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Alcohol & European Students (ESPAD 1999)

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ABSTRACT

This report describes some of the main findings elicited by the UK part and the wider international part of the European School Survey Project on Alcohol and other Drugs (ESPAD 1999). This survey was conducted in 1999 to examine patterns of self-reported drinking and smoking among a representative United Kingdom sample of people born in 1983. These individuals were all aged 15 and 16. An earlier ESPAD had been carried out in 1995. This had involved teenagers from the UK as well as 22 other countries. The 1999 study included teenagers from 30 countries. It was also undertaken in order to compare the 1999 findings with those of ESPAD 1995.

In the most notable findings from ESPAD 1999 were as follows: A total of 36% of UK teenagers had used illicit drugs. This was the highest rate in all Europe. On alcohol consumption the UK was found in the top four heaviest using countries. UK teenagers started smoking cigarettes early and 23% said they smoked at least one cigarette per day at the time of the survey. A fifth had been daily smokers by the age of 13 years. There were regional variations within the UK with Scottish students being, in general, the highest users of illicit drugs and pupils from Northern Ireland the highest on use of glues and solvents. However, illicit drug use had declined in the UK since 1995. In particular the lifetime use of cannabis was down by about 4%.

An exploratory cluster analysis suggested that heavy users of cannabis i.e. those who had used it 40 times or more might be divided into three groups: a small number with behaviour problems, a larger number who were unhappy and had problems with personal relationships and the largest number who were 'ordinary' and believed in adhering to society's rules. The former two groups were more likely than the last to have used other illicit substances.

A comparison with French students also surveyed in ESPAD showed that UK students had very much higher levels of alcohol use on all the alcohol variables compared. French students were slightly heavier users of cigarettes and the two countries were nearly equal in cannabis use. In both countries parental knowledge of a student's whereabouts on Saturday nights was strongly associated with substance use. French parents were rather more likely to know this than were UK ones.

PART 1. THE SURVEY AND ITS INITIAL FINDINGS

INTRODUCTION

The AERC has provided the major funding for the UK part of the 30 country European School Survey Project on Alcohol & other Drugs (ESPAD 1999). Documentation of the results of ESPAD 1999 is likely to continue for some time. So far the following publications have been produced: Hibell et al. 2001, Ledoux et al. 2001, Miller and Plant 2000, 2001a,b, Plant 2000a,b, Plant and Miller 2000, 2001a,b,c.

This report summarises the main findings from the UK part of ESPAD 1999, together with some international findings. The report is organised in three sections. The first, the main study, contains an account of the initial survey and its findings set in the context of the overall European study. The other two sections describe studies undertaken later, using the data gathered.

The use of alcohol, tobacco and illicit drugs by young people has attracted widespread interest. Evidence suggests that both youthful alcohol consumption and problems related to illicit drugs were rising in the early 1990s until about 1996 (Goddard 1997a,b, Home Office 2000, Plant and Cameron 2000). During 1995 the first ESPAD was conducted to examine these behaviours amongst representative samples of 15-16 year old school students in Europe. The United Kingdom and 22 other countries participated in this exercise.

The results of ESPAD 1995 have been described elsewhere (Miller 1997, Miller and Plant 1996, Hibell et al. 1997, Miller and Plant 1999a,b). The original exercise elicited an extensive array of information. This was the first time that a UK-wide representative sample survey of this topic had been conducted. The main support for the UK exercise was provided by the AERC. ESPAD 1995 was also by far the biggest international comparative study of youthful psychoactive substance use. The 1995 survey showed that UK teenagers reported the highest levels of illicit drug use amongst the 23 survey countries. UK teenagers also reported high levels of alcohol-related problems (Hibell et al. op cit.). This study was repeated in 1999, with 30 countries taking part. This exercise, like its predecessor, was co-ordinated by the Swedish Council for Information on Alcohol and Other Drugs and was supported by the Pompidou Group. This report highlights some findings of this new study and compares them with those of the 1995 ESPAD survey.

SUBJECTS AND METHODS

The population sampled consisted of students born in 1983 throughout the UK. The UK was divided into the four separate countries of England, Scotland, Wales and Northern Ireland and a separate sample was drawn from the appropriate school classes within each country. It was expected that at least 90% of the target population would be still in school at the time of the survey. Sufficient funds existed for a sample of approximately 225 classes in all, one from each school selected. The authors decided to stratify the total sample so that comparisons between the four countries could be attempted. However, an equal division of schools might have failed to

adequately represent the whole UK while still not affording sufficient precision for meaningful comparisons. Accordingly, with reluctance, less weight was given to Wales than to the other countries. It was decided to attempt to obtain a sample of approximately 25 Welsh schools and 70 each of the other countries. Given previous experience of refusal rates, this meant initially approaching a greater number of schools in England, Wales and Scotland than in Northern Ireland. Lists were available detailing the schools in each country along with the numbers of students in each. The list for each country (including the independent schools for that country) was sampled with probability proportional to size of school, to yield self-weighting samples within each country. Results covering the UK as a whole were obtained by applying a weight to the responses of all the students within each country, this weight being the inverse of the school sampling rate within that country.

Local organisers within each selected school furnished lists of all classes within their school containing students born in 1983. One of these classes was then systematically selected by the research team using a random number table. The local organisers carried out the fieldwork during the period March to June 1999. The standardised ESPAD questionnaire was administered to the class, excluding students whose parents refused consent, under 'examination' conditions. Students were assured they had been randomly selected and that their replies would be anonymous. Questionnaires from students not born in 1983 were later discarded.

The questionnaire used was derived from the original 1995 version, modified by agreement between the researchers participating in the 1999 exercise. This instrument contained a core section common to all the ESPAD countries, extensively covering use of alcohol, tobacco and illicit drugs together with some demographic variables. There were also four optional modules from which each country could choose, and the UK questionnaire contained two of these, the 'integration' and 'psycho-social' modules

RESPONSE

In England, 58 (63.7%) out of 91 schools approached co-operated. In the other countries the figures were: Scotland, 69 (73.4%) out of 94, Wales 25 (73.5%) out of 34 and Northern Ireland 71 (85.5%) out of 83. The reason given for school refusals was mostly participation in other research projects. Comparisons were made between the participating and refusing schools on type of school and area in which the school was situated. There appeared to be no discernible differences.

The resulting 223 classes contained a total of 5,192 students. The parents of 58 students (1.1%) refused to allow their child to take part. On the day of testing 419 (8.1%) were absent ill, 166 (3.2%) were absent with permission, and 105 (2.0%) were absent without permission. This left 4,444 (85.6%) whose questionnaires were returned. Of these 2,774 were born in 1983. However a further 29 frivolously completed questionnaires were discarded together with 104 found to be incomplete. This left a total sample of 2,641 students all aged 15 or 16, 1,280 of whom were boys and 1,361 were girls.

Internal consistency checks suggested acceptable reliability and validity. Inconsistent responding between two versions of the same question was never more than 5.1%. The average number of unanswered questions was 1.8%. Inconsistent response patterns for lifetime, 12 month and 30 day usage of various illicit drugs were never more than 3.9%, and only 0.2% of respondents claimed to have used a fictitious drug 'relevin'. The lowest response rate on any question was 95% for alcohol consumption in the last 12 months.

ANALYSIS As noted above, the responses for the four individual countries were weighted to provide estimates of means and proportions for the whole UK. All the standard errors and comparisons reported below were arrived at using the PcCarp package (Iowa State University 1989). This allows for clustering within schools and provides a test of proportionality for two-way tables comparable to a Chi-Square test. The test statistic is distributed approximately as *F*, but the degrees of freedom for *F* are largely non-intuitive. There are also procedures for running regression analyses and logistic regression analyses.

