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A cannabis reader: global issues and local
experiences

Perspectives on cannabis controversies, treatment and
regulation in Europe

Editors

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Chapter 11

Cannabis prevention in the EU

Keywords: cannabis – EMCDDA – indicated prevention – judicial referrals – prevention – schools

Setting the context

Cannabis is the most widely consumed illicit drug. It is targeted in one way or another by most prevention interventions. However, few interventions have targeted cannabis specifically. So cannabis prevention in Europe takes place in a vast and varied landscape. What may seem an abstract term — prevention — in practice diffuses across all manner of concrete programmes. These range from diplomacy and treaty negotiation, through health promotion by ministries and community schemes, to physical products such as pamphlets, videos and leaflets.

This chapter attempts to map the diversity of interventions in Europe within the three-tier ‘Gordon’ classification framework of *universal*, *selective* and *indicated* prevention. The chapter is illustrative rather than exhaustive. A general overview of prevention is made difficult because of the sheer diversity of prevention projects that have been developed. Moreover, the actors and implementers involved are far from uniform across Europe (1).

What is certain is that the evidence base for cannabis prevention in the EU needs considerable work. Budgets for prevention campaigns in Europe run into tens of millions of euros, yet while considerable effort is spent on describing their scale (number of leaflets printed, number of advertisements aired, etc.) more research is needed into their effectiveness. Much knowledge originates from alcohol and tobacco prevention and from non-European studies (the USA in particular). While the evaluation of programmes

(1) An EMCDDA project monitors national drugs strategies across Europe, see www.emcdda.europa.eu/?nnodeid=1360

has matured in Europe, the evidence base is too small to develop definitive conclusions for good practice. Political efforts should focus on evaluation and rigorous outcome evaluations.

Further reading

- DrugInfo Clearinghouse (2005), *Prevention reading and resource list: Cannabis*, Melbourne.
- EMCDDA (2002), *Drugs in focus no. 5: Drug prevention in EU schools* — includes a short reading list.
- EMCDDA (ongoing), Prevention and evaluation resources kit (PERK)
www.emcdda.europa.eu/themes/prevention/perk
- Informa Healthcare (journal: six issues per year), *Drugs: Education, Prevention & Policy*.
- Matthys, N., Van Hal, G., Beutels, P. (2006), *Evidence based cannabispreventie in Vlaanderen, Onderzoek uitgevoerd in opdracht van Inge Vervotte, Vlaams minister van Welzijn, Volksgezondheid en Gezin*, Brussels.
- UNODC (2006), *Monitoring and evaluating youth substance abuse prevention programmes*, Vienna.

Cannabis prevention in the EU

Gregor Burkhardt and Amador Calafat

This chapter focuses on a number of cannabis-specific prevention programmes in Europe. It also provides a brief overview of the rationale behind them. It must, nonetheless, be stressed that cannabis prevention rarely takes place in isolation. Furthermore, the weighting given to illicit drugs (cannabis included) in universal prevention has recently been eroded. Europe has shifted away from interventions that divide licit and illicit substances, and has moved towards an approach based on relative harms and complementary drugs, with particular focus on alcohol and tobacco in combination with illicit drugs prevention⁽²⁾.

Cannabis in the context of polydrug prevention and health education

Cannabis prevention is typically delivered in the context of wider informational activities, and shares a platform with prevention for other substances — other illicit drug use, alcohol, tobacco and prescription drug misuse. Beyond substance use prevention, cannabis interventions are also frequently combined with public health prevention programmes that go beyond substance misuse, for example to cover personal health (mental health, addiction, healthy lifestyles, eating disorders, safe sex, etc.) and social education (citizenship, crime, ethics), particularly in the school environment.

A difficulty when analysing cannabis prevention activities is to identify, in this all-inclusive prevention environment, approaches that can offer insights specifically for cannabis. Reviews focusing specifically on cannabis prevention (e.g. Matthys et al., 2006) are rare. Yet, some formal approaches to analysing prevention have emerged, and prevention experts have in the past two decades begun to formalise their approach to analysing programmes, and a typology of interventions has emerged (*universal, selective, indicated* — see Box 1). This has enabled a more focused approach to evaluation of prevention initiatives.

For example, prevention can be categorised along criteria such as coverage (populations targeted), scope, duration, efficacy (what works in research conditions), effectiveness (what works in real life), resource-efficiency and cost-efficiency (what offers the best return on investment). A number of general evidence-based prevention manuals have been produced with European relevance⁽³⁾. However, cannabis-specific handbooks

⁽²⁾ See EMCDDA (2006c).

⁽³⁾ International examples include EU-Dap (2005); van der Stel (1998); UNODC (2002).

Box 1: Prevention classification systems

Gordon (1987), Mrazek and Haggerty (1994) and Kumpfer and Baxley (1997) have proposed a three-tiered preventive intervention classification system: *universal*, *selective* and *indicated* prevention. Amongst others, this typology has gained favour and has been adopted by the US Institute of Medicine, National Institute of Drug Abuse (NIDA) and the EMCDDA.

Universal prevention strategies address the entire population (national, local community, school, district) and aim to prevent or delay the onset of alcohol, tobacco and other drug use. All individuals, without screening, are provided with information and skills necessary to prevent the problem.

Selective prevention focuses on groups who are either known to be drug users or at heightened risk of developing problems of substance abuse or dependence. The subgroups may be distinguished by characteristics such as age, gender, family history or economic status.

Indicated prevention involves a screening process, and aims to identify individuals who exhibit early signs of substance abuse and other problem behaviours. Identifiers include falling grades among students, known problem consumption or conduct disorders, alienation from parents, school and positive peer groups, and so on.

