	0.61 (0.44-0.86)	§	1.15 (0.77-1.71)
Frequent cannabis	§	0.62 (0.40-0.95)	§	1.19 (0.62-2.27)
Any illicit drug	0.90 (0.36-2.23)	0.61 (0.45-0.83)	1.03 (0.47-2.28)	1.42 (0.98-2.06)

§ the model did not converge because of the low number of observations

* POR, Prevalence Odds Ratios (intervention vs control) estimated using multilevel model 3 (RIGLS bin 1st order MQL with 3 levels, adjusted for centre prevalence of daily smoking and baseline use of the corresponding substance).

Discussion and conclusions

The analysis indicated a greater preventive potential of the curriculum among boys, consistent across diverse geographical locations.

This finding was somewhat unexpected, since the new generations of programs based on the enhancement of social skills are generally considered more effective, if anything, among girls than among boys (Blake 2001).

Among the hypotheses investigated to explain the observed difference, two appeared more plausible when performing subgroup analysis. First, the developmental stage of the two genders in terms of general life skills and coping mechanisms may differ, given attained age (Amaro 2001, Hess 1999). At the same age the acquisition of skills and competences may still be susceptible to modifications among boys, less so among girls. In fact, females must cope with puberty-related social and emotional changes at an earlier age (Hess 1999). Consistently, we found indications that the program may have been effective among very young girls (11-12 years old), while the effectiveness among boys did not differ by attained age. Second, boys and girls may differ in mediators of programs' effects, such as personality characteristics and expectations towards substances. In our study, an indicator of self-esteem seems to have a different modifying effect on program's effectiveness in the two genders, indicating that girls with low self-esteem had the least benefit from the program.

A differential gender effect linked to self-esteem would not be surprising. In fact, there is some evidence that lack of self-esteem can be a stronger risk factor for drug use among girls than among boys (Crump 1997, Amaro 2001). Theoretical models (Sale 2003) suggest that girls are more influenced by family protective factors, while boys are more influenced by school or community environment. Among girls, self-esteem is strongly dependent on a positive relationship with parents (Kumpfer 2008). The emphasis on self-esteem is justified by the fact that this is not a key element of social influence programs, that focus on normative beliefs and on social and personal skills. It

is therefore possible that the Unplugged curriculum, heavily relying on the development of social skills, was not able to deal with lack of self-esteem.

In conclusion, our findings suggest that school curricula based on comprehensive social influence against substance misuse may perform differently among girls and boys, possibly due to developmental and personality factors. Adding gender specific components to such programs and for anticipating their delivery in early grades of the compulsory school could increase their overall effectiveness, but this possibility must be formally evaluated.

4.5. Final considerations on the Cluster Randomised Controlled Trial

Eu-Dap is a *cluster randomized controlled trial* (CRCT) – i.e. the entire school is randomly assigned to an intervention arm, although the individual remains the unit of analysis. This procedure reduces the effective sample size, since the outcome correlation within a cluster (class or school) can be expected to be higher than the correlation between clusters. But it allows to evaluate the individual effect of interventions delivered at the group level, like the school-based interventions and many others in the field of public health.

The study design is reasonably simple, but it obliges to increase the sample size and to carry out large studies, usually with the involvement of many centers. The conduction of large multicentre CRCTs increases the complexity of the study, mainly because it is hard to ensure a comparability between arms. The variation between schools, classes and centers is not easy to manage at the level of analysis. In the EU-Dap database, for example, there was an imbalance in the baseline prevalence of substance use that, during the first phases of the analysis, threatened the validity of the results. After many attempts, it was discovered that this was completely attributable to the contribution of a single large control school of one centre, with very high prevalence of substance use. The careful assessment of the influence of this school, together with a set of sensitivity analysis, confirmed the validity of the results of the study.

The analysis of the short and medium term of the assessment have been published in international journals (Faggiano 2008, Faggiano 2010), and this had a large impact in the scientific community, as well as among practitioners.

It is clear that the credibility of the *Unplugged* program depends largely on the validity of the evaluation results. Given the final results and the availability for all the European countries of a prevention program rigorously evaluated, the effort of the study can be considered worthy.

5. Work package 5: material amendments

The EU-Dap I project suggested that amendments in the intervention materials were needed. These consisted in the guidelines with instructions for the 12 “Unplugged” lessons, the introduction for the teacher with annexes to copy for the pupils, the instructions for the peer-to-peer meetings and for the parent evenings.

5.1. Why did we change the Unplugged materials?

Resources

The need for change of the intervention materials was assessed by:

- Interpretation of study results of the EU-Dap trial
- Monitoring process evaluation data from the EU-Dap I project
- Assembling process data at local follow up meetings
- Context information gathered by EU-Dap centres from schools & teachers
- Ongoing research, literature review and good practice publications

Principles for the Intervention Planning Group

The main principles the IPG followed were:

1. Not to change the intervention too much; we were concerned that too much difference between the baseline intervention and the amended version might endanger the effectiveness. Peer review in the EU-Dap coordination group was the instrument to monitor this.
2. Not to change the objective for each lesson, apart from improvement of the wording.
3. To keep the basic arm.

5.2. Methodology

The EU-Dap team decided at the kick-off meeting to delegate an Intervention Planning Group for the production of a changed standardized set of intervention materials, to be used in the Implementation Guide trial. Time was short, with a deadline of June 30 2007, 14 months after start of the project. The IPG consisted of Sara Sanchez (Sweden) Maro Vassara (Greece), Lotta Jansson (Sweden), Maria Scatigna (Italy), Caterina Pesce (Italy) Michal Miovsky (Czech Republic), Peer van der Kreeft (Belgium).

Intervention planning group reporting to the SCG coordination group

The IPG organized two working meetings and intensive e-mail correspondence between the 6 members from different EU-countries. It submitted the intermediate results for peer-review to the project coordination group, where all EU-Dap partners were represented. The tasks were divided between the IPG-members for amendment. The final proposition was submitted for approval to the SCG project coordination group.

Methods to assemble context information

Assembling context information or opinions from teachers after the study trial was made by some of the participating centres. Methods that were used were:

- monitoring process evaluation data from the EU-Dap I project (main source)
- interviewing the teachers when they finished implementing the program
- answers to open questions gathered during the monitoring
- focus group with 12 teachers
- meetings with teachers once a month
- 17 face to face meetings with teachers
- a follow-up meeting. Notes summary for revision
- two focus groups including a curriculum consultant participation

Importance of peer review by project coordination group

The peer review by the SCG project coordination group was of essence, because the centre leaders represented there also had experience and contact with implementing teachers in their countries, so it was a confrontation with not only more abstract thinking, but also with different practical situations. The first review of intermediate results from the IPG group for example delivered consistent feed back:

- The proposed changes in some lessons led the materials too far away from the original concept
- The problem of time limitation that appeared in monitoring data were not solved adequately by the intermediate version
- Introducing programme delivery by physical education teachers as an actual programme module is too distant from the baseline delivery design and should be limited to an optional suggestion

Stages of changing national versions

Once the final version was distributed, the separate partners could start to translate this in their various languages. This was done in five stages:

- translation
- adaptation
- layout version
- publication on the web
- printing

5.3. General changes in the materials

1. The homework was reported to be carried out to a minimal extent or not at all, therefore it was decided to skip it in the instructions.

2. The closing games were reported not to be appropriate in some cases. We decided to propose them as possibility and to add instructions referring to a choice list with energizer games.
3. Each lesson needed an introduction with a short rationale for the teacher, later in the process we decided to add such a rationale in an even more popular form in the pupils' workbook.
4. We changed the instructions so that teachers could organise the lesson within the time suggestions. But we also added a comment that in the beginning of implementation a teacher will normally spend more time to a lesson than the second or third time he/she delivers the programme because he will be more acquainted and more at ease.

5.4. Changes in the introduction for the teacher

Concept rational

Add in-depth explanation of the *normative belief* concept and the CIS *Comprehensive Social Influence* concept.

Physical Education or Physical Activities

The IPG spent considerable time on the question whether we would specifically focus on the role of physical activity teachers in the implementation of Unplugged. Some successful experiences in the L'Aquila region confirmed this possibility. We finally judged however, that this was not congruent with the guideline to stick as close as possible to the baseline versions. We added a more general statement on the type of teachers to be involved putting teachers of physical activity as an example.

Relation to life skills

We replaced general chapters on life-skills education by a popularized text based on a descriptive article on intervention. This included: addiction determinants, evidence base components, rationale of the comprehensive social influence model, explanation on the EU-Dap trial, a historical view on EU-Dap development. We kept the list of life-skills and the note of normative education and included the outcome results of the study.

Pedagogic and educative instructions for teachers

Considering teaching techniques, the IPG replaced tips on brainstorm and role-play by more general and comprehensive methodological principles on group dynamic, creating a safe climate, the essence of interactivity, involving the school team and parents plus a note that lack of previous experience should not be a restraint. We addressed the concerns raised by some teachers that components of the program could elicit emotional responses among the students. This was incorporated in a bit of methodology on teacher-led discussion.

5.5. Changes in the materials format and design

A new material component: pupils's workbook

The copy pages for pupils were found to be not user-friendly. The IPG group bundled the copy pages in a pupils' workbook and had it designed in a four-colour format, to be printed as a 28-page A4-booklet.

More standardized programme delivery

The pupils' workbook would also prevent teachers from delivering as copy-pages for pupils information on substances that was intended for teachers own use. This was reported to have occurred in several instances. A pupils' workbook guarantees a more standardized delivery, also because pupils have the chance to react if the teacher leaves out a section or adds some other concepts.

Cost of materials and website availability

We considered the cost of such four colour materials in the dissemination stage and judged that in the situation of wide implementation the printing cost would be limited. In our judgement we took into account that the digital version of the materials are always available at the eudap.net website. This confirms the concept that the material produced in this project is public domain.

Colour code in quiz card to facilitate adjustment to class group

The cards for the quiz were also re-designed and made ready to print. In the design of the cards a colour code was built into allow the teacher to include or exclude questions on specific products, for instance heroin or glues and other sniffing compounds if they felt this information was irrelevant. We calculated that a class would need 1 to 3 packages of quiz cards to easily organise the game.

A unique teacher manual

The introduction, annexes for teachers and instructions for the lessons were bundled in one 60-page A4-booklet in a black-and-white version. Illustrations and lay-out were standardized for all the materials.

Single design and local use

The design was made in a professional format and based on the English version. Each participating country (and all interested parties afterwards) could download this designed version in such a format that the translated version of the text fitted easily in. The SCG did not oblige every country to use the same layout, but because of the practical usage all partners took it over. The IPG did instruct the designers to avoid culture-specific elements and this obviously worked. The Italian partner, and in a later phase of dissemination, centres in Kyrgyzstan and Croatia made minor changes to the characters in the layout.

5.6. Changes in the Unplugged lessons

Reasons to change the order of the 12 Unplugged lessons

We restructured the order of the lessons based on the criticism that beginning the program package with knowledge and attitude lessons put a too heavy emphasis on the information on substances. Also it was noted that lessons originally taught later in the programme gave greater opportunity to facilitate a positive group climate in class. From a theoretical basis we considered starting with intrapersonal skills, followed by interpersonal skills and consequently knowledge and attitudes. When we looked more in detail to the objectives and required starting situation for some of the lessons however, we noticed that some activities within knowledge and attitudes require a problem-

solving base, some interpersonal skills should be built upon improved self-esteem, and some interpersonal skill exercises require an introduction about knowledge and attitudes.

Drop clustering the lessons in three categories

This led us to the conclusion to omit grouping the lessons in homogeneous categories as to the targeted skills. Giving (1) more weight to the group-dynamic process building confidence in the class group, (2) recognizing that some lessons were more difficult to be taught in the starting phase and (3) considering logic progression we constructed a new order of delivery of the twelve lessons, while keeping a clear indication to the teacher on category of skills the lesson addresses. This does not change the content or concept of the programme and only serves the purpose of better implementation and more standardized delivery.

Standardized structure within each lesson

We standardized the structure for each lesson as follows:

- a) Rationale: What is the lesson about, why is it important, what evidence is there?
- b) Objective (stays the same)
- c) Time limitation constraint within 50 minutes
- d) What you need (material) and class arrangement in lesson plan
- e) Possible difficulties (comments to other teachers)
- f) Activity (for each unit):
 - a. objective / situation
 - b. Instructions (step by step)
 - c. Suggestions for phrasing
 - d. Introduce / comment
- g) Parallel instructions in student work book

It would lead us too far in this report to list all changes in the lessons, the simple comparison of the old and new version offers a clear impression of the amendments and improvements.

5.7. Particular changes in the information on the cards.

Technical improvements

We fine-tuned the structure of each questions with strictly close response alternative: yes/no or an ABCD-choice.

In some of the cards we reduced the volume of the explanation of the correct answer. We broadened the scope of some of the explanations to triggers for discussion.

More arguments to correct misconceptions and normative beliefs

We reduced the number of questions and answers referring only to physical health on long term or fatality consequences of substance abuse. We increased questions and answers referring to false

ideas on social effects, aesthetic effects, arguments concerning money, ethics or ecology. These amendments were founded on the importance to correct the *normative belief*, revealed by the EU-Dap intervention evaluation. In the quiz game a small group of pupils asks a few yes or no questions to another group and discuss the answers between each other. It delivers them not the mere effect/risk drug information that many teachers and pupils expect from such activity. The cards correct misconceptions and false information that 12-14 year old boys and girls have, building their opinion and attitude towards drug abuse. We found that the non-long term physical health arguments in this process are more effective, and emphasized this type of text blocks in the cards.

5.8. Considerations

Science meets practice

Unplugged is a twelve-lesson school-based intervention that prevents the early onset of legal or illegal drug use as well as the transition from experimental to frequent drug use behaviour. The EU-Dap network has delivered freely available quality standardized materials in nine EU-languages. We managed to improve the materials following diverse sources of data, without changing the conceptual model and the particular objectives of each lesson. It was an exercise where science and practice were synergic and where a very operational process was founded by solid quantitative and qualitative information.

The result was a robust improvement of implementation and delivery quality of the programme, paving the way to broad population-wide dissemination.