RESULTS

A substantial international report was launched on March 20th, 2001 (Hibell et al. 2001). A UK press conference was staged at the Royal College of Physicians in London. This event was arranged jointly by the AERC and the A&HRC. It was chaired by Dr Robin Davidson. The press conference aroused substantial media interest. Details were reported extensively on radio, television and in newspapers. This coverage was international as well as national.

THE INTERNATIONAL PICTURE

- ESPAD 1999 revealed that UK teenagers retained their position as those most likely in all the participating countries to have used illicit drugs (36%). Other countries with high rates of drug use included the Czech Republic, the Republic of Ireland and France. Countries with low levels of drug use included Finland, Sweden, Malta and Cyprus.

- UK teenagers, together with those in Denmark, the Faroe Islands, Finland, Greenland, Iceland and Ireland, reported the highest levels of alcohol consumption and intoxication. Countries in which such behaviours and experiences were less common included Cyprus, France, Greece, Italy, Malta and Portugal.

- More than half of all the teenagers in the countries surveyed had smoked at some time in their lives. UK teenagers reported a high rate (20%) of daily smoking by the early age of 13 years. Other countries with high rates included the Republic of Ireland (18%), Russia (16%), Finland (15%) and France (14%). In many countries, including the UK, girls were more likely than boys to have smoked.

THE UNITED KINGDOM

ALCOHOL AND TOBACCO USE

Tables 1 and 2 show the results for alcohol consumption, together with the comparable overall UK values from the 1995 ESPAD survey. On combining the sexes and using weighted proportions 5.9% were found never to have consumed alcohol. Most (75.8%) had been intoxicated at least once; 55.9% had consumed five or more drinks in a row in the past 30 days and 15.5% had ten or more drinking occasions in the same period. A drink (or 'unit') was defined as half a pint (285 ml/ one centilitre) of normal strength beer, cider, lager or stout; a single glass of wine; or a single bar measure of spirits. Overall, 64.9% of those surveyed reported having at some time smoked cigarettes. A third, 34.3%, had smoked in the past 30 days. This is elaborated in tables 1 and 2.

Table 1. Alcohol and tobacco use among 15 and 16 year old girls (%, proportion).

GIRLS	England	Northern Ireland	Scotland	Wales	All regions in 1999	All regions in 1995
ALCOHOL						
Ever consumed	94.0 (283/301)	89.4 (353/395)	96.0 (474/494)	95.2 (98/103)	94.0 (1208/1293)	94.1 (3596/3822)
Ever intoxicated	73.4 (232/316)	68.3 (273/400)	77.6 (392/505)	80.4 (86/107)	73.9 (983/1328)	78.5 (3088/3933)
>9 drinking occasions in past 30 days	14.6 (44/302)	5.8 (23/397)	8.9 (45/505)	13.3 (14/105)	13.2 (126/1309)	11.0 (426/3680)
≥ 5 drinks in a row in past 30 days	54.9 (175/319)	46.4 (190/410)	56.3 (294/520)	61.1 (65/107)	54.8 (724/1356))	49.5 (2010/4064)
TOBACCO						
Ever smoked	70.9 (225/317)	66.0 (270/410)	69.5 (358/517)	71.3 (76/107)	70.4 (929/1351)	71.5 (2915/4078)
Smoked in past 30 days	37.6 (120/318))	35.7 (146/411)	35.8 (187/522)	39.8 (43/107)	37.4 (496/1358)	39.6 (1613/4075)
≥ 11 cigarettes/day past 30 days	4.7 (15/318)	2.7 (11/411)	5.4 (28/522)	7.4 (8/107)	4.8 (62/1358)	6.6 (267/4075)

Note: The percentages for 'all regions' are weighted. These are not the same as 'raw' percentages. Figures in brackets for 'all regions' indicate raw numbers.

Table 2. Alcohol and tobacco use among 15 and 16 year old boys (%, Proportion).

BOYS	England	Northern Ireland	Scotland	Wales	All regions in 1999	All regions in 1995
ALCOHOL						
Ever consumed	94.1 (304/323)	91.1 (267/293)	95.3 (468/491)	94.9 (112/118)	94.2 (1201/1276)	94.4 (3205/3395)
Ever intoxicated	77.7 (254/327)	76.7 (233/304)	77.1 (383/497)	79.2 (95/120)	77.6 (1004/1293)	77.3 (2695/3488)
>9 drinking occasions in past 30 days	20.1 (65/324)	11.7 (35/300)	7.5 (37/491)	17.1 (20/117)	18.0 (230/1280)	15.4 (526/3425)
≥ 5 drinks in a row in past 30 days	57.4 (193/336)	60.8 (189/311)	52.5 (266/508)	56.6 (69/122)	57.0 (756/1328)	51.2 (1844/3604)
TOBACCO						
Ever smoked	58.9 (197/334)	67.9 (209/308)	62.8 (319/509)	53.3 (64/121)	59.6 (791/1328)	63.3 (2290/3619)
Smoked in past 30 days	32.4 (109/335)	28.6 (88/306)	26.0 (133/511)	25.4 (31/122)	31.1 (413/1328)	32.1 (1159/3614)
≥ 11 cigarettes/day past 30 days	6.6 (22/335)	4.8 (15/306)	4.5 (23/511)	6.6 (8/122)	6.2 (825/1328)	5.5 (197/3614)

Note: The percentages for 'all regions' are weighted. These are not the same as 'raw' percentages. Figures in brackets for 'all regions' indicate raw numbers.

ILLICT DRUG USE

- A third of girls and 39.5% of boys had used some form of illicit drug. A weighted proportion of 35.4% had at some time used cannabis, with 6.8% using on 40 or more occasions. Glues and solvents had been used by 15.3%, LSD by 4.3%, and amphetamines by 7.7%. Overall use of ecstasy (MDMA) was 4.3%, cocaine 3.2%, and heroin 2.7% (tables 3 and 4).

Table 3. Illicit drug use in 15 and 16 year old girls (%, proportion).

GIRLS	England	Northern Ireland	Scotland	Wales	All regions in 1999	All regions in 1995
CANNABIS						
1 – 39 times	27.3 (87/319)	28.2 (115/410)	30.1 (152/514)	27.8 (30/108)	27.7 (384/1351)	38.0 (1525/4009)*
40 or more times	4.1 (13/319)	1.7 (7/410)	6.9 (36/514)	6.5 (7/108)	4.4 (63/1351)	
ILLICIT DRUGS EVER						
Any illicit drug	32.3 (103/319)	30.6 (126/412)	37.9 (198/522)	35.2 (38/108)	33.0 (465/1361)	39.8 (1628/4092)
Any drug by injection	0.6 (2/318)	0.7 (3/411)	0.6 (3/520)	0.0 1.0 (0/107)	0.6 (8/1356)	0.6 (25/3987)
Glues and solvents	15.4 (49/318)	23.5 (96/410)	19.5 (102/522)	24.1 (24/105)	16.9 (271/1355)	21.0 (847/4031)
LSD/hallucinogens	2.8 (9/318)	4.1 (17/412)	5.4 (28/521)	5.6 (6/107)	3.4 (60/1358)	12.2 (489/4017)
Amphetamines	6.9 (22/319)	4.4 (18/412)	11.3 (59/522)	9.3 (10/107)	7.4 (109/1360)	12.3 (493/4015)
'Pills' combined with alcohol	11.8 (37/313)	16.0 (65/407)	12.5 (64/513)	17.8 (19/107)	12.5 (185/1340)	25.3 (1014/4016)
Ecstasy (MDMA)	2.5 (8/319)	6.3 (26/410)	5.2 (27/520)	4.6 (5/107)	3.2 (66/1356)	7.3 (293/3999)
Tranquillisers/sedatives	2.5 (8/319)	3.6 (15/412)	4.8 (25/522)	7.5 (8/107)	3.1 (56/1360)	9.5 (380/4010)
Cocaine	4.1 (13/319)	1.9 (8/411)	2.1 (11/521)	4.6 (5/107)	3.7 (37/1358)	2.4 (95/4016)
Crack	2.5 (8/318)	0.5 (2/411)	1.2 (6/521)	1.9 (2/107)	2.2 (18/1357)	2.2 (89/4013)
Steroids	1.9 (6/316)	1.0 (4/411)	0.8 (4/521)	1.9 (2/106)	1.7 (16/1354)	1.0 (40/3987)
Heroin	2.5 (8/319)	2.5 (10/408)	2.3 (12/519)	2.8 (3/107)	2.5 (33/1353)	1.5 (61/4007)
'Relevin' (dummy drug)	0.0 (0/319)	0.2 (1/409)	0.0 (0/518)	0.0 (0/105)	0.0 (1/1351)	0.3 (12/4004)