Outside the scope of this three-tier model are *environmental prevention* strategies. Environmental approaches are typically managed at the regulatory/legislative or community level, and focus on interventions to deter drug consumption. While prohibition can be viewed as the ultimate environmental restriction, in practice environmental strategies for cannabis include increased policing in sensitive settings (near schools, at music festivals), legislative guidelines aimed at precipitating punishments (warnings, penalties, fines) and actions to limit the prevalence of complementary licit drugs (for example, alcohol advertising bans and public place smoking bans).

Another classification scheme is *primary*, *secondary* and *tertiary* prevention. Primary prevention aims at preventing drug use and is usually the aim of universal programmes. Secondary prevention aims to prevent drug use from becoming problematic or leading to addiction. Tertiary prevention aims at preventing the harm caused by those who are using drugs.

On the borders of prevention and treatment is the strategy of early intervention. Based on detection of harmful alcohol or drug use, early intervention typically targets treatment of cases before they are aware that their substance use might cause problems or major psychosocial complications.

and guidelines on specific measures for cannabis are less common, yet do exist ⁽⁴⁾. And despite considerable research effort, the prevention literature is largely weighted towards alcohol, smoking and general drug prevention (e.g. Aveyard et al., 2001; Loxley et al., 2004).

A panel of prevention experts recently commented that '(...) what we know about effectiveness (of illicit drug prevention) is almost entirely grounded in work with alcohol and tobacco' (Stockwell et al., 2005). This is mostly due to the nature of the phenomenon. In order to reach statistical power for prevention effects on a low prevalence problem such as cannabis use in pre-teens, a much higher number of cases to be treated is needed compared with alcohol and tobacco.

From informal to formalised programmes

As with misuse of other illicit drugs and alcohol, cannabis use is strongly associated with psychosocial risk factors that go beyond the drug's pharmacological properties and patterns of use ⁽⁵⁾. Those who use cannabis occasionally and those who use it frequently may have different risk factors, different problems, and may therefore benefit from different prevention and supportive approaches. Cannabis components of prevention in Europe are increasingly being formulated to reflect such specific needs. With regard to schools programmes, more countries than before have introduced, expanded or are planning more structured prevention programmes, and quality programmes have been prioritised in many Member States (EMCDDA, 2006a). In many respects, the information on drugs provided as part of these programmes has evolved in parallel with the evidence generated through relevant epidemiology and screening instruments ⁽⁶⁾. As the most recent example in France, a 2005 MILDT/DGESCO addiction prevention guide, firmly based on epidemiology ⁽⁷⁾, was tested at 80 schools and proposes sequencing

⁽⁴⁾ Exceptions include: in Germany, *Schule und Cannabis* (BZgA, 2004) and materials for the *Bekifft in der Schule* project (SuchtPräventionsZentrum Hamburg, 2004); in Switzerland, *Ecoles et cannabis* (OFSP, 2004); in France, *Repérage précoce de l'usage nocif de Cannabis* (INPES, 2006); in the UK, *School drug policy: a review process* (Blueprint, UK Home Office, 2004) and *Advice for teachers on delivering drug education* (Drug Education Forum, 2004); in Belgium, *Maat in de Shit* (CAT Infopunt and VAD, 2006). A number of cannabis-specific prevention manuals have emerged in recent years from Australia (DrugInfo Clearinghouse, 2005), New Zealand and the USA (NIDA, 2003; see also Sloboda, this monograph).

⁽⁵⁾ For a synthetic review of risk and protective factors, see Coggans, this monograph; Frisher et al. (2007); Dillon et al. (2006); Hawkins et al. (1991, 1992); Vázquez and Becoña (2000) and the website www.drugsprevention.net.

⁽⁶⁾ See Hibell and Coggans, this monograph, for a discussion of epidemiology in schools and psychosocial correlates of cannabis use. See Beck and Legleye, this monograph, for discussion of screening instruments. The EMCDDA's next monograph seeks to address harm reduction in general.

⁽⁷⁾ The guide 'Prévention des conduites addictives: Guide d'intervention en milieu scolaire' is available at: <http://eduscol.education.fr/D0190/guide.htm>

prevention according to age group and substance focus: 11–12 years, tobacco; 13–14 years, alcohol; 15–16 years, cannabis; 17–18 years, polydrug consumption (French national report, 2006).

Common ground on prevention

A standard EU approach to prevention is notably absent (see Reitox national reports). Nonetheless, the EMCDDA's annual report and EDDRA database have attempted to encourage pan-European awareness of what different Member States are doing. Encouragingly, cross-border collaboration is now more commonplace.

Consistency yet gradation

There is a continuum between *drug-free society* prevention approaches and moderation approaches. For example, prevention policies might target younger groups with a *just say no* message (minimising onset and experimentation), experimenting youths with a *quit* message (minimising continuation, e.g. Germany's *Quit the Shit* programme), regular users with a *moderation* message (e.g. the UK *Talk to Frank Cannabis: Too much too often* guide, Belgium's *Maat in de Shit* peer-based approach), and heavy or problematic users with a *harm reduction* or *seek treatment* message. Prevention projects in Europe now show some gradation in objectives: to postpone (the next) consumption, to suspend use for some (extendable) time, to refuse offers, to reduce consumption, to distance oneself from consuming peers, etc. (Canning et al., 2004). However, the core scientific base remains consistent: all programmes emphasise the substance's illegality, risks and harms.