Ongoing improvement by new EU-Dap partners

New centres in countries with other languages, within and outside of the European Union are nowadays in a process of translating, testing, reviewing and adapting the materials in large groups of teachers. The EU-Dap group has asked some of the partners to form a *EU-Dap Faculty*, conducted by the University College Ghent in Belgium. The Faculty is amongst others responsible to track and quality-control the adaptation process in those new countries. It delivers, inevitably, more suggestions for improvement of the materials. The countries we are in contact with at present (12 new countries) all have the intention to connect to the EU-Dap network, to run an effectiveness evaluation study, to train trainers and teachers and to adhere to the EU-Dap programme concept, so to negotiate on the adaptations. It will enrich and improve the materials for all countries using “Unplugged”.

Multicultural European origin opens up to wide dissemination

The Unplugged programme is conceived not in one single EU-member state but in seven centres spread out over the four quarters of the European Union. This multicultural original concept opens up a lot of doors in countries where policymakers, teachers, parents and pupils are looking for prevention strategies that work.

6. Work Package 6: Defining a procedure for the implementation and dissemination of the Guidance

6.1. Background

Work Package 6 is located under milestone number 12 of the grant proposal which is the implementation and solutions manual. This milestone was achieved and this section of the final report describes the procedure.

The need for a dissemination tool and strategy

After positive results from the EU-Dap phase I project, it was inevitable that those involved including the researchers, participants and funders were enthusiastic about spreading this better practice of Comprehensive Social Influence (CSI) in the school setting. Moreover, it was hoped that by spreading CSI curricula such as “Unplugged” the gap in use of evidence-based programs for prevention of drug use could be narrowed.

In general the task at hand was to answer the questions of “how to translate evidence into practice” and “how to design the implementation”. Challenges to be aware of were the large number of stakeholders, different geographic and cultural factors at the local level. Based on the evaluation results of EU-Dap phase I, it was determined that the dissemination tool and/or strategy should be general and promote the adoption of all programs based on Cognitive Social Influence (CSI) and not be specific for the dissemination of the “Unplugged” program.

6.2. Work Methods

i) Forming the workgroup

After the EU-Dap phase II kick-off meeting a WP6 task group was formed to develop the dissemination and implementation tool and/or strategy best suited for the stakeholders and local adaptation. This work package was also to be closely linked to Work Package 7 which dealt with the evaluation of the dissemination and implementation. The members of the task group were: Federica Vigna-Taglianti (Turin), Serena Vadrucci (Turin), Leila Fabiani (L'Aquila), Maro Vassara (Thessaloniki), Maria Kyriakidou (Thessaloniki), Gabriela Terzopoulou (Thessaloniki), Roman Gabrhelík (Prague), Karl Bohrn (Vienna), Ewa Florek (Poland), Sara Sanchez (Stockholm) and the WP6 leader Rosaria Galanti (Stockholm).

A WP6 project meeting was scheduled for 3-4 December 2006 in Thessaloniki. In preparation for the meeting, the task group was to review of the literature as outlined by the WP6 leader and to prepare to make decisions regarding target groups, communication piece(s) and dissemination strategy based on the available evidence and their expertise.

ii) Identifying the main principles adopted to develop the Guide

A review of the literature and presentation by WP6 leader allowed for the identification of the following factors for effective promotion and dissemination:

- A clearly written, short and practical communication piece
- Personal communication

- Listing the perceived advantages of a program
- A high level of autonomy for teachers and schools
- A high level of motivation by the teacher
- Additional gains from the program
- Emphasis on the efficacy of the program
- Emphasis that the evaluation was done locally
- Allocated funding to promote the program
- Access to training
- Sharing the task with other teachers including a network of teachers
- Local adoption of the program
- Promotion plan and marketing
- Enthusiasm toward the topic itself
- Support from influential stakeholders

The discussion among the group also identified that there is great variation across countries in terms of how a program will be adopted. For example, stakeholders in countries such as the Czech Republic prefer a top down approach from national authorities while others such as Greece require support and autonomy at the local level. As well there were differences in the authority that would endorse the program. For example in Sweden, it is better a national authority endorses a program to increase adoption of it whereas in Italy it is more important that a regional authority endorses the program.

Looking at the evidence from the literature and after these differences were identified, it was determined that the communication piece for dissemination be a written guidance. As well, this guidance was to be produced in a way that each country could adapt it locally to best suit dissemination and implementation.

iii) Defining a Target Market

The meeting proceeded by identifying a target market. The discussion of the target market was based upon both the factors which influence the adoption of a program and the identification of the cultural differences. As a result of this discussion three target groups were identified: National/Regional Authorities, Headmasters and Teachers.

Because these target groups are so diverse in terms of relevance of the factors each deems positive for implementing a CSI program and the communication of these factors was to be brief, it was decided to produce three pieces in one physical booklet. The three communication pieces were defined as chapters in the guidance and were to be distinguished by different coloured paper so that specific and concise information could be developed for the respective target groups. At the same time, the reader had access to the information directed at other targets.

Based on these three target groups, the task group was divided into three writing teams. Each writing team developed a chapter for the guidance which specifically targeted to (a) Regional/National Authorities, (b) headmasters and (c) teachers. A decision was made to complement the guidance

with a first chapter which provided background information, such as a theoretical background and a summary of results from EU-Dap phase I that could benefit all three target groups. Finally each chapter team had the option to provide resource tools to the end of the guidance. Examples of resource tools included checklists to prepare and evaluate lessons, suggestions for financing CSI programs and how to choose a credible program based on CSI.

A timeline was assigned which required the writing teams to submit their chapters by the 15th of February. These chapters would then be edited by the WP6 leaders in Stockholm and a combined first draft would be sent to the entire task group by the second half of March. During a subsequent meeting in Prague between 28-29 March, changes would be made to the text. After that meeting a final English copy would be emailed to the workgroup in 1 May 2007.

iv) Writing the Guidance

The Stockholm Centre was in charge of writing the first chapter, which was a theoretical background providing rationale for CSI school-based prevention projects. The same Centre was also in charge of putting together and editing the entire guidance in English. The Centre in Prague led the writing of the first chapter which was targeted to regional and national authorities. The Centre in L'Aquila was responsible for the production of the second chapter which was aimed at school authorities. The third chapter which was aimed at the teachers, was led by the centre in Austria. The last component was a tool kit which resulted from a combination of input from the contributors and supported one or more of the chapters of the guidance.

All chapters were submitted to the Stockholm Centre for editing. A draft of the entire guidance was put together and disseminated to not only the WP6 workgroup but also the larger EU-Dap group for input. The WP6 group met in Prague between 28-29 March to review the guidance and resulting comments and to discuss a dissemination strategy. It was during this meeting that a need for an expert review was identified.

v) Expert Review

The purpose of the expert review was to pre-test the guidance to ensure that the information communicated was understandable as well as useful to the respective target groups. In addition, the WP6 group wanted to determine if there was any information missing or deemed unnecessary. The expert reviewers included principals of schools, regional and national authorities, the EMDCCA and teachers with the capacity to read and provide feedback in English. Between the 1-15 May 2007 a list of experts from the partner countries were invited to review the English draft. Comments gathered indicated that the guide was clear, well- understood, useable yet needed some minor adjustments in terms of tone directed to the national or regional authorities. The editors in Stockholm incorporated the relevant changes and distributed the final version for translation and design to be done at the country level.

vi) Production and Dissemination

Each partner country was in charge of producing the guidance in their local language, designing it with a common template and disseminating it based on their local strategy. In general dissemination strategies used included: media releases, mail-outs, conferences and electronic (website or email). A summary is provided below:

Eu-Dap centre	Media Release	Centre's local EU-Dap Website	Another website	Conference organized	Mail out
Italy-Turin			X	X	X
Italy-L'Aquila					X
Sweden*		X	X	X	X
Greece	X	X		X	X
Spain	X	X			X
Belgium		X			X
Austria					X
Czech					X
Poland	X	X		X	X

*Sweden also hosted a meeting with Stakeholders in December 2007 in order to provide a preview of the guidance and collect feedback before its production.

The time period of the dissemination strategy varied across regions. A summary is provided below:

Eu-Dap centre	Start date	End date
Italy-Turin	March 2008	May 2008
Italy-L'Aquila	March 2008	May 2008
Sweden	November 2007	March 2008
Greece	January 2008	February 2008
Spain	February 2008	May 2008
Belgium	March 2008	October 2008
Austria	February 2008	March 2008
Czech Republic	January 2008	February 2008
Poland	April 2008	June 2008
Total	November 2007	October 2008

6.3. Outline of the Guidance

The title of the final document is: *A guide to successful implementation of Comprehensive Social Influence (CSI) curricula in schools*. The original document as well as the translations in the language of every partners is annexed to the final report.

It included the following sections:

Glossary of Terms

Introduction

Chapter 1 – Endorsing a CSI programme in a country or region

Chapter 2 – Incorporating CSI programmes in the school

Chapter 3 – Leading CSI programmes in the classroom

Technical Tools:

1. How to choose a Comprehensive Social Influence (CSI) programme
2. How to raise funds
3. How to make the most of the teachers' training
4. How to perform a quality control assessment
5. Checklist before each lesson
6. Monitoring the lessons
7. Monitoring programme adoption
8. Suggested reading

6.4. Final considerations

In order to improve the process and results, the following factors were noted. First of all, the communication piece which was one booklet with three main targeted chapters was considered useful and easy to disseminate as a way to promote the adoption of CSI programs. As well, the autonomy that each partner country had in terms of adding local examples to the guidance and making minor changes to the text was considered valuable to increase adoption of CSI programs.

In terms of the process to create the implementation and solutions manual, face-to-face meetings with the WP6 team were necessary in order to effectively communicate the needs of each country and the task at hand. Email and telephone correspondence in-between also kept the task on time.

Some areas of improvement include:

- Increase the funding to contract an editor in each country to proof the manual before the launch
- Ease of access of the guidance on the websites (not password protected)

7. Work Package 7: The evaluation of the Dissemination Guide

The protocol for this phase was defined in July 2007 (see Annexes). Specific short protocols were prepared for each country, including detailed instructions for conducting the evaluation study.

7.1. Purpose of the evaluation

The general purpose of the evaluation undertaken in WP7 was to understand whether evidence-based school-programs against substance abuse in youths based on a CSI model can be effectively disseminated using the Guide elaborated in the WP6 “Preventing Substance Abuse among Students. A guide to successful implementation of Comprehensive Social Influence curricula in schools”.

The main hypothesis of the study is that the release of the guide in selected centre areas is followed by a statistically significant increase in the proportion of classes in target compulsory school grades adopting CSI programs against substance use.

Secondary hypotheses are:

- the reach: the guide reached at least 70% of each of the designed target groups (policy makers, headmasters, teachers)
- the readability: the guide’s content and indications were understood by the target groups
- the usage: at least 70% of the reached target report used any of the suggestions in the guide
- the decision making: the guide influenced the decision to adopt a CSI program.

7.2. Study design

The evaluation have been conducted with one of the following basic options within each participating country:

- Pre-post comparison (uncontrolled): the rate of adoption was assessed in the same area(s) at least twice: the first time before the launch of the guide (November 2007) and the second time one year after the first assessment (November 2008)
- Pre-post comparison (controlled): the participating centre(s) chose at least two different areas similar as to socio-economic characteristics and infra-structures and administratively and geographically separated. Thereafter, the chosen areas were randomly assigned to two groups, in one of which the guide was launched, while the area(s) in the other group served as controls. The pre-and post-assessment were conducted simultaneously in all areas.

The centres Italy (Torino/Novara), Austria, Italy (L’Aquila) and Czech Republic/Prague participating in the study conducting a controlled pre-post design.

The centres Spain/Bilbao, Belgium/Ghent, Greece/Thessaloniki and Poland/Poznan participating in the study conducting a simple uncontrolled pre-post design.

Sweden did not participate to the evaluation study, but concentrated the efforts in the Guide dissemination and process evaluation, organizing it on a large scale.

7.3. Outcomes

Primary outcomes

- Observed variation in the proportion of classes in appropriate grades (according to the country definition, students' age 12-14 years) adopting a CSI program in the school-year following the release of the guide.
- Observed excess variation as above, in the intervention area(s) contrasted to the control area(s)

Secondary outcomes

- Reach: the extent to which the guide target (decision makers, schools and classes) received the guide in the time period between the launch of the guide and the post test.
- Readability: the extent to which the reached target (see above) read and understood the scope and content of the guide.
- Usage: the extent to which the reached target (see above) reports having used any of the guide suggestions chosen from a list.
- Decision making: qualitative (narrative) illustration of how the used suggestions as above influenced decision making about implementation of CSI programs at the school and class level.

7.4. Methods

Study areas

Each center chose the area of WP7 implementation and evaluation at the beginning of the study.

To choose the areas, some criteria were to be satisfied:

- Well defined administrative boundaries.
- Sufficient number of observational units (classes) to allow statistical comparisons.
- Low level of background adoption of CSI programs.

Power calculations showed that in most scenarios a sample between 100 and 200 classes (corresponding to 25-50 schools) were needed in order to have a sufficient power. When the chosen area contained a number of schools/classes higher than the number needed to reach a sufficient power, the centres were helped to extract a random sample of classes for the pre-test survey. A new random sample was subsequently extracted for the post-test survey.

Data collection

The instruments and methods of data collection for the pre-and post assessment were identical and provided by the coordinating centre (OED).

The post-test assessment encompassed the same grades and the same period of school-year as the pre-test, but with a different sample of classes.

Data was collected through mail or e-mail survey eventually followed by complementary telephone interview among class teachers.

Data collection for the pre-test took place in November-December 2007, whilst data collection for the post-test took place in November-December 2008.

A short structured questionnaire (see Annex 6) was used to collect data for pre-test and post-test survey.

Based on the selection of classes in the sample, an invitation letter was sent to the headmasters of the respective schools, to inform them on the purpose of the evaluation, and to request the completion of the questionnaires. Remainders were scheduled not later than 15 days from the first sending. Efforts were made to obtain direct contact addresses to the responsible teachers.