Note: The percentages for 'all regions' are weighted. These are not the same as 'raw' percentages. Figures in brackets for 'all regions' indicate raw numbers. *cannabis ever

Table 4. Illicit drug use in 15 and 16 year old boys (%, proportion).

BOYS	England	Northern Ireland	Scotland	Wales	All regions in 1999	All regions in 1995
CANNABIS						
1 – 39 times	29.8 (100/331)	29.6 (92/311)	31.1 (159/510	17.2 (21/122)	29.3 (372/1274	43.6 (1546/3546)*
40 or more times	8.3 (27/331)	8.7 (27/311)	14.1 (72/510)	9.8 (12/122)	9.1 (138/1274)	
ILLICIT DRUGS EVER						
Any illicit drug	39.3 (132/336)	9.6 (123/311)	45.8 (234/511)	27.1 (33/122)	39.5 (522/1280)	45.0 (1636/3630)
Any drug by injection	0.9 (3/332)	0.6 (2/308)	0.4 (2/509)	0.0 (0/120)	0.8 (7/1269)	0.7 (26/3555)
Glues and solvents	12.8 (43/335)	27.7 (86/311)	13.7 (70/511)	16.4 (20/121)	13.8 (219/1278)	19.7 (705/3587)
LSD/other hallucinogens	4.8 (16/334)	7.1 (22/309)	6.3 (32/511)	5.7 (7/121)	5.1 (77/1275)	17.0 (606/3574)
Amphetamines	6.9 (23/333)	6.1 (19/308)	13.9 (71/509)	9.8 (12/121)	7.8 (125/1271)	14.5 (517/3566)
'Pills' combined with alcohol	9.2 (30/326)	8.8 (27/306)	8.0 (40/500)	6.7 (8/119)	8.9 (105/1251)	14.0 (499/3567)
Ecstasy (MDMA)	2.7 (9/333)	6.4 (20/306)	6.1 (30/506)	4.1 (5/121)	3.4 (64/1266)	9.2 (326/3555)
Tranquillisers/sedatives	5.4 (18/334)	6.5 (20/308)	6.5 (33/509)	3.3 (4/121)	5.5 (75/1272)	6.9 (244/3556)
Cocaine	2.7 (9/333)	1.9 (6/309)	2.7 (14/509)	1.6 (2/121)	2.6 (31/1272)	2.8 (101/3571)
Crack	0.9 (3/332)	1.3 (4/309)	1.4 (7/508)	2.5 (3/121)	1.1 (17/1270)	2.7 (98/3569)
Steroids	2.4 (8/332)	2.3 (7/307)	1.0 (5/508)	3.3 (3/121)	2.3 (23/1268)	2.2 (80/3546)
Heroin	3.0 (10/334)	2.3 (7/309)	3.0 (15/508)	1.7 (2/121)	2.9 (34/1272)	1.7 (62/3566)
'Relevin' (dummy drug)	0.3 (1/331)	0.3 (1/309)	0.2 (1/508)	0.8 (1/121)	0.3 (4/1269)	0.2 (8/3560)

Note: The percentages for 'all regions' are weighted. These are not the same as 'raw' percentages. Figures in brackets for 'all regions' indicate raw numbers. *Cannabis ever

THE EFFECTS OF SEX, PARENTAL EDUCATION AND REGION

Differences on each of these variables were assessed controlling for the other two. Parental education was measured in three categories: neither parent completed secondary school, one or both parents completed secondary school and one or both parents had some further education.

- There was only one significant sex difference. Girls were more likely ever to have smoked tobacco ($F=10.83$, $P<0.01$).

- On parental education those whose parents had further education were less likely to have had five or more drinks in a row in the past 30 days ($F=3.53$, df 2,inf, $P<0.05$; lowest educational level 57.3%, middle level 60.2%, highest level 51.6%) and less likely to have smoked in the past 30 days ($F=3.32$, df 2,inf, $P<0.05$; lowest level 39.9%, middle level 37.3% highest level 29.3%).

- There were several significant regional variations. Students in Scotland were more likely than in the other countries to have used cannabis ($F=3.43$, df 6,inf, $P<0.01$), any illicit drug ($F=3.15$, df 3,inf, $P<0.05$), and amphetamines ($F=8.59$, df 3,inf, $P<0.01$). Respondents in Scotland and Northern Ireland were more likely than those in England and Wales to have used ecstasy ($F=4.63$, df 3,inf, $P<0.01$). Finally, those in Northern Ireland showed the greatest use of glues and solvents ($F=8.39$, df 3,inf, $P<0.01$).

- English and Welsh boys and girls were more likely than those in Scotland and Northern Ireland to have had nine or more drinking occasions in the past 30 days (overall $F=11.63$, df 3,inf, $P<.01$).

- Sex-by-region interactions were also tested, controlling for parental education. For five or more drinks in a row in the past 30 days, Northern Ireland girls are particularly low and boys somewhat high ($F=5.78$, df 3,inf, $P<0.01$). The same holds for ever smoking cigarettes ($F=3.88$, df 3,inf $P<0.01$). Referring further to tables 1 and 2, it should be noted that only in Northern Ireland were boys more likely than girls to have smoked tobacco. There was also a large sex difference in relation to binge drinking in Northern Ireland. Boys there were the highest in the four parts of the UK, while the opposite was true for the girls.

CHANGES SINCE 1995

The results of the 1995 and 1999 surveys were compared using the pooled adjusted standard errors. Most forms of drug use had declined. Amongst girls there were significant reductions in use of cannabis ($Z=2.30$,$P<0.05$), any illicit drug ($Z=2.66$, $P<0.01$), solvents ($Z=2.15$, $P<0.05$), LSD ($Z=7.03$, $P<0.01$), amphetamines ($Z=3.20$, $P<0.05$), pills combined with alcohol ($Z=6.51$, $P<0.01$), ecstasy ($Z=4.16$, $P<0.01$), and tranquillisers ($Z=5.96$, $P<0.01$). Amongst boys the significant falls were in cannabis ($Z=1.97$, $P<0.05$), any illicit drug ($Z=2.16$, $P<0.05$), solvents ($Z=3.27$, $P<0.01$), LSD ($Z=7.18$, $P<0.01$), amphetamines ($Z=4.23$, $P<0.01$), pills combined with alcohol ($Z=2.96$, $P<0.01$), ecstasy ($Z=6.30$, $P<0.01$) and crack ($Z=3.20$, $P<0.01$).