Heterogeneous actors and settings

Delivery of cannabis prevention in Europe, as elsewhere in the world, may involve a range of actors: ministries (health and interior affairs), parliamentarians, teachers, police, the judiciary, health professionals, drugs workers, community groups, theatre groups, youth services, parents (including parents of former drug users), Scouts, churches and religious communities, charities and NGOs, the media and commercial publishers. In such a populous environment where materials are freely available, 'official' programmes may compete with programmes which are not officially endorsed⁽⁸⁾. This is particularly the case for selective programmes. Jones (2004)

⁽⁸⁾ For a discussion of various non-governmental prevention materials producers and Internet materials, see Tammi and Peltoniemi (1999), 39–40. Some controversy has arisen in the activities of Narconon, affiliated to the Church of Scientology (Czech Republic national report, 2005; *The Sunday Times*, 7 January 2007).

highlights that moves towards selective prevention constitutes a general shift in which European drug prevention programmes have become increasingly expansive in nature as they attempt to influence complex social environments of risk. Attention should be paid to possible problems which ensue from this. While irresponsibility is rare, such competing publications are subject to little public health endorsement, and their neutrality depends largely on who publishes them⁽⁹⁾. For instance, different agencies may have different conceptions of vulnerability and risk behaviours, complicating interagency cooperation (Powell et al., 2003). Additionally, complications may arise from unsuccessful negotiation of boundaries between prevention, treatment and criminal justice agendas (Kimberlee et al., 2003). Indeed, research has shown that programmes tend to lose effectiveness as they are rolled out over time and across settings (Buston et al., 2002; Dusenbury et al., 2003).

Environmental prevention strategies

Environmental prevention strategies (e.g. legislative and regulatory controls, taxes, bans, community and school rules) have gained popularity and are currently being introduced for alcohol, tobacco and cannabis in several EU Member States. While blanket prohibition could be seen as the strictest form of environmental strategy, there are many possible variations. These include: full and partial smoking bans in public places; EU-wide tobacco advertising bans; developments at EU level on a *European Alcohol Forum* to develop a code of conduct for reducing alcohol-related harm⁽¹⁰⁾; integration of roadside drug screening alongside drink driving tests; EU-wide indexation of existing minimum excise duties on alcohol; and alternative measures to criminal prosecution for personal cannabis possession. The level of enforcement of anti-smoking policies in EU Member States consistently correlates with the level of adolescent smoking (Aspect Consortium, 2004; Eurostat, 2002) and, without implying causality, there is appreciable correspondence between tolerant tobacco policies, prevalence of tobacco smoking among youth and prevalence of cannabis use (EMCDDA, 2006a). The vast majority of cannabis consumers are tobacco smokers. Inversely, there seems to be a strong intrinsic relationship between cannabis and cigarette smoking, in the sense that cannabis use perpetuates cigarette smoking (Amos et al., 2003).

Potential environmental prevention strategies for cannabis are limited by the illegal status of the drug⁽¹¹⁾. Nonetheless, advertising controls on tobacco products or alcohol,

⁽⁹⁾ Producers of non-official prevention-like materials include pro-drugs lobbyists, church groups (Christian, Islamic, Scientologists), parents-against-drugs and similar charities, and groups with strong commercial interests (for example, cannabis magazine publishers and seed sellers).

⁽¹⁰⁾ <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/07/774&format=HTML&aged=0&language=EN&guiLanguage=en>

⁽¹¹⁾ For discussion of hypothetical environmental measures, see Room, this monograph.

together with anti-binge measures (such as happy hour restrictions) are proven to reduce consumption of these substances, and may have a knock-on effect on comorbid cannabis consumption, although little research exists on this topic.

Cannabis advertising is generally indirect in Europe, yet is, nonetheless, present. Advertisers include seed suppliers, growshops and head shops, cannabis smoking clubs and vendors of paraphernalia such as bongs and hydroponic equipment. Publicity channels include a burgeoning cannabis culture media — The High Times, Softsecrets, Pot-TV.net and the High Life trade fair — as well as general media (inflight magazines, music magazines, etc.). Mirroring the brand-stretching vogue that has accompanied tobacco marketing controls (Camel Active, Marlboro Classics) a number of products are marketed using cannabis or cannabis-leaf logos in Europe. As well as 'directly associated' products, such as bongs and cigarette rolling papers, products include Cannabis cough drops and Swiss Hemp Ice Tea drinks (Slovakian national report, 2005), and clothing and accessories, often manufactured with hemp (in France, brands include Made in Chanvre and Terre de Chanvre). Yet, controlling such marketing and cannabis products is very much a grey area. The Australian Federal Government has promoted legislation to ban the sale of bongs and drug equipment, with a 'bong ban' recently put in place in the state of Queensland, although the effects of such legislation need to be measured.

At the 'micro' level, structural prevention measures targeting the availability of cannabis and the social norms around legal drugs are less developed than the evidence base would advise. An advertising ban forms part of the AHOJ-G prosecution guidelines for Dutch coffee shops (see Korf, this monograph). Some Dutch municipalities are beginning to ensure coffee shops are not established in the vicinity of schools, while overall retail outlet density has decreased. Policing of smart shops and growshops has tended to maintain vigilance for any shops that cross legal boundaries and actually sell cannabis: a recent parliamentary proposal in Spain called for regulating *cañamerías* (growshops). Meanwhile, some structural strategies have targeted the 'periphery' of substance use (e.g. municipal bans on drinking or drug-taking in public). Nonetheless, the apparent contradiction persists in Europe where advertisements for a legal product (e.g. tobacco) are banned yet not those for products relating to cannabis, an illegal drug.

Universal prevention: school-based approaches and mass media campaigns

Universal, multi-substance prevention programmes are the norm across Europe, with the predominant focus on school-based and mass media approaches (EMCDDA, 2006a).

Rationale

An important prevention rationale for universal school-based approaches is the gateway hypothesis, whereby delaying onset of adolescent alcohol, tobacco and cannabis use is hypothesised to reduce rates of subsequent illicit drug consumption and problematic use and other comorbid harms (e.g. truancy, delinquency). Other rationales include general health promotion and preventing comorbid behaviour such as harmful alcohol use, school drop-out rates, risky sexual behaviour, early sexual activity or pregnancies, violence and social exclusion. There is some evidence that preventing or delaying tobacco or alcohol use can reduce subsequent use of cannabis (Botvin, 2000; Caulkins et al. 2002, 2004; Ellickson et al., 2003), yet strong proof for reductions for ‘harder’ illicit drug use has proved both elusive and heavily contended in the USA (Gerstein and Green, 1993; Manski et al., 2001).