A second short questionnaire was administered in May/June 2008 to evaluate the process (secondary outcomes). Data was collected again through mailed survey and eventually complementary phone calls. For efficiency purposes, the sample of the pre-test survey was retained for this evaluation. Also policy makers were sent the questionnaire.

Effect modifiers at the community level

Some factors at the community level may weaken or enhance the guide success in increasing the spread of CSI programs, eg:

- the average social status in the area
- the presence or introduction of policies and regulations against drugs and policies on drug education or prevention
- media campaigns on health related issues

To take into account the effect of these factors in the statistical analysis, some information at the area level was collected at the beginning of the study.

Data processing and management

All data collected by the centres in the frame of the WP7 was entered at the local level using a template prepared by the data manager at the Torino centre.

The data analysis was carried on by Torino centre.

The coordinating centre in Torino implemented a database for each participating centre, containing all relevant information about the operations due at the centre level, in particular: choice of design, areas characteristics, sampling base, sample size, actual pre-test and post-test samples, dates and modalities of the launch of the guide.

Launch of the Guide

The actions defining “the launch of the guide” took place in the time period January-February 2008, and were developed on three levels:

- European level
- National level (Ministry of Education, Ministry of health, Ngo’s and other pertinent authorities)
- Local area level

In the countries choosing the controlled design, it was taken into account the risk of contamination of the controlled areas: it was therefore recommended that centres adopting the controlled design avoid a national launch of the guide while the evaluation is pending

Some examples of activities that could be organized in order to launch the guide were given in the study protocol (see www.eudap.net).

Process evaluation of the Guide

To evaluate reach, readability, usage and influence of the Guide on the decision to adopt a CSI program (secondary outcomes), a specific protocol and questionnaire (see Annexes) were developed. The process evaluation took place in May/June 2008 in all participating countries.

The process evaluation survey was performed on the same sample of classes interviewed in the pre-test. Moreover, all the principals and the policy makers to whom the Guide was sent were interviewed. For the countries performing a controlled evaluation, obviously only the intervention area was object of the process evaluation.

Data were entered in a specific mask created by the coordinating centre in Torino, and analyzed by the Swedish and Torino centre.

7.5. Results

Baseline characteristics of the areas

Information on substance use, health promotion campaigns, price and availability of substances in the areas of the WP7 evaluation (year of reference: 2007) are provided in table 9 and 10.

Data on cannabis use appear to be very different among the countries (table 9). Prevention campaigns are quite common, as well as smoking restrictions, even if there are still countries (Greece, Austria) where smoking in public spaces is allowed (table 10). Also the cost of a pint of beer is very different among the countries.

Tobacco advertisements are forbidden in Italy, Spain and Poland, are partially forbidden in Belgium, Austria, Sweden and Czech Republic, and are allowed in Greece (table 10).

Alcohol advertisements are partially forbidden in Italy, Spain, Sweden, Czech Republic, Poland, and are allowed in Greece, Belgium and Austria.

The possession of cannabis for personal use is subjected to penal sanctions in Sweden, Austria, Greece, Poland and Czech Republic and to administrative sanctions in Italy.

Table 9. Prevalence of cigarette smoking and cannabis use among adults and youths in the EU-Dap 2 countries.

Centre	Lifetime cigarette smoking adults	Past 30 days cigarette smoking adults	Lifetime cigarette smoking youths	Past 30 days cigarette smoking youths	Lifetime cannabis use youths	Past 30 days cannabis use youths
Italy-Torino/ Novara	24,5%		62.3%		34,9%	15%

Spain-Bilbao						
Belgium-Ghent	47%		60%		21,8%	
Sweden	75%	15%	52,5%	18%	6%	1,7%
Greece-Thessaloniki		24,6%	54%		9,5%	
Austria	51%	30-48%	32/70%	21,6-32%	7,7/20%	
Italy-L'Aquila			62,3%		30,2%	
Czech-Prague			79,6%	27%	24,8%	10%
Poland-Wielkopolska		32%	71,7%	42,4%	41.4%	13,4%

Table 10. Health education campaigns, price and availability of cigarettes and alcohol.

Centre	Health education campaigns	Average price of cigarettes	Average price of pint of beer	Tobacco smoking in public spaces	Legal age tobacco purchase	Legal age alcohol purchase
Italy-Torino/Novara	Yes (various)	4 €	4 €	restricted	<18	18-20
Spain-Bilbao	Yes (various)	3 €	5 €	restricted	<18	18-20
Belgium-Ghent	Yes (various)	4,3 €	1,60 €	restricted	<18	<18
Sweden	Yes (various)	5 €	1,74 €	restricted	18-20	18-20
Greece-Thessaloniki	Yes (smoking)	2 €	5 €	allowed	<18	18-20
Austria-Wien	Yes (some)	3,5 €	3,5 €	allowed	<18	<18
Italy-L'Aquila	Yes (various)	3,5 €	4 €	restricted	<18	18-20
Czech-Prague	Yes (some)	2 €	0,80 €	restricted	18-20	18-20
Poland-Poznan	Yes (smoking)	2,5 €	0,80 €	restricted	18-20	18-20

Pre-test assessment

The sample for pre-test survey was randomly extracted from the total number of classes in the area provided by the centres. Torino centre performed the random extraction of samples.

For the countries conducting the simple pre-post test evaluation study, out of a total number of 335 classes to be contacted and surveyed, the overall response rate was 66.8%, ranging from 28% of Poland to 97% of Thessaloniki.

For the countries conducting the controlled evaluation study, out of a 407 classes to be contacted and surveyed in the intervention areas, the overall response rate was 62%, ranging from 23% of Czech Republic/Prague to 97% of Torino/Novara; and out of 407 classes to be contacted in the control areas, the overall response rate was 69.5%, ranging from 31% of Czech Republic to 100% of Torino/Novara (Table 11). It is observed a constant higher response rate in the control areas, in all participating countries.

Table 11. Sample extraction and response rate (pre-test)

Centre	Total number of classes in the area	Classes randomly extracted for pre-test survey	Surveyed classes	Response rate % (surveyed/extracted)
<i>Simple pre-post study</i>				
Spain-Bilbao	244	54	32	59.3
Belgium-Ghent	128	88	78	88.6
Greece-Thessaloniki	251	88	85	96.6
Poland-Poznan	405	105	29	27.6
All	1028	335	224	66.8
<i>Controlled study</i>				
Italy-Torino/Novara				
Intervention	195	106	103	97.2
Control	151	106	106	100.0
Austria-Wien				
Intervention	123	88	36	40.9
Control	236	88	44	50.0
Italy-L'Aquila				
Intervention	429	105	88	83.8
Control	531	105	100	95.23
Czech-Prague				
Intervention	234	108	25	23.1
Control	264	108	33	30.6
All interventions	981	407	252	61.9
All controls	1182	407	283	69.5

Questionnaires were filled between 10th December 2007 and 11th April 2008. Since the aim of the survey was to investigate the drug prevention curricula applied in the classes during the 2007/2008 school year, all the questionnaires were kept for the analysis, despite they were filled in a large period of time, and ideally the pre-test survey should have been completed at the beginning of January. Students in the surveyed classes were of 6th-8th grade. However, the age of the students ranged from 11 to 15 years old (Table 12).

Table 12. Characteristics of the surveyed classes by centre (pre-test)

Centre	Class grade	Age of students (years)	Size of the class	N boys (%)
Italy-Torino/Novara	2-3 media	11-15	11-31	23-78
Spain-Bilbao	2	11-15	11-35	25-100
Belgium-Ghent	1-2	11-15	4-24	0-100
Greece-Thessaloniki	8 th	12-14	4-32	33-75
Austria-Wien	6 th	11-13	14-43	11-78
Italy-L'Aquila	1-2-3 media	11-14	8-29	26-80
Czech-Prague	6 th	11-15	4-56	31-75
Poland-Poznan	1	12-15	11-31	21-100
Overall	6 th -8 th	11-15	4-56	0-100

On overall, 86% of questionnaires were filled by teachers, 12% by principals or principals assistants, and 2% by other school personnel. Respondents taught Mathematics in 36% of cases, Literature in 34%, foreign languages in 8%, History in 5%, Gym in 3% of cases.

During the period September-November 2007, in the countries participating in the simple pre-post study, on overall 86 classes (38%) attended health education or health promoting curricula (table 13). The proportion is very different in the countries, with the lowest proportion in Thessaloniki (18%), and the highest in Ghent (61%), with a quite high proportion (55%) in Poznan. Given the low response rate in this country, this result suggests a selection of the responding schools, as only the classes implementing health education curricula filled the questionnaire. Also, the proportion of curricula focused on substance use varied among the countries, ranging from 42% in Ghent to 94% in Poznan (table 13), with a mean value of 56%.

In the countries participating in the controlled study, on overall 26% of classes in the intervention areas and 38% in control areas attended health education or health promoting curricula at baseline (table 13). The proportion was very low in Torino/Novara, Austria and L'Aquila, and very high in Czech Republic, suggesting again selection of the responding schools in this country. A very high proportion of curricula were focused on substance use both in intervention and control areas with some differences between the countries (table 13).

Table 13. Proportion of classes attending health education curricula and proportion of curricula focused on substance use by centre (pre-test)

Centre	Classes attending health education curricula n (%)	Curricula primarily focused on substance use n (%)	Curricula secondarily focused on substance use N (%)	Curricula focused on substance use n (%)
<i>Simple pre-post study</i>				
Spain-Bilbao	7 (22.0)	3 (42.9)	3 (42.9)	6 (85.7)
Belgium-Ghent	48 (61.5)	8 (16.7)	12 (25.0)	20 (41.7)
Greece-Thessaloniki	15 (17.7)	2 (13.3)	5 (33.3)	7 (46.7)
Poland-Poznan	16 (55.2)	13 (81.2)	2 (12.5)	15 (93.8)
All	86 (38.4)	26 (30.2)	22 (25.6)	48 (55.8)
<i>Controlled study</i>				
Italy-Torino/Novara				
Intervention	24 (23.3)	7 (29.2)	11 (45.8)	18 (75.0)
Control	33 (31.1)	5 (15.1)	22 (66.7)	27 (81.8)
Austria-Wien				
Intervention	10 (27.8)	3 (30.0)	4 (40.0)	7 (70.0)
Control	12 (27.3)	2 (16.7)	5 (41.2)	7 (58.8)
Italy-L'Aquila				
Intervention	11 (12.5)	6 (54.5)	3 (27.3)	9 (81.8)
Control	31 (31.0)	7 (22.6)	12 (38.7)	19 (61.3)
Czech-Prague				
Intervention	20 (80.0)	8 (40.0)	10 (50.0)	18 (90.0)
Control	32 (97.0)	17 (53.1)	12 (37.5)	29 (90.6)
All interventions	65 (25.8)	24 (36.9)	28 (43.1)	52 (80.0)
All controls	108 (38.2)	31 (28.7)	51 (47.2)	82 (75.9)

62.5% of the implemented health education curricula were created by the school itself. Most of programs (80%) were intended to last less than 10 hours, 82.7% were delivered by teachers, with or without the collaboration of educators. 44% of programs included role-plays, 65% problem solving techniques, 48% brainstorming, 80% group discussions and 43% games.

92% of programs included information on tobacco, 89% on alcohol, and 82% on drugs. Values and stereotypes related to substance use were touched by 78% of curricula. 82% of programs include components related on developing social skills, and 72% on personal skills.

22% of the surveyed classes in the countries undertaking simple pre-post study, 46% of the surveyed classes in the intervention areas and 40% in the control areas were planning to implement an anti-drug curriculum during the spring term.

The classes not planning to implement curricula declared lack of training (22%), lack of time (15%) as the main reasons for not implementing any program. Only 4% are not convinced these kind of program can be useful, whilst 24% think the pupils too young to face such themes; 8% were not allowed to do it.

64% of the interviewed classes belong to a school having an enforced policy against smoking/tobacco. Apart from the happy case of Belgium where this policy was adopted in 1954, in all the other countries the schools adopted an anti-smoking policy after 1990, and a large percentage of them (68.4%) between 2003 and 2007.

Only 40% of the interviewed classes belong to a school having an enforced policy against alcohol. Again, apart from the case of Belgium where this policy was adopted in 1977, in most of the other countries the schools adopted an anti-alcohol policy after 1999.

Only 37% of the interviewed classes belong to a school having an enforced policy against drugs. In this case most of the schools adopted an anti-alcohol policy after 1990.

If a student is caught smoking during school time, he/she is orally warned in 60% of cases, in 36% of cases gets a written remark, in 2% of cases is referred to the school nurse/doctor, and in 9% of cases gets a remark in the student's proficiency scores. In 72% of cases parents are informed.

Post-test assessment

Following the same procedure of the pre-test, the sample for post-test survey was randomly extracted from the total number of classes in the area provided by the centres. Being extracted from the same sampling base (first column of table 14), it is possible that some classes were included in both surveys, but from a general point of view, the post-test sample was independent from the pre-test sample.

For the countries conducting the simple pre-post test evaluation study, the overall response rate was 53.1%, ranging from 9% of Poland to 95% of Thessaloniki.

For the countries conducting the controlled evaluation study, in the intervention areas the overall response rate was 52%, ranging from 26% of Czech Republic/Prague to 94% of Torino/Novara. In the control areas the overall response rate was 58%, ranging from 20% of Austria to 94% of Torino/Novara (Table 14). In this follow-up survey, however, the response rate was higher in the control areas in L'Aquila and Czech Republic, but it was very similar in Torino/Novara and in favour of intervention area in Austria.

Table 14. Sample extraction and response rate (post-test)

Centre	Total number of classes in the area	Classes randomly extracted for post-test survey	Surveyed classes	Response rate % (surveyed/extracted)
<i>Simple pre-post study</i>				
Spain-Bilbao	244	54	11	20.4
Belgium-Ghent	128	88	74	84.1
Greece-Thessaloniki	251	88	84	95.5
Poland-Poznan	405	105	9	8.6
All	1028	335	178	53.1
<i>Controlled study</i>				
Italy-Torino/Novara				
Intervention	195	106	100	94.3
Control	151	106	100	94.3
Austria-Wien				
Intervention	123	88	18	36.4
Control	236	88	32	20.5
Italy-L'Aquila				
Intervention	429	105	65	61.9
Control	531	105	69	65.7
Czech-Prague				
Intervention	234	108	28	25.9
Control	264	108	34	31.5
All interventions	981	407	211	51.8
All controls	1182	407	235	57.7

Questionnaires were filled between 11th December 2008 and 30th March 2009.