DISCUSSION

The survey was intended to supply findings covering both the UK as a whole and the four constituent nations within it. There were various possible sources of bias. The first concerns sampling. Overall 26.2% of schools approached did not participate and this rate varied from 14.5% in Northern Ireland to 36.3% in England. However, comparisons between English schools within and without the survey revealed no discernible urban-rural or geographical bias, and the overwhelming reason given for non co-operation, i.e. that the school had already taken part in other research, had nothing to do with the aims of the present survey. However, the loss of English schools did lead to a greater than anticipated imbalance in the representation of the four nations. This was exacerbated by the slightly different school structure in Scotland, which led to a larger proportion of students in Scottish classes falling within the sample. However, these difficulties should not have biased the results obtained within the four nations. Rather they would have led to larger standard errors in England and Wales than in Scotland and Northern Ireland. The same would have applied to the weighted results for the UK as a whole.

Absences on the day of testing might be important. However, only 2% of students were absent without permission. These students may have been heavy alcohol, tobacco or illicit drug users, and therefore there might have been a slight underestimation of legal and illegal drug use, but the effect was likely to be small. Parental consent was refused for only 1.1% of the total sample of teenagers and the direction of any possible small effect is problematical. 'Local organisers' reported that the overwhelming majority of students answered the questionnaires carefully and seriously. Thus there is no reason to suspect serious over- or under-reporting of proscribed behaviours.

COMPARABILITY WITH OTHER STUDIES

As reported above, compared to 1995 (Miller and Plant 1996), there were only modest changes in drinking or smoking behaviour, though in marked contrast, the use of most illicit drugs had fallen. In large surveys of smoking, drinking and drug use in students aged 12–15 in 1998 in England and Scotland. Goddard and Higgins (1999a,b) report, as here, that the prevalence of smoking is greater among girls. They have found a slight, but significant, fall in some aspects of smoking behaviour between 1996 and 1998. The patterns of drinking, with English teenagers more likely than their Scottish counterparts to have consumed alcohol in the past week, also tally. The international results of the 1995 ESPAD study were broadly similar to those of another international study. The latter also elicited details of drinking and smoking among 15 and 16 year olds (Currie et al. 2000).

There was a strong hint that Northern Ireland may differ in important respects from the rest of the UK. As noted above, Northern Ireland is the only region where boys were (numerically) more likely than girls to have smoked cigarettes. There was also a large gender difference in relation to 'binge drinking'. These findings are broadly in line with other evidence (Loretto 1994, Craig, 1997, Miller and Plant 2000). These results suggest that neither alcohol nor tobacco use had changed significantly since the 1995 ESPAD survey was carried out. It should, however, be noted that the teenage alcohol consumption evident in both studies was at a higher level than those indicated by studies before 1995 (Plant and Cameron op cit.). The reduction of youthful alcohol, tobacco and illicit drug use is an important political objective. Even so, past attempts at achieving behaviour change in this area have not been notably successful (Plant and Plant 1999, Plant 2000, Wright 2000). This study suggests that alcohol and tobacco use among 15 and 16 year olds in the UK may have stabilised after a period of steady increase in alcohol consumption. Moreover, as previously reported, illicit drug use might have fallen. The fact that neither alcohol, tobacco nor illicit drug use had generally risen among UK teenagers is striking. This may be purely a temporary 'lull' in an

upward trend. Alternatively, it may be a sign that some form of natural saturation point has been reached. Historically, alcohol consumption has fluctuated in what Skog (1996), for example has called ‘long waves’. Time will tell. It should be emphasised that the greatest potential threat to the health of the teenagers surveyed related to tobacco, which a third has used in the past month.

PART 2. HEAVY CANNABIS USE

INTRODUCTION

There is a considerable literature concerning the processes by which teenage boys and girls become involved in the heavy use of cigarettes, alcohol and illicit substances. For instance the 'gateway' theory or 'stepping stone' theory (e.g. Plant, 1975, 1987; Torabi et al.1993, Fergusson and Horwood, 2000, Sutherland and Willner, 1998, Ellickson et al. 1999) broadly asserts that heavy users start with legal substances and then move on through cannabis to other illicit drugs.

A host of single causes for the heavy use of illicit drugs have been suggested such as single parent families (Miller, 1997; Hoffman, 1995; Plant and Plant, 1992;Smith and Nutbeam, 1992), family dynamics (Hoffman, 1995; Kandel, 1996; Spruijt and De Goede,1997), parental control and support (Foxcroft and Lowe,1991) feelings of distress (Kandel,1982; Shedler and Block, 1990), genetic factors (Patton,1995; Han et al. 1999) peer influences (Patton, 1995;Wilks et al.,1989), social contexts(Beck et al.,1995) and various personality factors (Adlaf and Smart,1983;Gullone and Moore, 2000; Greene et al., 2000; Patton, 1995; Shedler and Block, 1990;Teichman et al.1989 a and b). In addition there has been interest in the immediate motivation for substance use. Teichman et al. (1989a and b) investigated sensation-seeking, trait-state anxiety and depressive mood, finding that sensation seeking appeared to be the most important. Beck et al. (1995) found that, among college students, social facilitation and 'disinhibition' were the most important drinking contexts for high intensity drinkers. Emotional pain was a rather more important context for women than for men. Novacek et al. (1991) described five different kinds of reason adolescents gave for substance use. These were belonging, coping, pleasure, creativity and aggression. Pleasure and coping were more important among frequent users, with pleasure tending to be stronger among males and coping among females. In similar vein, Wright and Pearl (2000) found that some of the main perceived reasons for drug taking were 'to feel big, grown up', 'to escape problems', 'for kicks, for fun, to feel good' and 'because friends do, trendy'. There had been an increase in 1999 over previous years in the frequency of 'to escape problems'.

Fourteen more general theories of adolescent substance use are reviewed by Petraitis et al. 1995.

Clearly there are likely to be individual differences in the motives and the processes leading adolescents to heavy use of illicit substances. This section uses the UK data to examine possible differences among heavy cannabis users and patterns of illicit drug use within the groups found. Based upon the literature and upon what might be possible from the available data, it was decided to use cluster analysis to divide the sample of heavy users into three groups. The initial expectation was that it would be possible broadly to label the groups found as delinquent-aggressive, outgoing sensation seeking and unhappy-depressed.

METHOD

The *substance use* variables were as follows:

40 or more cigarettes ever
10 or more cigarettes per day in the last 30 days
Alcohol 40 or more times in the past year
Alcohol 20 or more times in the past 30 days
Intoxicated 40 or more times in the past year
Cannabis 40 or more times ever

Cannabis 20 or more times in the past year
Cannabis 6 or more times in the past 30 days
Volatile substances 6 or more times ever
Amphetamines 6 or more times ever
Ecstasy ever
Any illicit drug except cannabis ever.

All these variables were originally measured on seven point scales but have been scored as dichotomies for this study. The starting point was the scale for lifetime cannabis use. On this scale 201 subjects representing 7.7% of the total scored at the top point, i.e. 40 or more times ever. The cut-off points on all the other variables were chosen to give as nearly as possible the same percentage in the heavy user category.

The other variables chosen for study were all intended to reflect possible factors which might be involved in heavy cannabis use.

The *family* variables included were:

Parental knowledge of whereabouts. This was measured by the three items, 'my parents know where I am in the evenings', 'my parents know who I am with in the evenings' (5-point scales) and 'do your parents know where you spend Saturday evenings?' (4-point scale).

Rules set by parents, measured by two items 'my parents set definite rules about what I can do at home' and 'my parents set definite rules about what I can do outside the home' (5-point scales).