The political rationale for general universal prevention is robust⁽¹²⁾. Economies of scale are gained as the targeted population is large, while the health objectives — smoking, alcohol, drugs and obesity — are wide (Roe and Becker, 2005). By targeting youths and young adults, school-based and young adult-oriented programmes target a demographic where prevalence is highest, potential lifetime benefits the strongest, and, in many Member States at least, cannabis use is growing (EMCDDA, 2006a; Hibell et al. (ESPAD), 2003). Nonetheless, large-scale universal programmes also lead to high absolute cost, while covering large populations (low per-capita costs). Economic research into prevention cost-effectiveness remains both rare and perhaps politically sensitive in Europe.

Content considerations

A typology of different kinds of universal prevention interventions has been produced for the EMCDDA’s PERK project and reflects the developments of the last two decades⁽¹³⁾. It divides content into (Burkhart and Crusellas, 2002; McGrath et al., 2006; EMCDDA, 2007):

- knowledge of drugs (prevention by providing health information to influence decision-making);
- personal skills (clarification of values and encouragement of responsible decision-making);
- social skills (in particular, peer resistance);

⁽¹²⁾ Political commitment to school-based prevention is intuitive, as seen in a recent letter to *Addiction*: ‘If we do not have up-to-date evidence then we must fall back upon rationality and human and societal values, and I tend to agree (...) that alcohol education, in the absence of evidence, should continue to be valued.’ (Foxcroft, D., *Addiction* 101: 1057–1059).

⁽¹³⁾ www.emcdda.europa.eu/index.cfm?fuseaction=public.Content&nNodeID=9753

- normative beliefs (myth correction, correcting overestimation of the 'acceptability of use');
- alternatives to drug use (activities that are deemed incompatible with drug use);
- structural or regulatory measures (reducing acceptance and availability of complementary substances such as tobacco and alcohol); and
- multi-component (a combination of these).

Debate is strong about the effectiveness of each approach, and there has been a shift away from 'traditional' or 'intuitive' prevention (knowledge and affective) to social skills, competence enhancement, and structural/regulatory and multi-component approaches based on scientific theory (Burkhart and Crusellas, 2002). Typical prevention approaches include theatre-based approaches (Canning et al., 2004) and, increasingly, IT- and Internet-based approaches (Tammi and Peltoniemi, 1999; Drugscope, 2006).

In terms of evaluating effectiveness of cannabis prevention programmes, Europe is, to a large degree, forced to look at US reviews which are furthermore focused on general substance prevention and not cannabis-specific prevention (Skara and Sussman, 2003; Faggiano et al., 2005; Thomas and Pereira, 2006). School-based approaches have generally been found to have scarce effects but — considering the methodological difficulties of implementation and research — they should not be underestimated (Milford et al., 2000; Gorman, 2002; Tucker et al., 2002; Coggans et al., 2003; Ellickson et al., 2003; Bühler and Kröger, 2006, Thomas and Pereira, 2006; Faggiano et al., 2005). Studies from Europe represent a small minority among those aimed at preventing drug use. For example, only one small study (Hurry and McGurk, 1997) was included in the Faggiano review. Among those aimed at preventing tobacco use, some failed to detect any effect (Eveyard et al., 2001) while others show inconsistent results across centres (de Vries et al., 2003) or no long-term yet limited short-term effects (Thomas and Pereira, 2006).

Beyond objections of societal comparability and applicability of general substance findings to cannabis, the US evidence is far from conclusive on programme content. The Cochrane (Faggiano) review suggests that skills-based approaches can reduce subsequent drug use compared with normal curricula. Another review in the USA (Skara and Sussman, 2003) found that 8 out of 25 studies examined programme effects on cannabis and all showed positive interim effects (3–24 months). However, only one study reported data that allowed the calculation of the percentage reduction compared with control groups and other studies did not have enough data to determine relative differences with control groups. Four studies provided long-term outcomes (24 months), of which two showed positive outcomes and two showed no significant differences. The programmes that showed positive outcomes for cannabis use were all based on the social influence model and the majority had more than one type of intervention. About half of these programmes used peer educators, as well as adults. Most had booster

sessions or a long-term component and the length of follow-up varied between 27 and 72 months.

Best practices

Prevention research tends to be descriptive and available proof of effectiveness is limited. While the literature is almost universally cautious on making recommendations, there are several examples of organisations that have distilled research into actionable materials. Practice is informed by a number of international manuals (van der Stel, 1998; WHO, 2000; UNODC, 2002, 2006), synthetic monographs in the field (e.g. EMCDDA, 1997; Bukowski and Sloboda, 2003) and exemplary projects (Ferrer-Wreder et al., 2004; the EMCDDA EDDRA database and PERK). The EMCDDA's PERK project, the *Prevention and Evaluation Resources Kit*, aims to provide an online resource in the area.

NIDA's *Red Book* recommendations (NIDA, 2003) recur in many European publications. These are:

- target all forms of drug misuse, including alcohol and tobacco;
- be family-focused, including a component for parents;
- be long term across a school career;
- be age specific and culturally sensitive;
- address local problems and seek to strengthen community norms against drug use.

A study of prevention reviews (Cuijpers, 2002; Gottfredson and Wilson, 2003; Kumpfer et al., 2003; Skara and Sussman, 2003; Shepard and Carlson, 2003) lists the following guidelines, although with some caveats on the strength of recommendations (McGrath et al., 2006):

- Interactive approaches are preferable to didactic (ex cathedra) approaches.
- Peer-led approaches offer a mild increase in effectiveness.
- Social skills approaches are generally more effective, although resistance skills training offers little evidence of effectiveness.
- Booster sessions may help effectiveness, particularly for cannabis.
- Higher programme intensity (e.g. 10 lessons or more) offers little added benefit.
- Weak evidence suggests that programmes are best delivered to students 11–14 years old⁽¹⁴⁾.