Students in the surveyed classes were of 6th-8th grade. The age of the students ranged from 11 to 15 years old (Table 15).

Table 15. Characteristics of the surveyed classes by centre (post-test)

Centre	Class grade	Age of students (years)	Size of the class	% of boys
Italy-Torino/Novara	2-3 high school	11-14	10-35	26-80
Spain-Bilbao	2	12-15	14-32	35-72
Belgium-Ghent	1 st grade / 1 st -2 nd year	11-15	3-26	0-100
Greece-Thessaloniki	8 th	12-15	14-31	28-76
Austria-Wien	6 th	11-13	11-29	8-100
Italy-L'Aquila	1-2-3 media	11-15	5-28	18-78
Czech-Prague	6 th	11-15	5-85	31-85
Poland-Poznan	1	12-15	8-30	30-100
Overall	6 th -8 th	11-15	3-85	0-100

On overall, 79% of questionnaires were filled by teachers, 18.5% by principals or principals assistants, and 1.8% by other school personnel. Where respondents answered to this question, they taught Mathematics in 46% of cases, Literature in 36%, foreign languages in 3.5%, History in 4%, Technical Education in 1.5% of cases.

During the period September-November 2008, in the countries participating in the simple pre-post study, on overall 57 classes (32.6%) attended health education or health promoting curricula (table 16). Similarly to the pre-test, the proportion is very different in the participating countries, with the lowest proportion in Thessaloniki (11%), a proportion of about 18% in Bilbao, a plausible proportion of 56% in Ghent, and an unlikely high proportion (67%) in Poznan. Again, given the low response rate in this country, the results suggest a selection bias in the responding schools. Also the proportion of curricula focused on substance use varied among the countries, ranging from 22% in Thessaloniki to 100% in Bilbao (table 16), with a mean value of 55%.

In the countries participating in the controlled study, on overall 29% of classes in the intervention areas and 28% in control areas attended health education or health promoting curricula (table 16). The proportion is very low in all countries, except for Czech Republic, suggesting a selection bias in the responding schools in this country. A very high proportion of curricula were focused on substance use both in intervention and control areas with some differences between the countries and the areas (table 16).

Table 16. Proportion of classes attending health education curricula and proportion of curricula focused on substance use by centre (post-test)

Centre	Classes attending health education curricula n (%)	Curricula primarily focused on substance use n (%)	Curricula secondarily focused on substance use N (%)	Curricula focused on substance use n (%)
<i>Simple pre-post study</i>				
Spain-Bilbao	2 (18.2)	1 (50.0)	1 (50.0)	2 (100.0)
Belgium-Ghent	40 (56.3)	7 (17.1)	17 (41.5)	24 (58.5)
Greece-Thessaloniki	9 (10.7)	0 (0.0)	2 (22.2)	2 (22.2)
Poland-Poznan	6 (66.7)	1 (16.7)	3 (50.0)	4 (66.7)
overall	57 (32.6)	9 (15.5)	23 (39.7)	32 (55.2)
<i>Controlled study</i>				
Italy-Torino/Novara				
Intervention	21 (21.0)	4 (20.0)	7 (35.0)	11 (55.0)
Control	14 (14.3)	2 (14.3)	9 (64.3)	11 (78.6)
Austria-Wien				
Intervention	3 (16.7)	2 (66.7)	1 (33.3)	3 (100.0)
Control	10 (31.2)	1 (10.0)	5 (50.0)	6 (60.0)
Italy-L'Aquila				
Intervention	13 (20.0)	4 (30.8)	4 (30.8)	8 (61.5)
Control	12 (17.4)	4 (36.4)	4 (36.4)	8 (72.7)
Czech-Prague				
Intervention	24 (88.9)	13 (54.2)	9 (37.5)	22 (91.7)
Control	28 (84.8)	14 (50.0)	11 (39.3)	25 (89.3)
All interventions	61 (29.0)	23 (38.3)	21 (35.0)	44 (73.3)
All controls	64 (27.6)	21 (33.3)	29 (46.0)	50 (79.4)

62.3% of the implemented health education curricula were created by the school itself. Most of programs (80%) were intended to last less than 10 hours, 72% were delivered by teachers, with or without the collaboration of educators. 43% of programs included role-plays, 61% problem solving techniques, 52% brainstorming, 93% group discussions and 48% games.

89% of programs included information on tobacco, 87% on alcohol, and 89% on drugs. Values and stereotypes related to substance use were touched by 85% of curricula. 83% of programs include components related on developing social skills, and 77% on personal skills.

14% of the surveyed classes in the countries undertaking simple pre-post study, 53% of the surveyed classes in the intervention areas and 57% in the control areas were planning to implement an anti-drug curriculum during the spring term.

The classes not planning to implement curricula declared lack of training (28%), lack of time (25%) as the main reasons for not implementing any program. Only 3% are not convinced these kind of program can be useful, whilst 27% think the pupils too young to face such themes; and 8% were not allowed to do it.

76% of the interviewed classes belong to a school having an enforced policy against smoking/tobacco. 66 classes adopted such a policy in 2008.

53% of the interviewed classes belong to a school having an enforced policy against alcohol. 38 classes adopted it in 2008.

50% of the interviewed classes belong to a school having an enforced policy against drugs. 40 classes adopted it in 2008.

If a student is caught smoking during school time, he/she is orally warned in 56% of cases, in 44% of cases gets a written remark, in 1% of cases is referred to the school nurse/doctor, and in 7% of cases gets a remark in the student's proficiency scores. In 72% of cases parents are informed.

Comparison of program adoption between pre and post-test

The comparison of program adoption between Autumn 2007 and Autumn 2008 shows a reduction of the overall rate of adoption of health education curricula when looking at the countries undertaking the simple pre-post study (32.6% vs 38.4% of pre-test); the change is towards a reduction of adoption rate in all countries. The proportion of programs focused on substance use appear to be stable (table 17).

When looking at the countries conducting the controlled evaluation study, in the intervention areas there is a slight increase (+3%) of adoption of health education curricula, whilst a reduction is observed in the control areas (-10%). The difference appear to be in favour of the areas receiving the Guide both in Torino/Novara, L'Aquila and Czech Republic. The proportion of programs focused on substance use appear to be reduced in intervention areas and increased in control areas, with some differences among the countries.

Among simple pre-post countries, in the second survey a lower proportion of classes (14% vs 22% of pre-test) were planning to implement an anti-drug curriculum during the spring term. On the contrary, among countries undertaking the controlled evaluation study, an higher proportion was observed at post-test both in the intervention (53% vs 46% of pre-test, difference +7%) and in control areas (57% vs 40% of pre-test, difference +17%). However, in this case the difference was clearly in favour of control areas.

Conclusions

From these analyses it is not clear if the Guide is an effective strategy to improve the adoption of health education curricula. Results are inconsistent between countries undertaking different study designs and if there is some indication of improvement of adoption rate from the controlled study, this is rather in favour of control areas. It is worth noting that the survey had on overall a low level of response rate both in the pre-test (62-69% of contacted classes replied) and in the post-test (52-58%), therefore the sample size for the analysis is very low. Consequently, the reliability of the results is very low, and no definite answer can be given on the effectiveness of these kind of tools in improving the adoption of effective practices.

On the other side, there is a clear improvement from 2007 to 2008 in the rate of policies against tobacco (64% vs 76%), alcohol (40% vs 53%) and drugs (37% vs 50%).

Table 17. Comparison of proportion of classes attending health education curricula and proportion of curricula focused on substance use by centre (pre-test vs post-test)

Centre	Classes attending health education curricula n (%)		Curricula primarily focused on substance use n (%)		Curricula focused on substance use n (%)	
	pre	post	Pre	post	Pre	post
<i>Simple pre-post study</i>						
Spain-Bilbao	7 (22.0)	2 (18.2)	3 (42.9)	1 (50.0)	6 (85.7)	2 (100.0)
Belgium-Ghent	48 (61.5)	40 (56.3)	8 (16.7)	7 (17.1)	20 (41.7)	24 (58.5)
Greece-Thessaloniki	15 (17.7)	9 (10.7)	2 (13.3)	0 (0.0)	7 (46.7)	2 (22.2)
Poland-Poznan	16 (55.2)	6 (66.7)	13 (81.2)	1 (16.7)	15 (93.8)	4 (66.7)
All	86 (38.4)	57 (32.6)	26 (30.2)	9 (15.5)	48 (55.8)	32 (55.2)
<i>Controlled study</i>						
Italy-Torino/ Novara						
Intervention	24 (23.3)	21 (21.0)	7 (29.2)	4 (20.0)	18 (75.0)	11 (55.0)
Control	33 (31.1)	14 (14.3)	5 (15.1)	2 (14.3)	27 (81.8)	11 (78.6)
Austria-Wien						
Intervention	10 (27.8)	3 (16.7)	3 (30.0)	2 (66.7)	7 (70.0)	3 (100.0)
Control	12 (27.3)	10 (31.2)	2 (16.7)	1 (10.0)	7 (58.8)	6 (60.0)
Italy-L'Aquila						
Intervention	11 (12.5)	13 (20.0)	6 (54.5)	4 (30.8)	9 (81.8)	8 (61.5)
Control	31 (31.0)	12 (17.4)	7 (22.6)	4 (36.4)	19 (61.3)	8 (72.7)
Czech-Prague						
Intervention	20 (80.0)	24 (88.9)	8 (40.0)	13 (54.2)	18 (90.0)	22 (91.7)
Control	32 (97.0)	28 (84.8)	17 (53.1)	14 (50.0)	29 (90.6)	25 (89.3)
All interventions	65 (25.8)	61 (29.0)	24 (36.9)	23 (38.3)	52 (80.0)	44 (73.3)
All controls	108 (38.2)	64 (27.6)	31 (28.7)	21 (33.3)	82 (75.9)	50 (79.4)

Launch of the Guidance

The actions for the guide's launching took place during the period from November 2007 to October 2008. Each EU-dap Center completed the questionnaire for a different time period and this made the comparison difficult.

The preface of the guide (table 18) was signed by a national authority only in Czech Republic and Greece and by a non national authority in Italy, Sweden, Greece and Poland. In Belgium, Austria and Spain the Guide was not signed by an authority.

All EU-Dap centers sent the guide at many public health organizations and educational institutions.

A press release was made by Greece, Spain and Poland. The same EU-dap centers referred a number of publications in media or newspapers (2-7).

The Guide was published on the websites of four EU-Dap Centers and only Italy (Torino/Novara) and Sweden published it on other websites. Totally the guide was published on 8 websites.

Local conferences were organized by Greece, Italy (Torino/Novara) and Poland in order to promote the guide. About 360 persons participated in these conferences. Additionally Sweden, Poland and Italy (L'Aquila) referred a list of other actions they have implemented.

In all countries the guide was sent to all schools either by the EU-Dap centers, either by another authority.

Table 18. Actions undertaken by centers to launch the Guide

Centre	National authority signed the Guide	Non-national authority signed the Guide	Press release	Published on websites	Local conference
Italy-Torino/Novara		yes		yes	yes
Spain-Bilbao			yes	yes	
Belgium-Ghent				yes	
Sweden		yes		yes	
Greece-Thessaloniki	yes	yes	yes		yes
Austria-Wien	no	no			
Italy-L'Aquila		yes		yes	
Czech-Prague	yes				
Poland-Poznan		yes	yes	yes	yes

7.6. Results of process evaluation of the dissemination of the Guidance

On overall, 424 principals and 1034 teachers to whom the Guide was sent were contacted for the process evaluation. The number of stakeholders contacted in some countries, and consequently their response rate was unclear.

The response rate of principals was on overall 34.5%, ranging from high values in Torino/Novara, Thessaloniki and Wien to no response at all in Poland, and low values in Spain, L'Aquila and Prague.

The response rate of teachers was on overall 27.1%, ranging from high values in Torino/Novara, to almost no response in Poland, and low values in all other countries.

Acceptable response rate was reached for stakeholders only in Sweden (54.5%) (table 19).

Differences between centers in the proportion of respondents by professional position indicate that probably different reminders procedures or different sampling procedures were used.

Table 19. Response rate by centre and respondent's position*

Centre	Principals (schools)		Teachers (classes)		Stake-holders	
	Contacted N	Respondents n (%)	Contacted N	Respondents n (%)	Contacted N	Respondents n (%)
Italy-Torino/ Novara	16	14 (87.5)	64	62 (96.9)	-	-
Spain-Bilbao	60	3 (5.0)	60	5 (8.3)	160	6 (3.8)
Belgium-Ghent	-	-	-	-	-	-
Sweden- Stockholm	94	42 (44.7)	620	170 (27.4)	33	18 (54.5)
Greece- Thessaloniki	60	39 (65.0)	60	12 (20.0)	111	12 (10.8)
Austria-Wien	47	30 (63.8)	47	-	13	0 (0.0)
Italy-L'Aquila	29	10 (34.5)	63	18 (28.6)	7	0 (0.0)
Czech-Prague	60	9 (15.0)	60	12 (20.0)	-	-
Poland-Poznan	60	0 (0.0)	60	1 (1.7)	?	8 (?)
Overall	426	147 (34.5)	1034	280 (27.1)	324	44 (13.6)

* Belgium lately decided not to perform process evaluation; Torino/Novara and Prague did not perform process evaluation on stakeholders; Austria did not perform process evaluation on teachers; the number of stakeholders contacted in Poland is unclear.

The Guide was received by a high proportion of principals in Torino/Novara, Thessaloniki, Wien and L'Aquila (table 20). It was read by a high proportion of principals in Torino/Novara, Bilbao, L'Aquila and Prague, but the comprehension of its main message was quite low. In Torino/Novara and Prague the principals did not find the Guide easy to read. On the contrary, in all the centres they found its suggestions useful.