Ease of obtaining money from parents (5-point scale)
Warmth and caring from parents (5-point scale)
Mental support from parents (5-point scale)
Satisfaction with the relationship to the mother (5-point scale)
Satisfaction with the relationship to the father (5-point scale)

There were four variables concerning *friends* :

Total number of really good friends
Warmth and caring from the best friend (5-point scale)
Mental support from the best friend (5-point scale)
Satisfaction with the relationships to friends (5-point scale)

Three *leisure time* variables were included:

Riding around on motor-cycles or mopeds just for fun (5-point scale)
Actively participating in sports athletics or other exercise (5-point scale)
Going out in the evening to discos, cafés, parties, etc. (5-point scale)

Seven measures concerned *moods and attitudes:*

The Rosenberg self-esteem scale (Rosenberg, 1965)
A 6-item scale measuring depressed mood in the past 7 days
Satisfaction with self (5-point scale)
Satisfaction with own health (5-point scale)
Satisfaction with own finances (5-point scale)

Belief in obedience to Society's rules (3 items each on a 5-point scale)
Belief that life is stable and predictable (3 items on 5-point scales)

Finally, there were two scales measuring *aggression and delinquency*, the first one containing 6 five-point items largely concerned with aggression against others and the second consisting of four items about stealing and damaging property.

RESULTS

Table 5 shows how the total group of 201 heavy cannabis users (i.e. those using it 40 or more times in their lifetime) differs from the rest on the continuous variables chosen for study. The most significant differences are to be seen on the two variables measuring delinquency-aggression, but there are also several other significant differences including parental knowledge of whereabouts, riding on motor bikes or mopeds and going out in the evenings. There are also variables such as ease of obtaining money from parents, warmth and caring from the best friend and sport which do not distinguish the two groups. Two categorical variables were also significant discriminators. These were gender and intact/non-intact family (gender: heavy using girls 63/1351, 4.7%, boys 138/1274, 10.8%, X^2=32.3,P<.001, family heavy users from intact families 119/1932 , 6.2%, non-intact 77/674, 11.4%, X^2=19.9,P<.001)

Table 5. Heavy cannabis use and the variables selected for cluster analysis[1]

	Light Users	Heavy Users	F
Parental knowledge of whereabouts	Mean 5.75 (SD 2.74) N 2369	7.36 (3.11) 194	47.1***
Parental setting of rules	5.89 (2.20) 2389	6.40 (2.12) 197	12.4***
Ease of obtaining money from parents	3.85 (1.91) 2376	4.04 (1.93) 193	2.1 NS
Warmth and caring from parents	1.66 (0.98) 2383	1.87 (1.08) 197	9.0**
Mental support from parents	1.75 (1.08) 2377	1.92 (1.16) 194	4.0*
Relationship to mother	1.72 (0.93) 2393	1.98 (1.08) 194	10.3**
Relationship to father	2.01 (1.16) 2359	2.56 (1.40) 190	24.1***
Total number of really good friends	5.09 (1.82) 2327	5.52 (1.77) 184	14.0***
Warmth and caring from best friend	2.14 (1.21) 2375	2.30 (1.33) 195	1.6 NS
Mental support from best friend	2.05 (1.17) 2375	2.15 (1.27) 193	0.4 NS
Relationship to friends	1.57 (0.73) 2398	1.45 (0.66) 197	7.1**
Sport	4.08 (0.93) 2415	4.00 (1.05) 201	0.1 NS
Going out in the evenings	3.51 (0.91) 2417	3.86 (0.91) 201	30.8***
Riding on mopeds	1.35 (0.81) 2395	1.90 (1.11) 199	40.7***
Self-esteem	18.46 (4.95) 2365	19.02 (4.90) 196	2.6 NS
Depression in past seven days	11.66 (3.72) 2362	11.50 (3.72) 195	0.4 NS
Satisfaction with self	2.20 (1.10) 2395	2.22 (1.10) 197	0.1 NS
Satisfaction with own health	1.94 (0.92) 2396	2.31 (1.04) 197	23.5***
Satisfaction with finances	2.11 (0.98) 2393	2.25 (1.03) 197	2.9 NS
Obedience to societal rules	9.05 (2.71) 2346	7.70 (2.80) 188	39.7***
Belief in a stable environment	7.57 (2.65) 2343	6.69 (2.34) 188	24.2***
Aggression against others	7.30 (2.55) 2331	10.20 (4.47) 185	66.2***
Thieving and destruction of property	5.11 (2.19) 2339	7.68 (4.00) 189	84.5***

[1] See text *P<0.05 **P<0.01 ***P<0.001

Following this a cluster analysis was performed on the heavy user group using the SPSS K-means Cluster procedure and setting the number of clusters to be sought at three. All variables were transformed to Z-score form prior to clustering and also log transformed where necessary. Missing values were deleted pairwise. In order to obtain a stable result five runs of the cluster program were performed. In the first three runs the final cluster memberships were saved starting from different places in the file. The fourth run was performed on only those cases (the large majority) where cluster membership was the same in all the first three runs. The final cluster centres from the fourth run were then used to initialise the last run in which remaining cases were classified. The results are set out in Table 6. The entry in the column labelled cluster centre is the mean value of the cluster on each variable in standardised form. The next column shows the unstandardised mean. The F-ratio in the last column is descriptive only as the clusters have been chosen to maximise it. However, it is an indication of how far apart the clusters are on the variable in question.

- Three sizeable clusters emerged. The smallest one consisted of 50 subjects very clearly more delinquent-aggressive than the rest (see the last two variables in Table 6). These subjects also found it relatively easy to obtain money from parents, claimed to have a large number of really good friends and did a lot of riding around on motor bikes or mopeds. The cluster also contained the highest proportion of boys. It will be termed the *antisocial cluster*.

- The second largest cluster contained 68 subjects and will be labelled *unhappy*. Compared to the others these subjects appeared to find it difficult to obtain money, warmth, caring or mental support from their parents. The parental control over them was lax, relationships with the parents were poor and support from friends was also lacking. These subjects were less likely to participate in sport and were substantially lower in self-esteem and higher on depressed mood in the past seven days. They were dissatisfied both with their own health and with their financial state.

- Finally, the largest cluster, consisting of 83 cases, might be best described as *ordinary.* The main distinguishing feature is obedience to Society's rules and a belief that life is stable and predictable. Their parents are more likely to know where they are, the parental relationships and the relationships with friends are relatively good. They score the lowest on delinquency-aggression.

It is noteworthy that parental rule setting, intact/non-intact family and going out with friends did not seem to distinguish the three clusters and were dropped from the analysis. The distances between the final cluster centres were *antisocial- ordinary* 3.56, *antisocial-unhappy* 3.85 and *ordinary-unhappy* 3.78. The unhappy cluster is more dispersed than the other two (mean distances of cases from the cluster centre: antisocial 4.16, ordinary 4.10 unhappy 4.49 $F=4.66$, $P<.05$).

Table 6. Cluster analysis of the heavy users of cannabis.