⁽¹⁴⁾ Frisher et al. (2007) suggest that the evidence for an 'optimal age group' for prevention is unclear, although results of late-teen interventions (> 17 years) are generally weaker. They also suggest that as problematic patterns of use typically appear in later adolescence (15–16 years), 'attempts to modify behaviour at this age may be more productive'. A case for gradation in prevention campaigns (early ages: abstentionism, older groups: less use and quitting) would require more research.

- The evidence base for favouring family-based programmes over other approaches is weak, although where used with behavioural parent training, family-skills training and family therapy offer some benefits.

Recent trends in universal prevention in Europe

Standardised programmes

In terms of recent European trends at the universal prevention level, a general trend is the increased reliance on standardised programmes (EMCDDA, 2006a) and inclusion or prioritisation of alcohol and tobacco within general substance prevention (EMCDDA, 2006c). For example, the EU-Dap trial to develop and evaluate a European school prevention programme has reported encouraging results for cannabis, finding that its programme reduced occasional cannabis use by 23% and 24% respectively (EU-Dap, 2006). The programme, implemented in a considerable number of countries (Belgium, Germany, Greece, Spain, Italy, Austria and Sweden, now joined by Poland and the Czech Republic), involves 143 schools, 345 classes and 7 079 students. The early findings after one year need long-term validation during phase II of the project (begun in October 2006). Still, it is worthy of mention that the EU-Dap project has strong initial results while also straddling different prevention and drug consumption cultures.

Gender focus

Gender aspects are increasingly being taken into account in prevention, although there is a trend in many countries in Europe for gender consumption patterns for cannabis to be eroded, notably in Ireland (EMCDDA, 2006a; Frisher et al., 2007). Male gender predicts more intense use (Butters, 2005), while a study suggests that girls are more responsive to parental disapproval and are more cautious in selection of their peers (Butters, 2004). For girls, the programmes that are most effective in sustaining positive effects on substance use prevention after their completion focus on behaviourally orientated life skills. In contrast, methods of delivery that involve interaction with peers or adults are particularly effective in boys (Springer et al., 2004). Competence enhancement approaches, for example, can target gender differences. For boys, a number of European projects (e.g. *Beer-Group* in Germany, *Risflecting* in Austria, *Bagmaendene* in Denmark) focus on the lack of flirting skills among boys which may be related to intensive use of alcohol or cannabis in order to feel able to approach girls. Nonetheless, across Member States, gender-specific programmes remain underdeveloped (EMCDDA, 2006b).

Recreational settings

A number of prevention programmes have targeted cannabis in the context of other recreational settings. These include campaigns at music festivals, Dutch coffee shops and nightlife settings. As with general community prevention programmes, reports emphasise the importance of engaging various actors in the process (police, licensees, staff, organisers) (EMCDDA, 2006d; Reitox national reports).

Risk perception and normative beliefs

Risk perception is a complex but important factor in prevention. Risk perception is not easy to modify with knowledge approaches alone. Own experiences, observation of others and common myths associated with cannabis modulate perception more than knowledge itself (Springer et al., 1996). Normative beliefs are particularly important as cannabis-using youth tend to extrapolate the level of use of their immediate peers to 'normality' and overestimate the prevalence of drug use (Page and Roland, 2004). This might also happen through drug-using peer selection. Recently, considerable symbolism or 'brand value' surrounding cannabis has emerged, which encourages acceptance. Cannabis is often associated with ideas such as ecology, alternative culture, non-conformism and left-wing attitudes. While some prevention programmes focus on deconstructing or neutralising such 'marketing' of cannabis, research is needed on their effectiveness. Some Member States have reported attempts to reverse the social perception of cannabis use as normative behaviour, that is to correct the misconception that the majority of adults and adolescents use drugs (EMCDDA, 2004; McGrath et al., 2006). The recent introduction in Europe of 'strong' public place smoking bans is also being monitored for any knock-on effects on cannabis, particularly with regards to adolescent smoking.

At the schools level, structural and regulatory policies — school rules — have an even higher impact than universal prevention programmes on preventing or delaying legal and illegal substance use (Hawks et al., 2002). Tobacco smoking is a good predictor for cannabis use and its escalation (Duncan et al., 1998, Vázquez and Becoña, 2000) and prior experiences with legal substances may be a significant risk factor for later illegal drug use (von Sydow et al., 2002). Consequently, some Member States encourage that schools have drug policies in place which define procedures and rules about use and availability of cannabis as well as dealing with legal and illegal substances in and around school premises. A number of countries have focused on guiding school drugs policy, and in particular approaches to 'problem students' and dealing with those found using drugs. These include the UK's *Drugs: guidance for schools* (DfES, 2004) and *School drug policy: a review process* (Blueprint, 2004), Ireland's *Guidelines for developing a school substance use policy* (Department of Education and Science, 2003), and France's *Prévention des conduites addictives: guide d'intervention en milieu*

scolaire (CNDP-MILDT, 2006). Some Member States have introduced drug testing in schools, although this practice is contested on ethical grounds (McKeganey, 2005) and because either no preventive effect has been demonstrated in the extant research literature (Council of Europe, 2005; Drug Education Forum, 2006) or the evidence base is insufficient (UK Home Office, 2007). Further research on the subject is part of the Pompidou Group's current work programme.