Table 20. Evaluation of the Guide readability and usefulness by Principals (n=147)

Centre	Received the Guide	Remember the title	Read the Guide	Reported correct message	Find easy to read	Find suggestions useful
Italy-Torino/Novara	78.6	63.6	72.7	37.5	37.5	86.5
Spain-Bilbao	33.3	0.0	100.0	100.0	100.0	100.0
Sweden-Stockholm	31.0	7.7	53.8	28.6	50.0	100.0
Greece-Thessaloniki	97.4	21.1	42.1	0.0	50.0	100.0
Austria-Wien	63.3	0.0	0.0	-	-	
Italy-L'Aquila	90.0	88.9	89.9	16.7	87.5	100.0
Czech-Prague	55.6	100.0	80.0	50.0	25.0	100.0
Overall	65.3	30.2	45.8	21.4	53.5	97.8

The Guide was received by a high proportion of teachers in Torino/Novara, Thessaloniki, and L'Aquila (table 21). It was read by a high proportion of teachers in Torino/Novara, Bilbao, L'Aquila and Prague, but the comprehension of its main message was very low. On the contrary, in Sweden the Guidance was read by less than 50% of the teachers who received it, but those who read it reported the highest level of understanding among the participating countries. In Torino/Novara, Stockholm and Prague the teachers did not find the Guide easy to read, but those who read it found its suggestions useful, as was the case in the majority of the countries.

Table 21. Evaluation of the Guide readability and usefulness by Teachers (n=279)*

Centre	Received the Guide	Remember the title	Read the Guide	Reported correct message	Find easy to read	Find suggestions useful
Italy-Torino/Novara	74.2	82.6	84.8	7.7	53.9	97.4
Spain-Bilbao	60.0	100.0	100.0	0.0	0.0	66.6
Sweden-Stockholm	12.4	10.0	42.9	42.9	28.6	100.0
Greece-Thessaloniki	91.7	36.4	45.5	20.0	60.0	100.0
Italy-L'Aquila	88.9	93.8	100.0	18.8	75.0	100.0
Czech-Prague	58.3	85.7	71.4	20.0	20.0	100.0
Overall	37.3	66.0	88.2	14.7	52.0	97.3

* Poland received back only 1 questionnaire from teachers contacted, therefore it was excluded from this analysis

The Guide was received by a high proportion of stakeholders in the centres with this information (table 22). It was read by a low proportion of stakeholders only in Stockholm, but the comprehension of its main message was good only in Stockholm itself. In Torino/Novara, Thessaloniki and Poznan the stakeholders did not find the Guide easy to read. Again, on the contrary, in all the centres they found its suggestions useful.

Table 22. Evaluation of the Guide readability and usefulness by Stakeholders (n=44)

Centre	Received the Guide	Remember the title	Read the Guide	Reported correct message	Find easy to read	Find suggestions useful
Spain-Bilbao	100.0	100.0	100.0	33.3	66.7	100.0
Sweden-Stockholm	61.1	45.5	54.6	66.7	83.3	83.4
Greece-Thessaloniki	100.0	100.0	91.7	45.5	54.6	100.0
Poland-Poznan	100.0	100.0	100.0	12.5	62.5	-
Overall	84.1	83.8	83.8	38.7	64.5	95.6

Among 153 persons receiving and reading the Guide, some applied the suggestions given. 12% searched for an official approval of the Guide recommendations, 19.7% used validated criteria to choose effective school programs for drug prevention, 23.9 organized teacher' training, 15% promoted curricular changes in order to deliver drug prevention programs, 19% promoted organization changes in the school, 22% involved students' parents in the programs and 10.6% applied for funds. The implementation of recommendations was quite similar in all the countries, apart from Poland where no suggestion was implemented (table 23).

Table 23. Application of suggestions from the Guidance (n=153)*

Centre	Official approval	Used criteria for choice	Organized teachers' training	Curricular changes	Organization changes	Involved parents	Applied for funds
	%	%	%	%	%	%	%
Italy-Torino/Novara	17.0	21.3	6.4	4.3	6.4	8.5	8.5
Spain-Bilbao	0.0	20.0	10.0	0.0	0.0	10.0	10.0
Sweden-Stockholm	10.5	0.0	10.5	5.3	10.5	10.5	10.5
Greece-Thessaloniki	15.6	21.9	50.0	34.4	28.1	34.4	12.5
Italy-L'Aquila	8.3	29.2	37.5	25.0	41.7	41.7	8.3
Czech-Prague	0.0	21.2	33.3	11.1	33.3	33.3	22.2
Poland-Poznan	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Overall	12.0	19.7	23.9	14.8	19.0	21.8	10.6

* 44 principals, 78 teachers, 31 stakeholders

8. Country local dissemination: the situation in each EU-Dap centre

Following the evaluation results of EU-Dap phase I, each partner country was responsible of the dissemination of Comprehensive Social Influence programs at the local level.

Based on geographic and cultural factors, different tools and strategies were adopted. A summary of dissemination activities by centre is provided below.

8.1. Bilbao, Spain

Training

Between the years 2007 and 2009 the centre organised 15 training courses involving 206 teachers.

Program implementation

Schools: 15

Teachers: 23

Classes: 23

Students: 430

8.2. Gent, Belgium

Between April 2008 and December 2009 the following dissemination activities have been conducted:

EU-Dap Materials

Teacher manuals ordered and distributed	328
Pupil workbooks ordered and distributed	2.088

Training

Teachers trained	464
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Program implementation

Schools involved	72
Teachers implementing at ratio 75%	348
Pupils reached at ratio # 22 per implementing teacher x 2,5 classes	18.040

Seminars, workshops, conferences

Workshops organised (from one to two days) ¹ :	42
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Collaborations

¹ Some training activities are combined for teachers from the EU-Dap target age group and from older pupils. We took the proportion of 48% for the intended target group, based on the clear numbers of teacher manuals ordered in the report period: 328 manuals for EU-Dap Unplugged (Secondary school first grade), 254 for pupils 15-16 yr (second grade) and 100 for pupils 17-18 yr (third grade).

The EU-Dap Unplugged program is taken up in the project “lifeskills trainen”, financed by the Ministry of Public Health of the Flemish Community. It funds the training of teachers in primary and secondary schools. A project was granted for 2008-2009 and for 2009-2010, the next school year is pending.

Media contacts /Websites

National media gave much exposure to the introduction of the EU-Dap Unplugged program in spring 2008, and again in winter 2009, reporting on the EU-Dap closing conference in Rome. The focus in the latter articles or interviews was on evidence base and cautiousness for iatrogenic effects of prevention in schools. A detailed list of Media exposures mentioning Unplugged is provided below:

Media Exposure mentioning UNPLUGGED EU-Dap		
National newspapers		
<i>De Standaard</i>	07/05/08	140.000 euro voor drugspreventieproject in Vlaamse scholen
<i>De Morgen</i>	08/05/08	Jongeren gebruiken kwart minder genotsmiddelen door Unplugged
<i>HLN.be (excl op)</i>	13/05/08	Drugpreventie op school werkt
<i>Het Nieuwsblad</i>	08/05/08	Antidrugslessen op school helpen echt
<i>Het Nieuwsblad</i>	18/03/09	Joint per dag is geen probleem’
<i>Gazet van Antwerpen</i>	08/05/08	140.000 euro voor drugspreventie in scholen
<i>Het Nieuwsblad</i>	24/05/08	Drugsproblematiek krijgt hoogste prioriteit
<i>De Standaard</i>	26/11/09	EU-Dap conference & iatrogenic preventie
<i>De Morgen</i>	26/11/09	EU-Dap conference & iatrogenic preventie
<i>Belang van Limburg</i>	26/11/09	EU-Dap conference & iatrogenic preventie
<i>Het Laatste Nieuws</i>	26/11/09	EU-Dap conference & iatrogenic preventie
<i>De Gazet van Antwerpen</i>	26/11/09	EU-Dap conference & iatrogenic preventie
National Television and Radio		
<i>de.redactie.be</i>	07/05/08	De Sleutel gaat interactief tegen druggebruik
<i>AVS</i>	07/05/08	Project Unplugged voorgesteld
<i>Q Music</i>	07/05/08	Unplugged in het nieuws
<i>Q-Music</i>	26/11/09	EU-Dap conference & iatrogenic preventie
<i>Radio 1 Peeters & Pichal</i>	26/11/09	EU-Dap conference & iatrogenic preventie
<i>Radio 2 News</i>	26/11/09	EU-Dap conference & iatrogenic preventie
<i>Studio Brussel</i>	26/11/09	EU-Dap conference & iatrogenic preventie
<i>Vtm.be</i>	01/12/09	Unplugged in het nieuws
<i>K-Zoom youth news</i>	01/12/09	Film Unplugged in de klas

National educational magazines		
<i>Wablieft</i>	16/04/08	Kinderen aan de drugs
<i>Neuron</i>	01/05/08	Jongeren en drugs: (g)een probleem?
<i>Impuls (KBC)</i>	05/09/08	Jouw kind (nooit) aan de drugs?
<i>Huisarts</i>	15/05/08	Unplugged: drugspreventie in scholen
<i>Artsenkrant</i>	12/12/08	Algemeen directeur neemt afscheid
<i>Klasse voor leerkrachten</i>	01/12/08	“Neen zeggen is niet genoeg” (int trainer Johan Van de Walle)
<i>Schooldirect (e-platform voor directies)</i>	07/05/08	Drugspreventie Unplugged
<i>Tochtgenoot (don bosco onderwijscentrum) bericht aan godsdienstleerkrachten</i>	01/11/08	Drugspreventie Unplugged

8.3. L’Aquila, Italy

Training

From October 2006 to September 2008 the centre organised four training courses involving 30 teachers.

Program implementation

16 classes (2006-2009) participated to Unplugged and have been monitored.

In the 2009 other classes had being involved, but the educational intervention has been interrupted since the earthquake.

8.4. Poznan, Poland

EU-Dap Materials

The materials have been sent to the most relevant institutions.

Training

One person has been trained at the TOT International Eudap training. One training course has been organised involving 34 teachers.

Seminars, workshops, conferences

The materials have been presented in a National press conference.

Moreover the Polish centre organised two conferences in Poznan targeted to health promotion personnel and school teachers.

8.5. Prague, Czech republic

The Czech partner was in a very specific position to almost all other EU-Dap group members. The Czech Republic became a new member of the EU-Dap group at the beginning of year 2007, and also was with no history of CSI programs implementation. Therefore special emphasis was put on adaptation and also dissemination, implementation and other forms of propagation of CSI programs - especially Unplugged - in various regions of the Czech Republic during the project.

EU-Dap Materials

The guide “Preventing Substance Use among Students: A guide to successful implementation of Comprehensive Social Influence (CSI) curricula in schools” was disseminated within the WP7 evaluation. After the evaluation phase, the Guide was further disseminated to school preventive workers and other professionals in the field of prevention of drug use and other types of risk behaviour.

EU-Dap2 CSI & Unplugged materials were distributed in the frame of the International Conference of Primary Prevention of Risk Behaviour held in November each year (www.pprch.cz).

Training

School prevention workers were systematically trained in Unplugged in various regions of the Czech rep.

Program implementation

The emphasis was put on dissemination of CSI programs (Unplugged) in the Czech republic.

Unplugged was continuously presented to prevention professionals.

The Ministry of Education of the Czech Republic also insisted on evaluation of the Unplugged prevention program. The evaluation took place in 41 schools in the Czech Republic (approximately 1000 pupils) as experimental group and 42 schools (approximately 1000 pupils) as control group, involving 41 school prevention workers. This evaluation was conducted apart from the EU-Dap2 project.

Seminars, workshops, conferences

International experts from the EU-Dap group EU-Dap2 group and findings of the EU-Dap2 project were repeatedly presented to the Czech prevention professionals at the International Conference of Primary Prevention of Risk Behaviour held in November in years 2007, 2008 and 2009 (www.pprch.cz), and also at other national (eg. National Conference of the Association for Addictive Diseases of the Czech Medical Association of J. E. Purkyne and the National Conference of the AT Section of the Psychiatric Association of the Czech Medical Association of J. E. Purkyne) or regional conferences (eg. Drug conference of the Central Bohemia region).

Press conference “EU-Dap2: Model primární prevence užívání návykových látek na základních školách” was held on 2nd of January 2009 at the Faustův dům, Karlovo nám. 40, Praha 2. Project EU-Dap2 was introduced, its outcomes, as well as preliminary results of the program “Unplugged” evaluation by project team members, representatives of the Czech partner coordinator institution (eg. Dean of the 1st Medical Faculty, Charles Uni, prof. Zima, Ministry of Education (head of prevention unit of the Ministry of Education, Dr. Doležalová).

Collaborations

The project was implemented in close cooperation with the Ministry of Education of the Czech Republic, local governments and their representatives (Central Bohemian Region; Zlin Region; South Moravian Region) who also financially supported the project.

8.6. Stockholm, Sweden

Between May 2006 and December 2008, the EU-Dap Project was run by the Stockholm Centre for Public Health, Tobacco Prevention, Stockholm County Council. Under the remaining time the project was run by the Department of Public Health Sciences at the Karolinska Institutet. However, the legal and economic responsibility remained at the Stockholm County Council. Besides what is already described in the corresponding WP, the following activities took place within the EU-DAP 2 project in the Stockholm region and Sweden as a whole.

Training

Between October 2007 and November 2009 the centre organised three locally implemented teachers' trainings.

Media contacts /Websites

Posters and material from the project were exposed to

- Exhibition "Skolforum" (2008 och 2009), large happening presenting pedagogic material
- Permanent exhibition "Hälsopunkt" at the Stockholm Centre for Public Health premises
- Permanent and updated project's description at www.folkhalsoguiden.se
- Selected information at www.tobaksfakta.org
- A link to the Dissemination guide at www.Fhi.se, the website of the National Institute for Public Health
- A link in the website www.teachersagainsttobacco.org, held by the ONG "Teachers against Tobacco"
- Information on EU-DAP was included in an electronic letter that is routinely sent to primary health care personnel in Stockholm region

The Catalogue "Best Practice i Folkhälsoarbetet", a list of evaluated prevention programs issued by the Stockholm County Council, includes "Unplugged".