	Cluster 1 Antisocial N=50		Cluster 2 Ordinary N=83		Cluster 3 Unhappy N=68		F
	Cluster Centre[2]	Mean	Cluster Centre	Mean	Cluster Centre	Mean	
Parents know whereabouts	-0.01	7.3	-0.35	6.3	0.44	8.7	12.5***
Ease of obtaining money from parents	-0.35	3.4	-0.21	3.6	0.52	5.0	15.8***
Warmth and caring from parents	-0.29	1.6	-0.49	1.3	0.82	2.7	50.4***
Mental support from parents	-0.39	1.5	-0.53	1.3	0.93	3.0	80.2***
Relationship to mother	-0.25	1.7	-0.38	1.6	0.68	2.7	27.5***
Relationship to father	-0.14	2.4	-0.32	2.1	0.51	3.2	12.9***
Total number of really good friends	-0.42	6.3	0.10	5.3	0.17	5.2	6.2**
Warmth and caring from best friend	0.11	2.5	-0.26	2.0	0.23	2.6	4.2*
Mental support from best friend	0.16	2.4	-0.24	1.9	0.17	2.4	3.9*
Relationship to friends	-0.10	1.4	-0.24	1.3	0.37	1.7	7.7***
Sport	-0.28	4.3	-0.17	4.2	0.41	3.6	8.8**
Riding on mopeds	0.36	2.3	-0.13	1.8	-0.11	1.8	4.5*
Self-esteem	0.31	20.6	0.24	20.2	-0.53	16.4	16.4***
Depression in past seven days	-0.33	10.3	-0.27	10.5	0.58	13.7	19.9***
Satisfaction with self	-0.31	1.9	-0.31	1.9	0.63	2.9	23.6***
Satisfaction with own health	-0.22	2.1	-0.35	2.0	0.61	3.0	22.6***
Satisfaction with finances	-0.21	2.0	-0.24	2.0	0.46	2.7	11.2***
Obedience to societal rules	-0.14	7.3	0.39	8.8	-0.40	6.6	12.8***
Belief in a stable environment	-0.13	6.4	0.22	7.2	-0.19	6.3	3.6*
Aggression against others	2.69	15.9	0.10	7.6	0.71	9.2	121.3***
Thieving and destruction of property	2.11	11.1	0.00	5.2	1.24	8.4	52.1***
Gender	-0.46	90% male	0.13	63% male	0.18	60%male	7.5**

[2] Z-score *P<0.05 **P<0.01 ***P<0.001

In Table 7 the total sample is divided into light cannabis users and the three derived clusters of heavy cannabis users and these four groups are compared on their use of other substances. In each case the cut-off points defining heavy use on the other substances have been chosen to select as nearly as possible the 201 heaviest users (i.e. similar to the proportion of heavy cannabis users). The table shows numbers and percentages; thus 35 out of the 46 'antisocial' subjects (76.1%) had smoked 40 or more cigarettes in their lifetime. Logistic regressions were run using the PcCarp program (Fuller et al. 1989) to allow for clustering within schools. Light cannabis users, 'antisocial' heavy users and 'unhappy' heavy users are compared to the 'ordinary' heavy users and stars indicate significant differences. For instance, on ecstasy ever, the light cannabis users are lower than the 'ordinary' heavy users ($P<.001$) and the 'unhappy' heavy users are higher ($P<.05$).

- It is clear from Table 7 that there are very strong associations between heavy cannabis use and heavy use of other substances. However, there are also several significant differences between the clusters of heavy cannabis users. The 'ordinary' group invariably has a numerically lower rate of usage than both the 'antisocial' and the 'unhappy' groups. Significant differences occur particularly for illicit substances where the 'unhappy' group is higher than the 'ordinary' on use of cannabis in the past 30 days, volatile substances, amphetamines and any illicit drug bar cannabis. The 'antisocial' group is higher than the 'ordinary' on cannabis in the past 30 days, volatile substances, ecstasy and borderline on use of any drug bar cannabis. On legal substances the 'unhappy' group is significantly worse than the 'ordinary' on cigarette use in the past 30 days.

Table 7 also records the results on two measures of social status. These were either parent with a university degree compared to the rest and the student's perception of how well off his family was. Neither measure significantly distinguished the four groups of cannabis users.

Table 7. Cannabis use, other substance use and social status.

	Light Cannabis Users N=2440[3]	Heavy cannabis users			Overall F
		Antisocial N=50	Ordinary N=83	Unhappy N=68	
40+ cigarettes in the lifetime	505*** 20.8%	39 78.0%	61 74.4%	56 82.4%	59.0 ***
10+ cigarettes per day last 30 days	84*** 3.5%	12 24.0%	13 15.7%	21* 30.9%	36.7***
Alcohol 40+ times in the past 12 months	280*** 12.0%	26 55.3%	37 45.7%	33 52.4%	57.3***
Alcohol 20+ times in the past 30 days	76 3.2%	9 18.0%	5 6.1%	13* 19.7%	15.7***
Intoxicated 40+ times in the past 12 months	81*** 3.4%	14 30.4%	23 29.1%	21 31.8%	52.5***
5+ drinks in a row 10+ times in past 30 days	82*** 3.4%	16 32.0%	15 18.1%	14 20.6%	40.1***
Cannabis 20+ times in the past 12 months	21*** 0.9%	39 81.3%	60 72.3%	52 77.6%	152.4***
Cannabis 6+ times in the past 30 days	45*** 1.9%	36* 75.0%	47 56.0%	49* 73.1%	162.9***
Volatile substance 6+ times in the life	92*** 3.8%	15** 30.6%	11 13.3%	23** 33.8%	43.7***
Amphetamines 6+ times in the life	40*** 1.6%	16 33.3%	20 24.4%	32** 47.1%	86.1***
Ecstasy ever	75*** 3.1%	20** 41.7%	15 18.5%	20 29.9%	57.3***
Any illicit drug bar cannabis ever	66*** 2.7%	22 44.0%	21 25.3%	32* 47.1%	79.8***
Either parent with a university degree	1023 44.6%	15 31.3%	30 39.0%	25 41.0%	1.1 NS
Family perceived financially less well-off than average	158 6.6%	3 6.1%	6 7.2%	11 17.2%	3.2 NS

* P<.05 ** P<.01 *** P<.001. Significance tests in the body of the table compare the light users, unhappy and antisocial groups to the ordinary group.

DISCUSSION

This section has attempted a more detailed description of the heavy cannabis users in the ESPAD 1999 study, i.e. those students who said they had used cannabis more than 40 times in their lifetime. The initial expectation that there might be three groups whose immediate motivations would be broadly described as rebellion against authority, having a good time and self-medication for stress was not quite fully realised. There were indeed 'antisocial' and 'unhappy' clusters but there was no clear evidence that the remaining 'ordinary' group was just out to have a good time. This was probably because there were few suitable variables contained within the study, which might

[3] Denominators for the percentages vary slightly due to missing values.

measure this motivation. However, it was apparent that heavy cannabis users as a whole were more likely than light users to go out in the evenings (Table 5) to discos, parties etc. This applied about equally to all three clusters within the heavy user group suggesting that part of the motivation of students in all three was to socialise and to have fun.

The results obtained should perhaps be regarded more as exploratory and descriptive rather than as definitive. Exactly three clusters were sought and different findings might have been obtained had this not been the case. However, the clusters found are reasonably coherent and distinct from each other, although the 'unhappy' cluster is less homogeneous than the other two.

- The smallest cluster, labelled 'antisocial', consisted of 50 pupils (25% of the total heavy cannabis users) and its main defining features were aggression against others and thieving and destruction of property. Students within it were likely, for example, to have hit one of their teachers, used a weapon to get something from somebody, taken something from a shop without paying for it or damaged school property on purpose. The cluster contained a higher proportion of boys than did the other two clusters and its members also claimed, on average, the highest number of really good friends and were the most likely to ride around on motor bikes or mopeds.

- The cluster labelled 'unhappy' contained 68 pupils (34% of the total). It was the most extreme on several variables. Family relationships appeared to be difficult. The parents of these students tended not to know where they were and gave less warmth, caring and mental support. Relationships to both the mother and the father were poorer than for the other clusters and money was hard to obtain from the parents. The same difficulties applied to a somewhat lesser extent to the relationships with friends. These students also showed lower self-esteem, greater unhappiness in the past seven days, less satisfaction with self and less satisfaction with their own health. They were less likely to participate in sports and less satisfied with their own finances.