Family approaches

The family has an influence on drug use, and pro-social family processes have a significant impact on children's peer association, decreasing involvement with antisocial peers, and a significant negative effect on substance use initiation (Oxford et al., 2000; Ferrer-Wreder et al., 2004). A recent review of risk factors found that parental discipline, family cohesion and parental monitoring are among the strongest (Fisher et al., 2007). Compared with alcohol, parents have more difficulties to talk and address cannabis use of their children openly and to negotiate disciplinary boundaries (Highet, 2005). There are not many examples of structured and evaluated family-based prevention approaches in Europe, although parenting programmes with positive evaluation based on US studies (Kumpfer et al., 2003) have been introduced in Spain, Norway and the United Kingdom. Prevention programmes (websites, books, workshops, helplines) aimed specifically at assisting parents with children's drug problems have long been part of the European prevention landscape. Publications dealing exclusively with adolescent cannabis use are rarer, although examples exist⁽¹⁵⁾.

Mass media campaigns

Mass media campaigns have been a popular option in prevention and especially in cannabis prevention. Recent major cannabis campaigns include the UK's 2006 *Brain Warehouse* campaign, Spain's *Drogas: hay trenes que es mejor no coger* and France's *Cannabis et Conduite* campaign⁽¹⁶⁾, with a trend to use mass media within multi-component programmes (McGrath et al., 2002, updated 2006, citing Flay, 2000). Research — again, broadly drawn from non-European sources — suggests, however, that their effectiveness, and especially efficiency, is limited and largely depend on the objectives. They can have effects on attitudes and knowledge (Carroll et al., 2000), but rarely on behaviour (Derzon and Lipsey, 2002). The overall evidence for the impact of

⁽¹⁵⁾ Examples include: in the USA, *Marijuana: facts parents need to know* (NIDA, 2004); in Switzerland, *Cannabis: mit Jugendlichen darüber sprechen* (SFA/ISPA, 2005); in France, *Cannabis: les risques expliqués aux parents* (MILDT, 2005) (www.inpes.sante.fr/CFESBases/catalogue/pdf/806.pdf).

⁽¹⁶⁾ The *Brain Warehouse* cannabis campaign (www.brainwarehouse.tv) included a TV advertisement, scratchcards, leaflets and a dedicated website. The EUR2.2 million *Drogas: hay trenes...* campaign included a TV and radio spot and posters. The *Cannabis et conduite* (www.cannabisetconduite.fr) campaign included a website and radio campaign.

mass media campaigns on consumption patterns is not strong and has mainly focused on how many people were reached by campaign messages (Paglia and Room, 1999; Hall and Pacula, 2003). Isolated studies provide evidence that recall of anti-drug advertising was associated with a lower probability of cannabis and cocaine/crack use (Block et al., 2002) or have shown that mass media campaigns aimed at high sensation seekers may be effective (Stephenson, 2003). However, the large-scale evaluation of the US billion-dollar National Youth Anti-Drug Media Campaign showed no or even negative behavioural outcomes, suggesting a 'boomerang effect' whereby those exposed to the campaign were more likely to consume (EMCDDA, 2007).

Selective prevention

Selective prevention is led by risk factor-specific research allowing for the identification of risk groups (see Coggans, this monograph) mostly by social and demographic variables. An understanding of risk factors associated with cannabis use and its adverse consequences has immediate benefits for the design, targeting and implementation of drug prevention (Kandel et al., 1978; Susser, 1987; Daugherty and Leukfeld, 1998).

Contrary to the traditional approach of secondary prevention, which targets those who already use drugs because they consume, more recent strategies acknowledge that cannabis consumption alone is not a useful predictor for the problems to be prevented (see Coggans, this monograph). The strength of selective prevention is that it is not guided by the idea that risk equals substance use, but by social and personal vulnerability factors for problematic drug use. If drug use alone is to be used as a criterion of the need for prevention, the danger is high that youths with transitory drug experimentation are wrongly classified and stigmatised as a high-risk group (Schmidt, 2001).

Selective prevention in the school setting

The most convenient setting for selective prevention interventions targeting experimenting or vulnerable youth is while they are still attending school. There are, however, challenges in selectively addressing vulnerable adolescents when the mainstream prevention messages are health promotion and non-use and when teachers are (if at all) only trained in universal prevention methods but are not prepared to deal with 'difficult' or experimenting youngsters (Parker and Eggington, 2002).

The main subgroups at which selective prevention in schools is aimed are students with social behavioural problems such as anti-social behaviour (Tarter et al., 2002), academic underachievement (Lynskey and Hall, 2000), low bonding, infrequent school attendance, and impaired learning because of drug use (Hawkins et al., 1991, 1992;

Lloyd, 1998). Targets may also include pupils with high truancy or who have been excluded from school (Goulden and Sondhi, 2001; Powis and Griffiths, 2001), students with family problems (e.g. running away from home), immigrant students and those belonging to ethnic minorities ⁽¹⁷⁾. Academic performance and school attendance are good predictors for drug problems, and monitoring these enables early and accurate intervention (EMCDDA, 2006a). Other strong patterns include early adolescent smoking and heavy drinking (Gil et al., 2002; de Vries et al., 2003; Orlando et al., 2005; Paddock, 2005), with tobacco having strong associations with later cannabis use (Duncan et al., 1998; Vázquez and Becoña Iglesias, 2000).

Social vulnerability factors

Formerly, it was believed that elements from social influence and life skills programmes would not work well in selective prevention approaches (e.g. Tobler et al., 2000). However, several elements of such programmes are suggested as moderately effective for vulnerable youth (Sussman et al., 2004; Roe and Becker, 2005; McGrath et al., 2006). The associated contents — normative restructuring (e.g. learning that most peers and the opposite sex disapprove of use), assertiveness training, motivation and goal-setting, as well as myth correction — are still not included in the typical contents of European selective prevention intervention for cannabis. The focus is instead generally placed on knowledge approaches.