Seminars, workshops, conferences

"Unplugged" and its evaluation were presented during:

- Three seminars dedicated to school personnel /Hälsa lärande och trygghet (2007-2008)
- Meetings and seminars within the Stockholm Centre for Public Health, among others presentation at the working group for School Youths' Health (BUF)
- Meeting with stakeholders December 2008
- Different meetings with schools

- Lecture at the Fryshuset (December 2009)
- Meeting with municipalities' personnel appointed with Drug prevention activities (spring 2008)
- Regular meetings with the Swedish Network against Tobacco
- Three seminars with master students at the Karolinska Institutet (January 07; September 08; September 09).

8.7. Thessalonica, Greece

During the time period of 1/02/2007-31/12/2009 the following dissemination activities have been conducted:

EU-Dap Materials

The “Unplugged” manual (500 copies) and the Guide “Preventing Substance Abuse among Students: A guide to successful implementation of Comprehensive Social Influence curricula in schools” (500 copies) has been sent out to policy makers, key holders of the Ministry of Education and Health, Network of Prevention Centres in Greece, to schools participating in the survey and to parent organisations.

An informative leaflet about the new products of Eudap has been printed and distributed in 500 schools and in the local social services.

Training

An international meeting to train colleagues of the new partner of Eudap (Chez Republic) has been organized.

The centre also organised two training sessions for mental health and prevention experts, involving 61 participants and 11 training sessions, involving 136 teachers.

Program implementation

40 classes, and 882 students participated in Unplugged.

Media contacts /Websites

Press release of Unplugged and the guide in two different Greek prevention magazine

Presentation of Unplugged and the Guide on PYXIDA's website (www.pyxida.org.gr)

Three presentations of the Eudap study in Pyxida's newsletter.

Seminars, workshops, conferences

“Unplugged” and its evaluation were presented during:

- One local conference for school principals (45 participants)
- One conference and 1 workshop for school health promotion counsellors (200 participants)
- One workshop for youth workers (20 persons)
- One presentation of the national conference on “Drug prevention in schools” (200 persons).

8.8. Torino and Novara, Italy

The Piedmont Centre for Drug Addiction Epidemiology (OED) and the Avogadro University Department of Clinical and Experimental Medicine supported the dissemination of *Unplugged* in all Piedmont secondary schools.

After the evaluation phase, OED is actually committed in disseminating and supporting the implementation of *Unplugged* in the Piedmont region. The OED staff is also involved in teachers training and trainers training on *Unplugged* program.

During this period - especially for the project “Implementation of EU-Dap (European Drug Addiction Prevention) project at population level”, funded by the Compagnia di San Paolo - the following dissemination, promotion and training activities have been conducted:

EU-Dap Materials

1000 copies of the Unplugged toolbox, containing the teachers’ manual, 25 copies of the students’ workbook, the cards, instructions and the evaluation sheets, have been printed. Informing material about the project Unplugged and about the training for the teachers has been sent to all secondary schools of Piedmont (n=600) and Public Health Services (n=8); 20% of the schools have been randomly contacted in order to reinforce the message.

Training

45 schools contacted the OED in order to obtain information about the training of teachers;

11 health department contacted the OED to attend the training of trainers;

Between august 2009 and march 2010, in Piedmont 8 teachers trainings were activated in Piedmont and 180 teachers were trained. 1 teachers training course was activated in another Italian region (Abruzzo) and 30 teachers were trained;

In the same period in Piedmont 2 trainers trainings have been activated and 2 in another Italian region (Latium): in both regions 110 trainers were trained.

Seminars, workshops, conferences

In collaboration with the Regional Health System, the Regional School Office organized 10 provincial seminars, where *Unplugged* has been presented as regional best practice selected by the regional health - school committee.

Collaborations

The OED staff works in conjunction with the EU-Dap faculty, that creates a centrally managed European network of professionals with the responsibility to update and supervise contents and methods of Unplugged application.

8.9. Wien, Austria

The centre of Wien, Austria did not provide information on dissemination activities.

9. EU- Dap 2 international dissemination

Report, Peer van der Kreeft, De Sleutel and University College Ghent, Belgium.

As a significant example of an evidence based programme of substance abuse prevention the NGO Mentor International Foundation proposed the adaptation, piloting, implementation and evaluation of the project in a further 5 countries to ascertain if the programme could be successfully adapted and have similar positive impact to different countries and cultures. Mentor submitted an application for funding to the IKEA Social Initiative, which was granted for 2009 and 2010.

Almost simultaneously, UNODC-ROMENA (Regional Office for the Middle East and North Africa), proposed a dissemination project for six countries in its region, in the framework of a EU-funded “Bridging The Gap” North-South project. The interest of UNODC and Mentor was raised during their participation in the EU-Dap coordination meeting in Vienna “implementation at population level”. The second day of that meeting was dedicated to “meeting relevant stakeholders in international prevention research”.

9.1. Mentor Unplugged, funded by the IKEA Social Initiative

The institutes that were approached by Mentor and took up the lead in five countries were

- Croatia: Faculty of Education and Rehabilitation Sciences, University of Zagreb
- Kyrgyzstan: Public association “White crane”, Bishkek, Kyrgyzstan
- Lithuania: Mentor Lithuania, Vilnius
- Romania: National Drug Agency, Ministry of Administration and Interior, Bucharest
- Russia: NEI Institute of special education and special psychology, Saint-Petersburg

The programme was developed and implemented by the Project Team Leaders, Peer van der Kreeft, Daniel Pellaux and Jeff Lee with input from parent support specialist Maro Vassara, and from the project evaluator Federica Vigna-Taglianti.

Stakeholders interest on national level

Each country faces different challenges in developing the project. These include political issues that arise nationally and locally that affect organisational activity as well as the more specific challenges of introducing training and curriculum development into the school system.

In spite of drug abuse being a major issue for all countries the development of a structured approach to delivering prevention in schools is new for most and certainly not an explicit part of expectation and demands on schools or teachers. Parental involvement, whilst agreed as necessary is new, and as throughout the world engaging parents to attend meetings and support the school’s work is not easy.

Connection to the EU-Dap Faculty to train the trainers

Training is increasingly acknowledged as an essential component for developing schools’ and teachers abilities to undertake prevention both from a content and methodological perspective. The training workshops have been received enthusiastically in all countries but they have had

to overcome the demand for teacher time, often in holidays, to attend; no financial incentive; increased demands on teacher workload; and motivation to undertake prevention when it is not given sufficient support at the political level. However the link of training with specific resource material has been very well received and teachers have generally left their training motivated and keen to use the programme and try out the methodologies. Some of the trainers that are engaged in the five countries already participated in the international trainers' network of the EU-Drug Abuse Prevention Faculty.

Adaptation of the materials in five languages

The challenge of adapting and translating the materials has also been substantial particularly as all have tried to ensure fidelity with the original programme. The outcomes appear to have been successful and all countries have produced their own culturally and linguistically appropriate resource material. The conscientious and rigorous analysis of the *Unplugged* texts, simultaneously in five countries, has led to a spin-off of manual improvements that will be disseminated to many other centres throughout Europe that are working with EU-Dap materials. A Mentor internet forum served as an important and practical communication instrument for this.

Preparing the EU-Dap study

Curriculum development is always a challenge to schools particularly in an environment where educational change and development is rife as it is in the countries involved. New developments in other areas of the curriculum have meant that finding schools to be involved has not always been easy. The demands of time on teachers and for lesson time is always a major block to school change and development. However this has been negotiated in the countries and sufficient schools have become involved for the work and evaluation. Obtaining control schools is another issue that has had to be addressed as many schools want to be involved in the training and implementation from the outset. Again this has been negotiated well in all countries, and the anticipation on training teachers and obtain *Unplugged* materials after the study period has motivated many control schools.

The evaluation work has proceeded with the excellent support and input from the Project Evaluator at OED and challenges that have arisen from the rigorous and often demanding and new expectations for evaluation for certain of the countries have been overcome. It therefore is progressing well and should lead to important and interesting outcomes in the fall of 2010.

Implementation at school level

There are many challenges ahead as the countries now focus on their implementing schools and the feedback and evaluation from this process. There will need to be a significant focus on reporting outcomes and preparing for dissemination and sustainability of the programme to hopefully, subject to positive evaluation outcomes, it can be extended to more schools and children in other parts of each of the countries. This will require support to each of the organisations currently involved. Part of this will be through development of the stakeholder at government, institution and organizational level support already identified and which has been a further significant achievement in the countries involved.

International and national networking

The project team maintained close liaison and support with the country organisations. The level of support and feedback has been highlighted by the country organizations as a major strength of working with the project. This has also been true of the support provided by the evaluator of the project who has worked extremely hard to ensure all countries feel confident in undertaking an evaluation process which is of a rigorous nature to which they have not been accustomed.

In each country the centres are at the intermediate stage of the project already extending the number of stakeholders with the focus on future dissemination of Unplugged. Whilst, as anticipated, the process has meant adjustments have had to be made to the original design and demands of the project as proposed in order to meet the realities with which each country has been confronted the general picture at this stage of the project is of significant hard work and potential for major achievement in a new but significantly necessary development for each country.

9.2. ROMENA project and the Arabic version of Unplugged

The United Nations team working in the Middle East and North African region managed to form a group of teams from six countries: Morocco, United Arab Emirates, Egypt, Jordan, Kuwait, Lebanon.

Stages to guarantee quality in disseminating Unplugged

UNODC gathered teams from those and other countries in Sharm el Sheikh to propose the Bridging the Gap project including proposals for treatment, outreach or substation interventions and the Unplugged programme. Six teams participated in a kick-off meeting in Lebanon to prepare for these project stages:

- Identification of a national backup group to overview the adaptation, development, implementation and evaluation of the project.
- Working with an operational project team to adapt *Unplugged* to meet the local needs and to identify trainers of teachers, in close cooperation with Mentor and EU-Dap.
- Producing national translated and adapted programme material for training and for use in the school setting.
- Identifying schools for implementation.
- Teacher training followed by an agreed implementation period for the programme in agreed conditions.
- Conducting a randomised controlled evaluation of the effectiveness in collaboration with EU-Dap, in 1 or more countries.
- Disseminate to further schools with a view to national implementation of the programme.

Training issues specific to the region

A TOT Training of Trainers session was organized in Amman and one of the trainers joined the EU-Dap Faculty trainings and activities. In this project the NGO Mentor international foundation is also contributing by Mentor Arabia that delivered the translation. It has been reviewed by country

delegates, so far feedback indicates that 90% is applicable to all countries. Mentor will further support and fund the adaptation process.

Considering the training model, some changes are being evaluated in this region: the three days basic training will be followed by a one day booster training after 2-3 weeks focusing on drug prevention, parental meeting and specific lessons. After the national workshop being conducted for the first time by the newly trained trainers, the project organizes a cluster training to refocus and share ideas and expertise based on lessons learned. A suggestion was raised to have trainers in couples (one male and one female) where appropriate and available.

EU-Dap has a refreshing a-typical view on copyright...

In both projects, the project promoters as well as the national institutes and the governmental institutes they consulted were appreciating very much the EU-Dap policy on copyright and allowances for use of the materials. The EU-Dap material, in all the language versions, remains intellectual copyright of OED Torino. EU-Dap wants it to be public domain, and guarantees that no financial obligations or profits may be liaised with the copyright on EU-Dap material. This, so it appeared is not customary in international program design and dissemination...



Children in Kyrgyzstan with their Unplugged materials ready to use

10. The EU-Dap Faculty standardizing prevention training

During the EU-Dap II project the centre responsible noticed that the trainers involved in the dissemination needed more background and methodological support in order to sustain the quality of the workshops for teachers. The project coordination meeting 7-8 June 2008 in Stockholm decided to set preparatory steps for an application for funding of such a process. But in the meantime the group delegated partners Peer van der Kreeft and Maro Vassara to establish a 'Faculty' within the opportunities of the current project that could furnish the local trainers with materials and support connected to the improved intervention tools. The Faculty is since then installed at the University College Ghent in Belgium.

10.1. Training as a quality control instrument

The overarching goal of the EU-Dap TOT faculty is to ensure Quality Control of efficacy tested school-based programmes based on a Comprehensive Social Influence model during the dissemination stage. In such a prevention programme the interactive training of the teachers is an evidence based and indispensable component. The trainers have to be trained themselves in a 'TOT' concept, and with the diversity of languages and cultures in our EU, the 'master trainers' responsible for this Training Of Trainers must rely on a standardised methodology, evidence base and high quality. This is realised by the EU-Dap drug abuse prevention network and the evidence based Unplugged prevention programme.

The project "EU-Dap TOT network: European Drug Abuse Prevention training of trainers network" is co-financed by the European Commission, Directorate-General Justice, Freedom And Security for the period of 23 December 2008 until 23 December 2011.

The EU-Dap centres that established the RCT-study were joined by other interested prevention centres so that 9 centres in Belgium, Germany, Italy, Czech Republic, Greece, Poland, Sweden, Spain and Austria are currently disseminating the programme in their countries. Other EU-member states have expressed their interest to join them. The concept is tested and sound, the material is translated and distributed, the centres are each in their country taking care of training of teachers. For further dissemination the quality control of the training is necessary. The realisation of it is a contribution to capacity building, standardisation and sharing or disseminating expertise within the Drug Prevention and Information programme.

10.2. A group of master trainers on EU level

The Faculty is creating a centrally managed European network of professionals with the responsibility to update and supervise contents and methods of programmes application. A particular group in this network consists of master trainers, one in each involved country. They are responsible for the design and spreading of the training to be delivered to the final providers (teachers in schools).

Inter-agency cooperation

The trainers and master trainers are gathered in trainings, seminars and ‘cluster trainings’ of a smaller group of trainers from one geographical area of the EU. The training events are also open to interested parties from outside the European Union. Trainers from Lebanon and Russia have for example participated as such. Besides this physical gathering of people, the Faculty also delivers a digital platform where not only documents to print are exchanged but also short video shootings of training issues or examples of bringing methodological directions into practice. Trainers, connected to a national or regional institute, are in this way stimulated to exchange their know-how and expertise. It contributes to more cooperation between prevention agencies.