- The last cluster, labelled 'ordinary' contained 83 pupils (41.5% of the total). It was distinct mainly in that its members tended to feel that there were absolute rules in life, which they should not break, and that the environment was reasonably stable and predictable. They were lowest on aggression against others and destruction of property. It was noticeable that they were also distinctly less likely than members of other clusters to be heavy users of other substances. If cannabis is a staging post on the way to harder drugs then it is at cannabis that these subjects tend to stop.

Although in this cross-sectional study it is difficult to distinguish cause and effect some final speculations about motivations and processes involved in heavy teenage drug use may be offered. A relatively small group of heavy users seem to be rebellious youths with behaviour difficulties who may be deliberately breaking society's rules. This group seem particularly likely to progress to further deviant behaviour and might be well described by 'problem behaviour' theory (Donovan and Jessor, 1978; Donovan et al. 1988). A larger group are unhappy and may be using drugs as self-medication. There might well be a vicious circle existing within this group whereby poor interpersonal and family relationships lead to low self-esteem and to drug use which, in turn, worsens both the interpersonal relationships and the self-esteem. McGee et al. (2000) provide some evidence for such a process although, in their study, the direction of causation seemed to depend on the age of the subjects. Finally the largest group seem to be outgoing individuals probably taking drugs for fun and mainly restricting themselves to alcohol, tobacco and cannabis.

The findings of this study suggest that heavy cannabis using adolescents in the UK are by no means a homogeneous group and therefore that different descriptions of the process by which they become users are necessary. Cannabis is so widely used that for many young adults it has now become an accepted part of their normal social activities. Cannabis use per se is clearly not necessarily associated with other forms of illicit drug use, problems or 'deviance'.

PART 3. FAMILY STRUCTURE, PARENT-CHILD RELATIONS, ALCOHOL AND OTHER DRUG USE AMONG TEENAGERS: A COMPARISON WITH THE FRENCH FINDINGS

Family variables have often been shown to be related to illicit drug use. Findings suggest that adolescents from divorced families experience poorer mental health than those from intact families (de Goede and Spruijt, 1996) and report more alcohol and other drug use and antisocial behaviours (Neher and Short, 1998). Adolescents from non-intact families tend both to drink more (Foxcroft and Lowe, 1991) or at an earlier age (Isohanni et al., 1994) and to be more frequent users of illicit drugs (Plant and Plant, 1992; Denton and Kempfe 1994, Hoffman, 1995; Miller, 1997). Adolescents from single families were more likely to smoke (Miller,1997) and/or to consume alcohol (Griffin et al., 2000) and scored lowest on the different aspects of psychological well being (Spruijt and de Goede, 1997). Adolescents who have lived in a stepfamily during childhood were more likely to use tobacco, alcohol, and illicit drugs at age 18 (Nicholson et al. 1999). Smoking prevalence rates were raised among teenagers from both reconstituted and lone-parent families (Glendinning et al., 1997). Results appear conflicting regarding the impact of family structure on adolescent substance use, depending on how the concept is operationalised, but overall, Amato and Keith (1991) confirmed, in their meta-analysis, that parental divorce lowers the well being of children, even if the effect is generally weak.

Other family variables have also been shown to be related to or to predict substance use. Parental use of tobacco or alcohol is a precursor of the onset of smoking or drinking among their offspring (see review, Denton and Kempfe 1994). Low parental support or monitoring is associated with high rates of adolescent substance use (Steinberg et al., 1994; Chilcoat and Anthony, 1996; Glendinning et al., 1997; Cohen and Rice, 1997; Piko, 2000). Closeness or a positive relationship with parents reduces the risk of adolescent substance use (Kandel et al., 1978). Both Hoffman (1995) and Sololkatz et al. (1997) pointed out the over-riding importance of family dynamics such as parent-child relationships and the degree of parental control.

Furthermore, the pattern of parental monitoring and attachment is likely to be influenced by family structure (Hoffman, 1995). In non-standard families, the relationships with the absent parent (more often the father) might be poor or non-existent, and single parent families may be less supportive than two-parent families. Thus the effects of family structure could be mediated by factors such as parental support or bonding.

It appears that no previous study has compared possible different family effects on teenage drinking and other drug use in two different countries. However, Foxcroft and Lowe (1991) suggested that there are possible cultural variations in the pattern of parental monitoring between countries. We could hypothesise that British families are less supportive and exert less control than French families do and, consequently that the relationships between parental monitoring and substance use are not exactly the same in the two countries. On the other hand, several studies (e.g. Miller,1997) carried out in UK have shown an effect of the family structure on adolescent use, but this result was not found in surveys conducted in France (Choquet and Ledoux, 1994).

Information collected during ESPAD 1999 has been used to compare the UK and French prevalence rates for the use of alcohol, tobacco, cannabis and other illicit drugs and to examine and compare the associations of substance use with family structure, maternal and paternal relationships and parental monitoring within the two countries.

THE FRENCH SURVEY

The French ESPAD 1999 formed a part of a larger survey of French adolescents. A national representative sample was drawn using a two-stage sampling procedure. First, three hundred schools were drawn from computerised lists of schools updated in November 1998 (Ministry of Education-DPD) and then two classes were selected from each. At the first stage the sample was stratified on four variables. These were:

Type of school: junior high school / high school / vocational school;
Sector of school: public / private;

In France, 20% of students are enrolled in private schools; this percentage varies from one region to another (% is higher in Catholic regions) and according to the type of the school (more private schools in primary education and academic schools than in vocational schools).
Type of area: urban / rural;
Educational characteristics of the school: ZEP / no ZEP.
In France, the Ministry of Education have defined "Priority Zones of schooling" (ZEP) according to several characteristics (e.g. low SES, high unemployment, high % of immigrant population, high % of drop out from school). The schools located in these areas (10%) receive more grants and have lower class sizes.

Sampling was proportional to size of school.

In each school, two grades/classes were drawn. 93.8% (563/600) of these classes participated. Non participation was due either to refusal of the headmaster (10 schools), to students not being in school or to a poorly applied data collection procedure. All students attending these classes were included and filled out the questionnaire during a course period. Data were collected between March 22nd and May 7th. Very few students (1.0%) refused to participate; 8.9 % of the students were absent. Parental permission for their child to participate was refused in only 1.2% of cases. The French ESPAD sample contained 1,167 boys and 1,104 girls who provided usable information.

ANALYSES

In both countries the statistical procedures used attempted to allow for the cluster sampling designs. In the UK this was achieved using the Pccarp package from the University of Iowa (Fuller et al., 1989). In France, the SAS package procedure PROC GENMOD was used. However, as the cluster effects appear to be small, between country comparisons of proportions of subjects using substances etc. are made without correction. Using conventional methods, all the significant findings reported would still hold were the sample sizes to be halved. Comparisons on the predictor variables within each country were mostly achieved using logistic regressions corrected for sample design. In some comparison within France Pearson's Chi-square was used as indicated in the tables.

RESULTS

Tables 8 and 9 set out the gender distributions for the two countries on the independent and the dependent variables. In both countries the large majority of the subjects lived in intact families and very few live in families in which neither natural parent is present. The level of satisfaction with subject to parent relationships appeared to be lower for the girls in both countries. Furthermore girls

in both countries were more likely than boys to say that their parents know where they are on Saturday evenings. UK girls seemed less likely to live in intact families than French ones and were more satisfied with the maternal relationship. There were striking differences between France and the UK for both boys and girls on the parental monitoring variable. French parents were much more likely than UK ones to always know where their teenage children were on Saturday nights. From table 6, it is apparent that the French students were slightly more likely than the UK ones to smoke cigarettes, the UK students were much heavier consumers of alcohol than the French, the two countries were about equal in cannabis use and the UK students were slightly more likely to have used volatile substances or illicit drugs other than cannabis.