Selective prevention within the criminal justice system

The association between cannabis use and crime or delinquency is well documented (Fergusson et al., 2002; Hall and Pacula, 2003). A study in Spain by the Centro de Estudios sobre Promoción de la Salud (CEPS, 2004) of a sample of youths at protection and reform centres found approximately one-third reported weekly cannabis use. A UK study of youth arrest referrals reported the following use of substances: cannabis (30%), tobacco (30%) and alcohol (23%), with other drugs much lower (cocaine, 4%, crack, 1%, heroin, 1%) (UK Home Office, 2007). Two Dutch studies (Vreugdenhil et al., 2003; Korf et al., 2005) also reported a high prevalence of cannabis use among youths in detention centres (see Netherlands national report, 2006). However, caution must be applied in that (i) there is consensus that there are associations, not causal links, between cannabis and offending; (ii) many studies embrace all types of drug use (illicit drugs, alcohol) not cannabis in isolation, with persistent offending associated with harder drugs (Flood-Page et al., 2000); (iii) 'crime' runs the gamut, from serious offences to delinquency and misbehaviour; and (iv) consumption is an offence *per se*.

⁽¹⁷⁾ For an overview of screening instruments for assessing cannabis use, see Beck and Legleye, this monograph.

A recent study suggests that the gateway effect of 'soft' drug use for later progression into delinquency may be overplayed (Pudney, 2003). Moreover, studies have illustrated the importance of situational, social and peer influences in contrast to individual psychological problems in initiating drug use among young people (Rhodes et al., 2003; Butters, 2004).

While the ethics of coercion into compulsory treatment have been debated, the criminal justice system represents an important setting for selective prevention in the form of referrals. In most Member States, corresponding legal provisions exist for referral of prisoners and offenders. Young offenders (especially those first notified for drugs offences) are treated with particular consideration. Drug testing for adult and (less commonly) young arrestees has been introduced in some countries. However, specific guidelines are often missing and the cooperation and coordination between social (prevention) services and judicial services, although of key importance, are considered difficult (Newburn, 1999; UK Home Office, 2007). Selective prevention programmes in the criminal justice system (see Box 2 for examples) rely on the fact that cannabis use and possession are illegal, opening up a referral opportunity for targeted intervention for young people at risk. The evaluation of the Austrian project *Way Out* showed that it could be introduced successfully in schools and by public health officers as well as school doctors, although the main channel for referrals was the police. The evaluation found fewer personality deficits among youngsters first notified for cannabis offences than expected.

Selective prevention in informal settings

A recurrent question is how to get in touch with those youngsters at risk of developing problematic consumption patterns but who are not reached at school or in other formal settings. There are many situations where it is only possible to approach adolescents in informal or recreational settings. Haas et al. (2001) point out that in Austria youngsters who experiment with drugs are frequently excluded from youth services, thereby increasing their social exclusion. As a result, occasions for selective and indicated prevention are missed. Attractive drop-in and counselling facilities with a judgement-free attitude is one strategy option. In some Member States, pro-active approaches — called 'interventionist tracking' — for vulnerable youth are applied, mostly through cooperation of different services (Green et al., 2001) and social actors (Arbex Sanchez et al., 2002).

Many strategies and projects focus on identifying, approaching and attracting vulnerable young people in order to intervene at an early stage of problem development and to provide counselling or referral to specialised services. Outreach work⁽¹⁸⁾ traditionally reaches out to obviously problematic drug users and is less associated with approaching

⁽¹⁸⁾ The EMCDDA's web page on outreach work is at www.emcdda.europa.eu/?nnodeid=1576

Box 2: Selective prevention for cannabis/illicit drug use – examples from Exchange on Drug Demand Reduction Action (EDDRA)

The EMCDDA's EDDRA database offers information on a broad range of evaluated drug demand reduction actions in the EU Member States. Selection criteria for this small sample were outcome-evaluated interventions with a predominant focus on cannabis. None has a control group design and outcome variables are not necessarily drug use related.

Step by Step (Austria and Germany) is a computer program for early diagnosis of drug-related problems and for possible interventions at schools. It helps teachers who are confronted with problem pupils to find out whether or not these pupils use drugs.

www.emcdda.europa.eu/html.cfm/index52035EN.html?project_id=5957&tab=overview

FreD (Austria and Germany) is a programme that targets first-time offenders up to the age of 25 who have been arrested due to the consumption of illegal drugs. They are referred to a course which motivates them to change their drug use.

www.emcdda.europa.eu/html.cfm/index52035EN.html?project_id=2091&tab=overview

Way out (Austria) is an early intervention for young drug-using first offenders. Support is offered over a period of approximately 6 months with the aim of encouraging abstinence for illegal drugs, moderation for legal substances and avoidance of drug-related problems.

www.emcdda.europa.eu/html.cfm/index52035EN.html?project_id=5038&tab=overview

MSF — Solidarite Jeunes (Luxembourg) provides therapy to youths consuming drugs and to their families referred from judicial or educational systems.

www.emcdda.europa.eu/html.cfm/index52035EN.html?project_id=3656&tab=overview

Ámbits-Esport (Catalonia, Spain) provides a sport-based programme for immigrant youths from North Africa, sub-Saharan Africa and Latin America aimed at reducing smoking and illicit drug consumption (in particular, cannabis), together with integration with Catalan peers.

www.emcdda.europa.eu/html.cfm/index52035EN.html?project_id=2918&tab=overview

vulnerable youth and cannabis users who are not addicted. From some Member States, centres for mobile youth or street work are reported, which closely cooperate with relevant help organisations so that assistance may be provided at the earliest stage possible. Such measures and their relevance for vulnerable and experimenting youth are intensively discussed, for example in Austria, and are foreseen to attain an increasing geographical coverage (Haas et al., 2001, 2002).