Certified trainers of teachers on local level

The Faculty also creates a locally managed (country or centre level) network of certified trainers, further responsible of training and certification of the teachers in conjunction with the EU-Dap centres responsible for dissemination of the Unplugged programme. 15 local networks, lead by local institutions, are foreseen.

10.3. Faculty broader than Unplugged

The network that the Faculty establishes is built upon the mutually implemented programme Unplugged. This strengthens the standardization of quality control. Once established however, the network is as well on the EU as on the local level capable to operate with other prevention programmes. The availability of an efficient network of Trainers of Trainers, able to implement quality standards and deliver certification is an important outcome and contribution to the efforts of the EU for assuring qualitative and evidence based drug abuse prevention programmes.

Partners

The faculty is led by the University College Ghent in Belgium, and embraces four core partners: OED Osservatorio Epidemiologico delle Dipendenze (Italy), Charles University in Prague, Adiktologie (Czech Republic), Pyxida (Greece) and the Mentor Foundation UK (United Kingdom). It has in 2008 and 2009 established the basis for two new projects involving new countries that want to implement the Unplugged programme.

EU-Dap Faculty results

The network Faculty activities will lead to a robust standardized training component of the implementation of Unplugged in 15 Member States, with a significant number of trained trainers, having the capacity to perform 6 trainings for 20 teachers each by the last year of the project period.

The EU-Dap network will have the capacity to train and certify 7200 teachers by the last year of the project period, each able to teach 25 pupils in the Unplugged prevention programme, with a sustainability of implementation during several years.

An imminent result is a solid European network of trainers with national cascade trainer groups who train and certify the interactive and effective implementation of a drug prevention programme.

10.4. Translation and adaptation

Because training the trainers is a building stone of programme dissemination, the EU-Dap coordination group decided to delegate the process support for new programme partners who want to disseminate Unplugged in a new country, to the Faculty.

Different cultures in and out of Europe

The enrolment of new countries poses some new challenges to the researchers and implementers. We are aware of the different cultural, historical, judicial background of those new countries. And differences with Kyrgyzstan, Russia, Jordan, Kuwait or the United Arab Emirates are far more bigger than the internal differences among the seven European trial countries. We should consequently be cautious but receptive for changes requests from those countries. The tension between fidelity to the program content and fit to a new target population is a topic that has taken an important place in the activities of the Faculty.

Adapting the surface or deep structure

Considering the adaptation, we differentiate between surface and deep structure. Surface structure involves matching intervention materials and messages to observable “superficial” characteristics of a target population. Think of language and idioms, example stories, appearance of role models, places, product brands, food, clothing and so on. The deep structure involves incorporating the cultural, social, historical, environmental, and psychological forces that influence the target health behaviour in the proposed target population. Harmonizing the surface structure with the program content has more the function of increasing the receptivity among the target group, whereas deep structure determines the impact.

Unplugged: culturally sensitive

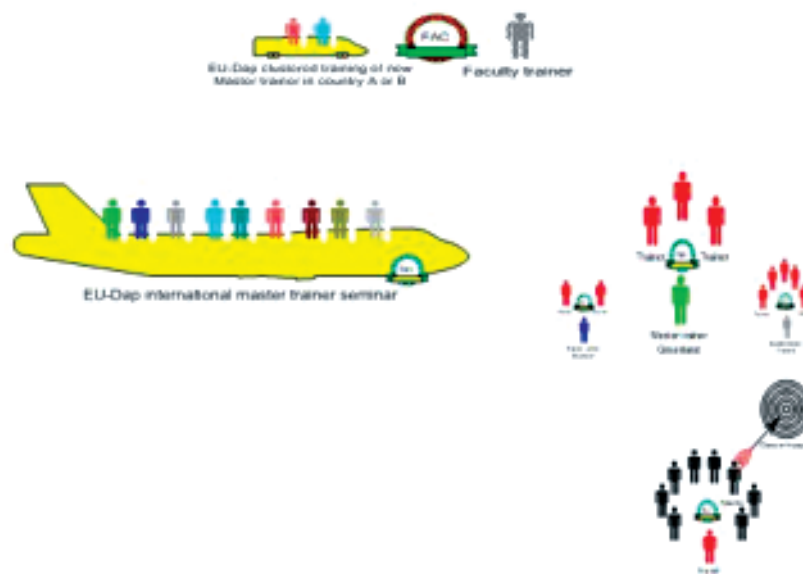
The Unplugged programme already has a cultural openness, because it is designed and proven to be effective in very different cultural settings already: the first seven partners came from Greece as well as Sweden and Italy.

Practical steps in the adaptation process

In adapting and translating the written documents to be used in the class, the starting point is the original English Unplugged version. First this is literally translated by a professional translator. This version is explored by the national centre. They use several methods for this: focus groups, teachers trying out in the classroom, or expert’s opinion. Whatever method applied, the centre keeps track of the changes they want to do. There is regular consultation with the Faculty team. Sometimes more clarification is needed for certain concepts, certain methodology or instruction might not be clear, there may be a lack of understanding the explicit content of information on drugs. This back and forth communication process at the end leads to the translated and adapted version to be used in the classroom.

Consensus based on reported changes

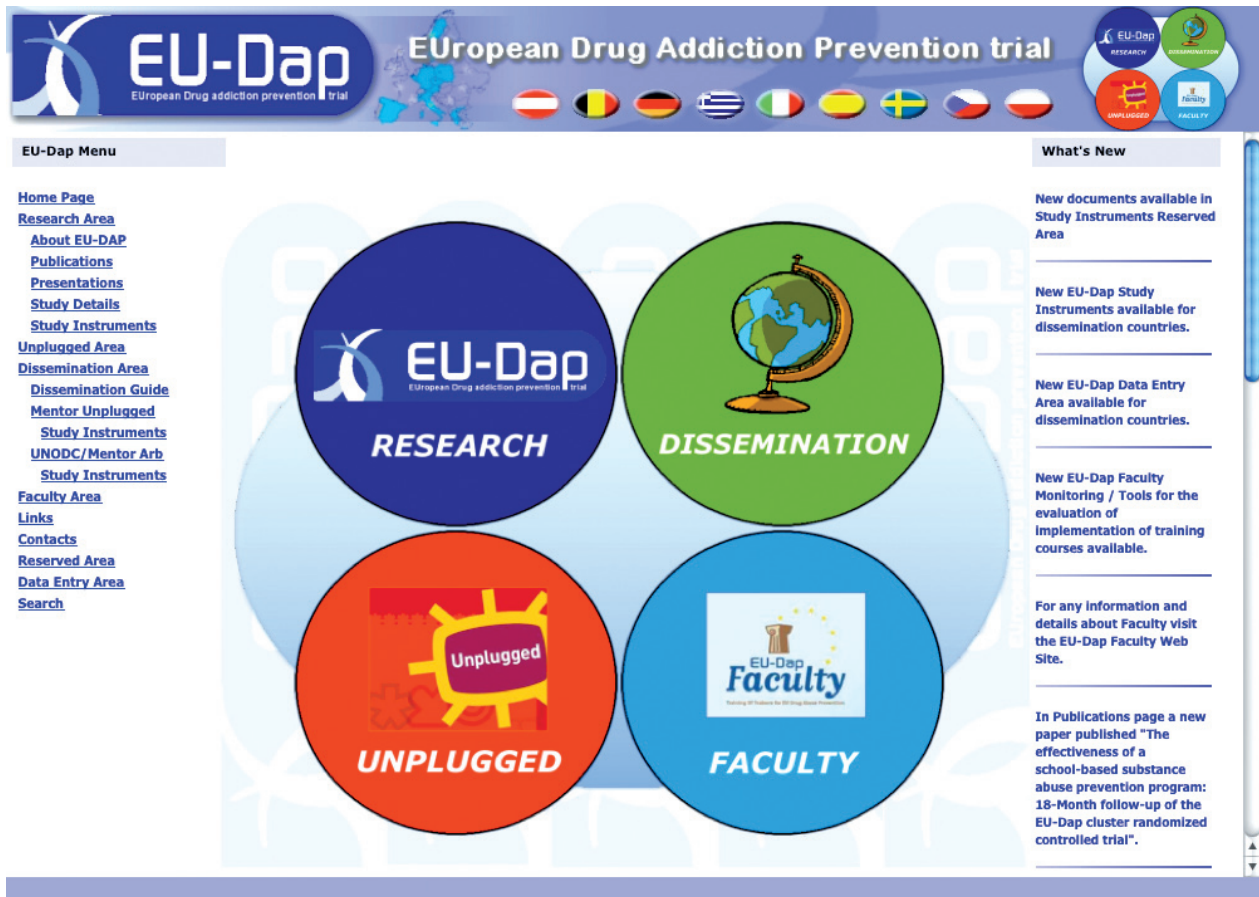
The above procedure is based on the changes or proposed changes as reported by the national centres, not on back-translation. So far the national centres and the Faculty always came to a consensus and the judgement of the Faculty team that the version is not changing ‘deep structure’ elements of the programme determine it to be an adaptation of the EU-Dap programme. In the hypothetical case that an institute would make adaptations that are not agreed with by the Faculty, the institute would have the right to edit the version as it wants it to be, but it does not carry the EU-Dap logo or name.



Graphical presentation of EU-Dap Faculty components: the international master trainers seminar, regional cluster trainings of trainers, the certification of trainers and teachers, bigger or smaller local trainers teams, the trainer and his group of teachers, and the final target population: the pupil.

11. The EU-Dap website

The web site www.eudap.net has the aim of putting all the materials produced by the EU-Dap easily available. The main home page of the web site is shown in the figure below.



Basically there are *four* different “*thematic areas*” and a number of general services purpose pages. Each of these *thematic areas* identifies different access profiles, which correspond at different users and accessible materials. In details there are the following:

11.1. The website Research Area

- What: study results, publications, presentations, etc.
- Who: researchers, etc.
- Here it is possible to find a detailed description of the aims of the EU-Dap project, all populations involved, all partnerships and all different workgroups defined in the phases of the project, a reference to the project publications, all relevant EU-Dap spreading events documentation and oral communications, an introduction to the implementation of the “Unplugged” programme and dissemination of the EU-Dap results and best practices, available multilingual study instruments such as Study Protocol, Process Monitoring, Study Questionnaire, Anonymous code self generation sheet.

11.2. The website Unplugged Area

- What: education information, Unplugged materials, etc.
- Who: teachers, headmasters, educators, national and local authorities, etc.
- Here it is possible to find introduction and details about unplugged education multilingual materials such as the Unplugged Curriculum (Teacher's Handbook, Student's Workbook and related cards), all freely downloadable and tested to be effective during the EU-Dap intervention trial.

11.3. The website Dissemination Area

- What: new dissemination projects, etc.
- Who: researchers, trainers, etc.
- Here it is possible to find introduction and details about a multilingual guide, available for downloading, in order to assist in the implementation of Comprehensive Social Influence (CSI) curricula in schools, written by the EU-Dap consortium with specific sections for national and regional authorities, principals and teachers, all details about on going dissemination initiatives (Mentor Foundation / Ikea, Unodc Romena / Mentor Arabian) and related study materials available for downloading.

11.4. The EU-Dap Faculty Area

- What: training information, Faculty materials, etc.
- Who: trainers, etc.
- The EU-Dap Faculty is a centrally managed European network of professionals with the responsibility to update and supervise contents and methods of effective programmes application. The network is based on master trainers, one in each involved country. They are responsible for the design and spreading of the training to be delivered to the final providers (teachers in schools).

11.5. Other web pages

The other pages (Links, Contacts, Reserved Area, Data Entry Area, Search) should be considered as general services for the above mentioned four thematic areas. In details:

- **Links:** a by country list of links related to the world of prevention.
- **Contacts:** a by country list of all partners involved in EU-Dap project and dissemination. For each partner, the website, a responsible and one or more contact person have been provided.
- **Reserved Area:** different access profiles could access different reserved areas and downloadable documents. Actually five different areas/users have been defined: schools, partners, unplugged documents, study instruments documents, faculty documents and tools.

- **Data Entry Area:** last but not least, from this further reserved area, dissemination partners could directly fill in the EU-Dap study questionnaires in a centralized database, located in Turin, avoiding paper travelling through different countries and allowing a central database design and management.
- **Search:** allow to look on site for a particular document.

In general EU-Dap web site is optimized for Microsoft Internet Explorer 7 or higher and for Mozilla Firefox 2 or higher and it work preferably at 1024 x 768 resolution. The site has been validated for W3C CSS and XHTML 1.0 Transitional. Less graphics should allow more speed in loading pages, greater areas for textual information and a thematic area navigator on the top right of the screen should make easier to access EU-Dap pages and all the different available areas.

12. Conclusions and new perspectives

12.1. Unplugged: an effective school-based program

The exposure to the program *Unplugged* is associated with a prolonged decreased risk for episodes of drunkenness and for cannabis use, especially on a frequent monthly basis. Moreover, the analysis of the transitions between behavioural stages suggested that the program was effective both in hindering the progression of use and in facilitating regression toward less intensive patterns of use. The size of the decrease is encouraging and sustainable over time. The size of the Number Needed to Treat (NNT) is comparable to that of several effective public health interventions, such as vaccination for flu, treatment of hypertension in the elderly and statins for primary prevention of myocardial infarction (www.shef.ac.uk/scharr/ir/nnt.html) which suggests a favourable cost-effectiveness, given the overall low expenditure of the program.

The effect on daily smoking is large, but it lasts less than 18 months. Looking at the group of baseline non smokers, some significant effect appears to survive at 18 months, but with a small effect size. At the age of the students in our sample, cigarette smoking may be a normative behaviour to a larger extent compared to episodes of drunkenness or using illicit drugs. This may be particularly true in Southern European countries, that accounted for the majority of the population enrolled in this study. A similar explanation was raised by Ellickson (Ellickson and Bell, 1990) for alcohol use in the United States, and indicates that other social influences may play down the effect of any program, in the medium or long-term. This appears to be the more consistent explanation for the fading effect of smoking, and it has to be taken into account in further evaluation and developments of the program.