Indicated prevention

There are some conditions that have been identified as potentially increasing the risk for intense cannabis use, such as attention deficit disorder (ADD) (Giedd, 2003), and affect dysregulation (Simons and Carey, 2002) in the sense of emotional instability and impulsivity. Children and adolescents with ADD might seek to relieve their state of anxiety, tension and dysphoric mood and the sensation of 'noise' in the brain (due to the low synaptic dopamine availability in the essential brain areas) through 'self-treatment' with cannabis. However, systematic early detection, treatment and follow-up involving general health services and paediatricians are reported only from Germany, Italy and Sweden in their national reports. An increase in cannabis-related psychoses is reported from psychiatric services (see Witton, this monograph, volume 2), and according to recent reviews there is evidence that cannabis is a risk factor for schizophrenia (Arseneault et al., 2004; Smit et al., 2004). There seems to be a strong case to pay increased attention to reducing the intensity of consumption in order to respond to cannabis-related public health problems. Motivational interviewing, for instance, has shown to reduce the intensity of consumption without formal treatment (McCambridge and Strang, 2004), although there is evidence to suggest that short-term gains are not maintained at 1-year follow-up (McCambridge and Strang, 2004).

Between prevention and treatment

While provision of drug treatment is often the most immediate reaction of policymakers to drug use, a strategy of expanding counselling or early intervention *offers* for cannabis users in cone structures may have difficulties in reaching the target population. These problems might be increased if the services for cannabis clients are offered in the same setting as for heroin users. There is a reluctance of cannabis users to consider themselves as drug users or as having a drug problem and to seek help and advice for themselves.

Member States are increasingly acknowledging this need to reach out to a wider vulnerable population. Approaches which are less treatment-focused stress the importance of literacy, academic capacities, employment, gender, social integration, body (self) perception, rationality, social networks, and the functionality of use (Boys

and Marsden, 2003). Some municipalities in Denmark have been successful in offering help to groups of young people with an emerging cannabis problem via day centres, where they gather in small groups (up to 10) and are supported by a therapist or social worker. They are offered space and time to talk about their life, problems and drug use. Supportive methods are favoured: offering help, for example, to plan for the future, to pursue their education or to get a job. Evaluation shows that the participants profit greatly from contact with adults who offer support, respect and who accept them on their own conditions. Results also suggest that the increasing but not yet full-blown drug problem 'solves itself' if help with other problems (school, family, friends) is offered (Danish national report, 2005). The specific support for integration into the educational system or the workplace has shown to be of great importance in preventing further social exclusion. Several Member States have similar projects. The German web-based counselling programme *Quit the Shit*⁽¹⁹⁾ is another example of an innovative approach for cannabis users who want to reduce or stop using cannabis. It comprises a 50-day programme, based on cognitive-behavioural principles, including information and featuring a diary that is submitted to an intervention team for regular feedback. Those who made use of the online support to quit using cannabis had their average consumption quantity reduced by a third 3 months after the completion of the programme. The number of days on which cannabis was consumed went down by 50% (Die Drogenbeauftragte der Bundesregierung, 2005).

Conclusions and challenges

Cannabis use prevalence is generally increasing among youth in the EU and the perception of its risks has generally decreased in recent years⁽²⁰⁾. The large majority of European cannabis smokers have already smoked tobacco, and there is an association between a tolerant tobacco policy, smoking prevalence and cannabis consumption. This suggests that there is considerable scope of action for structural prevention, directed at attitudes and normative frameworks in respect to legal substances as well as cannabis. The effects of current public place smoking bans in Europe should be monitored to look specifically at knock-on effects on cannabis.

Cannabis use is mostly experimental, but compared with other illegal drugs, the number of regular and daily users is higher (EMCDDA, 2006a). About 9 out of 10 persons who have ever used cannabis began at around 14 and stopped before the age of 24. This implies that there is a 'vulnerability window' where prevention interventions should focus on preventing experimenters beginning to develop cannabis-related problems and where entering regular consumption patterns. Even if the majority will

⁽¹⁹⁾ www.drugcom.de/

⁽²⁰⁾ See Hibell, this monograph.

never develop problematic use, the opportunity for selective and indicated prevention or early intervention to identify those at risk and to be able to assist them with targeted interventions is considerable. Appropriate offers of early intervention and support at the border between prevention and treatment might be more attractive to this group than traditional drug help facilities.

Even regular cannabis users rarely seek support, help or treatment on their own initiative. Counselling or early intervention services are not likely to be appropriate when there is no problem awareness among the users themselves. However, the illegal status of cannabis may sometimes be strategically helpful in the sense that cannabis users are being brought into contact with cannabis counselling or other interventions through contact with the criminal justice system for possession offences. Reports that very young people sometimes appear in treatment centres with advanced cannabis use patterns after only a short period of use indicates that some powerful personal and social risk factors can lead to rapid progression of cannabis-related problems. Supporting such children at an early stage is a challenge for indicated prevention.

The majority of available projects in the EU publicised through EDDRA do not have sufficient evaluation, which makes European intervention planning still largely dependent on US research and evaluation findings (Matthys et al., 2006). Consumption reduction is rarely assessed as an outcome, and the cost-effectiveness of programmes is difficult to calculate (Matthys et al., 2006). Moreover, while there has been a search for evidence-based universal intervention in the USA, the notion of what works is fraught with questions about the philosophy, objectives and measures of effectiveness (Cohen, 2001; Gorman, 2002; Ashton, 2003).

There is some cause for optimism: a recent Scottish literature review of school-based drug prevention programmes concluded that prevention, 'in general can be effective [and] that some types and features of drug education are more effective than others. In particular, drug education using highly interactive methods and social influences approaches, specifically including resistance skills and normative education elements, is consistently shown to be more effective' (Stead and Angus, 2007). Moreover, there is an increased understanding of common risk and protective factors and trajectories of drug use (e.g. Advisory Council on the Misuse of Drugs, 2006), and some of this has been translated into practical instruments and materials. A particularly prescriptive report is Australia's National Cannabis Strategy 2006–2009, albeit in a non-European context. Yet, there are also challenges to face. A Belgian study concludes that 'Researchers continue to come up against substantial methodological, practical and ethical problems if they want to put in place effectiveness evaluations relating to drug prevention' (Matthys et al., 2006).

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