The disproportion between the influence of a time-limited intervention and the strength of the social influences, is probably the main explanation for the fading effects of the intervention at the 3rd year follow-up. However, loss of power because of high attrition may have prevented the detection of weak positive effects. Further developments of the curriculum must consider adding reinforcement sessions, since message intensity is a key to long term success, as stated by Thomas and Perera (2006) and Sheier and coll. (2001).

12.2. Tools and strategies for the dissemination of effective programs

Virtually all schools in European countries deliver some kind of intervention for the prevention of substance use (EMCDDA 2007). A large proportion of these interventions are not supported by any evidence of effectiveness, and some can be even suspected to have iatrogenic effects. This is the reason why it is important to develop strategies to increase the use of interventions presenting sound evidence of preventive effects.

One of the most important characteristics of the Program *Unplugged* is that it is of “*Public domain*”; i.e. the use of the materials is free of charge. In order to replicate the observed effectiveness, the developers recommend to deliver the curriculum in a format as similar as possible to the released one. Also, we recommend that teachers undergo the specific training offered by EU-Dap trainers at each partner centre. But this is not enough in order to reach a large dissemination of the program.

One of the major deliverables of the project is the “*guide to successful implementation of Comprehensive Social Influence (CSI) curricula in schools*”. This is a tool developed in order to guide policy-makers, teachers and headmasters in the choice of effective interventions for preventing substance use in schools. It has been designed to address the problem of effectiveness of prevention programs and the criteria for choosing effective programs.

The Guide has been piloted in a large international sample of teachers, headmasters and policymakers to evaluate its effectiveness in promoting the adoption of effective interventions. The main results of this study are not completely consistent: no statistically significant improvement in delivering of CSI programs are evident, but, in the same time, an increase of intention to carry out CSI program during next year has been noticed, as well as an increase in the establishment of school policies against tobacco smoking, alcohol and drugs. This partially disappointing result can probably be explained by the limited follow-up time. The process to choose and to carry out a preventive intervention in a class is probably complex. Teachers have to convince other colleagues, to obtain the headmaster's consent, to organise the school schedule, to participate to the training etc. One year from the release of the guide to the evaluation of its effect is probably a too short time to allow the completion of this multistage process.

12.3. What the EU-Dap project adds

The evaluation of prevention programs facilitates the identification of thus excluding from dissemination programs with undesirable results. The event of a theoretically based intervention that, once submitted to a rigorous evaluation, shows iatrogenic effect is far from be rare. A recent example is the Take Care of Your Life (TCYL) project, evaluated in the ASAPS study, supported by the US NIDA, that showed statistically significant iatrogenic effect (Sloboda 2009).

Minimizing the risk of adverse effects, is only one of the reasons why scientific evaluation has a central role in prevention science. The EU-Dap project demonstrated that a team of European researchers and practitioners working together are able to develop, assess and disseminate an effective prevention program. In summary the EU-Dap project as a whole added substantially to the scientific and professional scenario of substance use prevention in Europe:

- a program, available at low cost, likely to achieve medium-term prevention of cannabis use and of alcohol abuse, and short term delay of daily smoking;
- a guide for the dissemination of evidence based programs;
- tens of thousands of students already involved in the program across all partners countries, as well as in other countries ;
- thousands of teachers trained;
- a network of trainers and a faculty devoted to the quality assurance of training;
- a network of developers ready to develop new programs;
- a network of researchers ready to evaluate other programs;
- the involvement of several countries in Eastern Europe (Mentor-Unplugged) and in Arabian Countries (Romana project) in a large dissemination of Unplugged, funded by international organisations;
- 11 centres in 8 countries involved in a successful international research, and several other involved in the sister project Mentor-Unplugged and Romana;

Moreover, the EU-Dap group promoted the foundation of the European Society of Prevention Science (EUSPR – www.euspr.org), that has the objective to promote research in the field of prevention, by cross contamination among fields of public health and among disciplines.

12.4. Challenges for the future of prevention of substance abuse

The substantial success of the project opened many opportunities for research and development. These have been discussed during the *EU-Dap Final Conference: Substance use universal prevention: from evidence to strategies* held in Rome on 17th November 2009. In particular:

- *generalization of effects of prevention programs*: one of the most important limitations of the dissemination of effective programs in prevention is the idea that populations have different risk factors, needs and characteristics, and that results from other contexts are not reproducible. The experience of EU-Dap speaks against this reasoning. A single standardised program, could be delivered successfully in very different contexts and populations, from a small city in Greece, to Spain, Germany, a large town in Sweden. Furthermore, the large replications of trial conducted by the Mentor-Unplugged in Eastern European to South-Asian countries and by UNODC in Middle-East and North African Arabic countries will give us in the next few years the opportunity to study in deep the factors affecting generalisability of programs in really different contexts. The unique starting situation that Unplugged is designed by a multicultural team and not translated from one country to the others is an important influence hereto;
- *the continuous development of Unplugged*: the international network of trainers of the EU-Dap Faculty receives a continue feed-back from the trainers and teachers involved in the dissemination of program in many countries. This gives the EU-Dap network the opportunity for a continuous improvement and updating of the program.. Furthermore, the international dimension of the Faculty, entailing frequent opportunities for scientific exchanges in congresses and seminars, put this group in strategic position for cutting-edge development of new materials, and new interventions;
- *the design of a multicomponent program*: the observation that the effects on smoking were short-lived at odds with those on cannabis use and on alcohol abuse fits perfectly with the model of social influence in shaping behaviours. In fact, smoking is much more normative than cannabis use and alcohol abuse in most countries involved in the study. Therefore, interventions focused on schools, like *Unplugged*, need to be complemented with interventions aimed at de-normalising the targeted behaviour. Scientific evidence from European studies indicates that school environment is an important determinant of the onset of smoking among students (Poulsen 2002), and that school policies can curb the risk of onset (Moore, 2001). There is room for the evaluation of *Unplugged* coupled with interventions targeted to changes in school policies. This could increase the effect size at short term as well as the duration of effect;
- *opening the “black box”*: the research on effects of preventive interventions has been basically pragmatic . Theories have been applied in complex interventions, targeting several mediators at the same time: knowledge, life skills, assertiveness, self-esteem, normative believe etc. The scientific understanding of how programs work is rarely a concern among researchers. The opportunity of the collaboration started in 2009 with the Prevention Science and Methodology Group of the South Florida University, co-funded by the NIDA, supported by the European Monitoring Centre for Drugs and Drug Abuse (EMCDDA) give to the EU-Dap Study Group the opportunity to compare the internal functioning of two programs that, although based on same theoretical premises, worked in a very different way. An in-depth study of the role of mediators in the onset of substance use and in the effectiveness of programs will produce preliminary results during the current year.

12.5. Final considerations

The project EU-Dap 2 has been successful. Not only it reached the objectives defined in the application, delivered concrete instruments for intervention and evaluation to the public domain of the European Union Member States and beyond, but, most importantly, consolidated a network of researchers, practitioners, trainers, deeply involved in research & development activities in the broad field of prevention. This network is now ready for new challenges.

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14.3. Papers in International Conferences

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Vigna-Taglianti F. *Unplugged, a school-based program that prevents substance use among males but not among females*. “Gender differences in public mental health”; 15° EUPHA Conference “The future of public health in the Unified Europe”. Helsinki, Finland, 11-13 October 2007

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14.4. Contributions to national conferences and seminars

Adámková T. *Program EUDAP – informace o realizaci a evaluaci*. Paper at 6. krajská protidrogová konferenci. Měřín, Czech Republic, 1-3 December 2008

Adámková T, Miovska L, Gabrhelik R, Miovsky M. *Projekt EUDAP2: Preventivní metodika*

Unplugged. Workshop at V. ročník Česko-Slovenské Konference primární prevence rizikového chování: Kam kráčí(š), primární prevence? Měříň, Czech Republic, 10-11 November 2008

Adámková T, Miovská L, Gabrhelík R, Miovský M. *Projekt EUDAP2: Preventivní metodika Unplugged. [EUDAP2 Project: Preventive Methodology.]*. In: Šucha, M. (Ed.) *Kam kráčí(š) primární prevence?* Sborník abstrakt. Univerzita Karlova v Praze, Praha, Czech Republic, 2008

Faggiano F. *Indicatori utili alla valutazione degli interventi di prevenzione, cura e controllo del tabagismo*. Valutazione degli interventi di prevenzione. Regione Lombardia e Università di Pavia. Milano, Italy, 15 December 2006

Faggiano F. *Le evidenze di efficacia di interventi universali. La prevenzione dell'abuso di sostanze*. Roma, Italy, 17 November 2009

Faggiano F. *Strategie e interventi per la prevenzione primaria delle dipendenze patologiche*. XXXII Congresso Annuale della Società Italiana di Epidemiologia. Milano, Italy, 17 October 2008

Faggiano F, Cuomo GL, Fabiani L, Panella M, Siliquini R, Vigna-Taglianti F, Zunino B, Di Modugno D, Vitale L, Vadrucchi S. *Valutazione di efficacia di un programma scolastico contro fumo, alcol e droghe in Europa: primi risultati dello studio EU-dap (European Drug Addiction Prevention trial)*. Poster per il congresso nazionale del CIPES "Promozione ed educazione alla salute fra globalizzazione ed individualismo: partecipazione, integrazione, intersectorialità". Cagliari, Italy, 16-18 March 2006

Faggiano F, Vigna-Taglianti F. *Strategie e interventi per la prevenzione primaria delle dipendenze patologiche*. XXX Congresso dell'Associazione Italiana di Epidemiologia. Milano, Italy, 4-6 October 2008

Mioviský M. *Efektivní primární prevence užívání návykových látek: současný stav výzkumu a praxe*. Paper presented at the conference s mezinárodní účastí Novinky v pedagogické a školní psychologii spojenou s výroční konferencí Asociace školní psychologie ČR a SR. Zlín, Czech Republic, 30 August – 1 September 2007

Mioviský, M. *Projekt EUDAP: nová alternativa pro školní preventivní programy*. Workshop at the conference s mezinárodní účastí Novinky v pedagogické a školní psychologii spojenou s výroční konferencí Asociace školní psychologie ČR a SR. Zlín, Czech Republic, 30 August – 1 September 2007

Pavlovská A. *V první linii peer programu aneb Výhody a limity vrstevnického preventivního programu*. Konference primární prevence rizikového chování. 2008

Salmaso S. Conferenza CIPES/AIES "Promuovere la cultura della salute nella comunità, nella scuola, nei servizi sanitari". Catania, Italy, 5-6 November 2009

Salmaso S, Vadrucchi S, Vitale L, Calcagno D, Giaccone P, Vigna-Taglianti F, Scatigna M, Fagiani L, Zunino B, Cuomo GL, Faggiano F ed il Gruppo EU-Dap. *Unplugged, un programma scolastico efficace per la prevenzione dell'uso di tabacco, alcol e droghe tra gli adolescenti*. November 2009

Scatigna M, Gigante R, Bernardi D, Sementilli G, Fabiani L, Faggiano F e Gruppo Di Coordinamento Eudap. *Attività Fisica e uso di sostanze negli adolescenti*. Oral Communication, 42° Congresso della Società Italiana di Igiene e Medicina Preventiva (SitI). Catania, Italy, 27-30 October 2006

Vadrucci S, Vigna Taglianti F, Calcagno D, Giaccone P, Vitale L, Salmaso S, Scatigna M, Fagiani L, Van der Kreeft P, Vasara M, il gruppo di lavoro EU-Dap, Faggiano F. *Unplugged un programma scolastico per la prevenzione dell'uso di sostanze*. Poster per il convegno "Il giardino segreto - La salute psicologica in adolescenza". Venaria, Italy, 15-16 June 2009

Vadrucci S, Vigna-Taglianti F, Cuomo GL, Fabiani L, Scatigna M, Vitale L, Bighiani S, Fedele M, Siliquini R, Zunino B, Faggiano F, e il gruppo di studio EU-Dap. *EU-Dap: un efficace programma di prevenzione scolastica dell'uso di tabacco, alcol e droghe*. Poster per il Convegno del CCM, "Verso una società libera dal fumo. Le tre P: progressi, problemi, prospettive". Roma, Italy, 24 January 2008

Vigna-Taglianti F. *I programmi scolastici per la prevenzione del fumo negli adolescenti*. Comunicazione orale in occasione della Giornata nazionale del CCM, seminario "Sanità Pubblica e EBP. Dall'evidenza alla pratica: cosa funziona in Sanità Pubblica". Roma, Italy, 3-4 July 2006

Vigna-Taglianti F. *I programmi scolastici per la prevenzione del fumo negli adolescenti*. Seminario per il Corso ECM "La prevenzione basata sulle evidenze: un elemento dell'evoluzione delle attività del Dipartimento di Prevenzione". Novara, Italy, 15 October 2006 and Borgomanero, Italy, 15 December 2006

Vigna-Taglianti F. *L'efficacia dei programmi di prevenzione dell'uso di droghe, tabacco ed alcol negli adolescenti*. Presentazione orale al Ministero della Solidarietà Sociale, seminario "Crescere indipendenti. La prevenzione: quali modalità di intervento". Roma, Italy, 25 June 2007

Vigna-Taglianti F. *L'efficacia dei programmi di prevenzione primaria dell'uso di sostanze tra gli adolescenti: evidenze e studio EU-Dap*. Presentazione nell'ambito del Corso ECM "La prevenzione delle Dipendenze Patologiche in ambito scolastico: Linee di indirizzo ed evidenze scientifiche" organizzato dal SerT di Modena, Baggiovara. Modena, 16-17 December 2009

Vigna-Taglianti F. *Le strategie di intervento efficaci in adolescenza: uno sguardo europeo*. Presentazione al Convegno "Guadagnare Salute in Adolescenza". Torino, 22-23 February 2010

Vigna-Taglianti F. *Unplugged, un programma scolastico efficace per la di prevenzione dell'uso di droghe, tabacco ed alcol negli adolescenti*. Presentazione dei risultati di efficacia del programma Unplugged in occasione sei seminari per i referenti alla salute delle scuole piemontesi organizzati dall'Ufficio Scolastico Regionale. Fossano, Torino, Pinerolo, Alessandria and Asti, April 2009