Tables 10 – 13 show the proportions of the samples using alcohol, tobacco or illicit drugs within the categories of the independent variables (e.g. in Table 10line 1, 26.5% of French students living in intact families smoked one or more cigarettes per day in the past 30 days). In both countries the pattern of use was clear. Students living in intact families were less likely than other students to use any substances, licit or illicit. There seemed to be little to choose between the other three types of family. Tables 11and 12 suggest that the relationships of the students to their parents was important in much the same way in both countries, with those who were dissatisfied being more likely to use substances. Finally from Table 13 in both countries, it appeared that there was a strong relationship between parental awareness/monitoring and the use of all the substances: the lower the parental awareness/monitoring, the more teenagers drank alcohol, smoked tobacco or used cannabis or other illicit drugs

Table 8. Distributions of family structure, relationships to parents and parental awareness of the whereabouts of the subject on Saturday nights within France and the United Kingdom (%)

	France		**United Kingdom**		**Between country comparison (Z)[2]**	
	Boys	**Girls**	**Boys**	**Girls**	**Boys**	**Girls**
Family structure						
Intact	71.7	73.7*[1]	73.5	66.1 NS	1.0	4.1***
Restructured	10.3	11.5	12.0	15.1		
Single parent	13.2	12.1	13.3	17.0		
Other	4.8	2.7	1.2	1.7		
Relationship with mother						
Satisfied	82.1	74.3***	84.4	81.1**	1.5	4.0***
Neutral	11.6	14.9	10.3	8.7		
Not satisfied	6.4	10.8	5.4	10.3		
Relationship with father						
Satisfied	74.7	64.7***	76.1	68.3**	0.8	1.9
Neutral	13.7	17.9	11.0	11.3		
Not satisfied	11.7	17.5	12.9	20.4		
Parental awareness						
Always	66.2	75.4***	44.1	53.9**	11.3***	11.5***
Quite often	19.6	15.0	31.3	23.4		
Sometimes	9.6	6.9	14.6	15.2		
Not usually	4.6	2.7	10.0	7.4		

1 significance levels of gender differences within countries *P<.05 **P<.01 ***P<.001 In France Chi-square is used. In the UK logistic regression corrected for clustering is used.

2 Comparisons of the largest proportions between countries ignoring other differences (e.g. for girls on family structure Z for the difference between 73.7% and 66.1% is 4.13, P<.001)

Table 9. Prevalences of substance use (%), gender differences within France and the United Kingdom and between country differences

	France		United Kingdom		Between country comparisons (Z)[2]	
	Boys N=1174	**Girls N=1110**	**Boys N=1280**	**Girls N=1361**	**Boys**	**Girls**
1+ cigarettes /day in the past 30 days	30.3	32.5 ns[1]	21.3	26.4**	5.1***	3.3***
Alcohol 6+ times in the past 30 days	21.2	11.9 ***	32.4	29.7 ns	6.3***	11.3***
Alcohol 20+ times in the past year	16.8	7.2 ***	41.0	30.6***	13.8***	15.9***
Binge drinking 3+ times past 30 days	15.9	6.9 ***	32.7	26.9***	9.9***	14.1***
Drunk 3+ times in the past year	17.9	9.7 ***	51.8	49.6 ns	18.9***	24.6***
Cannabis 3+ times ever	28.2	22.6 **	28.8	22.3***	0.3	0.2
Cannabis 3+ times in the past year	23.6	18.8**	21.8	16.8**	1.1	1.3
Cannabis in the past 30 days	24.6	18.8***	18.5	14.5**	3.7***	2.8**
Volatile substance use ever	12.3	8.9**	13.9	16.8*	1.2	6.0***
Any illicit drug except cannabis ever	6.4	4.6 ns	12.7	11.4 ns	5.4***	6.4***

1 significance levels of gender differences within countries *P<.05 **P<.01 ***P<.001 In France Chi-square is used. In the UK logistic regression corrected for clustering is used.

1 Comparisons of the largest proportions between countries ignoring other differences e.g. for boys on 1+ cigarettes/day in the past 30 days Z for the difference between 30.3% and 21.3% is 5.1, P<.0.001

Table 10. Cigarette, alcohol and illicit drug use according to family structure[+] within France and the United Kingdom (%).

		Boys				Girls			
		Intact	Restructured	Single parent	Within Country P	Intact	Restructured	Single parent	Within Country P
	France	N=842	N=121	N=155		N=818	N=128	N=134	
	UK	*N=953*	*N=156*	*N=172*		*N=850*	*N=194*	*N=219*	
1+ cigarettes /day in the past 30 days	**France**	**26.5**	**42.5**	**37.7**	**<.001**	**30.1**	**44.5**	**33.1**	**<.01**
	UK	***18.3***	***25.0***	***21.5***	***NS***	***20.8***	***36.6***	***34.7***	***<.001***
Alcohol 6+ times in the past 30 days	**France**	**19.9**	**20.9**	**26.7**	**NS**	**11.3**	**14.8**	**11.9**	**NS**
	UK	***30.6***	***34.6***	***38.1***	***NS***	***26.4***	***34.8***	***36.5***	***NS***
Alcohol 20+ times in the past year	**France**	**16.2**	**14.4**	**21.9**	**NS**	**6.2**	**10.6**	**8.5**	**NS**
	UK	***38.5***	***44.1***	***48.8***	***NS***	***25.4***	***35.4***	***45.3***	***<.001***
Binge drinking 3+ times past 30 days	**France**	**14.8**	**17.5**	**17.5**	**NS**	**5.8**	**12.5**	**9.0**	**<.05**
	UK	***28.9***	***48.4***	***30.2***	***<.001***	***21.4***	***31.8***	***43.6***	***<.001***
Drunk 3+ times in the past year	**France**	**17.5**	**20.4**	**17.3**	**NS**	**8.4**	**15.3**	**11.9**	**<.05**
	UK	***48.7***	***55.9***	***59.9***	***NS***	***44.7***	***56.4***	***61.6***	***<.05***
Cannabis 3+ times ever	**France**	**25.6**	**39.2**	**36.2**	**<.001**	**21.3**	**29.1**	**23.9**	**NS**
	UK	***27.8***	***28.1***	***28.9***	***NS***	***15.6***	***30.4***	***37.2***	***<.001***
Cannabis 3+ times in the past year	**France**	**22.1**	**29.6**	**29.0**	**NS**	**17.2**	**24.2**	**21.5**	**NS**
	UK	***19.6***	***27.0***	***25.0***	***NS***	***10.5***	***26.3***	**30.6**	***<.001***
Cannabis in the past 30 days	**France**	**23.3**	**29.0**	**29.5**	**NS**	**17.7**	**25.8**	**18.5**	**NS**
	UK	***17.3***	***19.5***	***17.5***	***NS***	***9.1***	***22.3***	**26.5**	***<.001***
Volatile substance use ever	**France**	**11.6**	**14.1**	**14.9**	**NS**	**8.3**	**9.4**	**11.3**	**NS**
	UK	***13.3***	***17.4***	***12.8***	***NS***	***15.0***	***17.5***	**21.8**	***NS***
Any illicit drug except cannabis ever	**France**	**5.2**	**10.7**	**8.4**	**<.05**	**3.4**	**7.8**	**7.5**	**<.05**
	UK	***10.3***	***16.7***	***18.0***	***NS***	***9.1***	***17.0***	***15.1***	***NS***

In both countries the significance levels are arrived at using logistic regression for clustering. In France PROC GENMOD reports chi-square values in the UK pcCarrp reports F values.
Within France the test used was Pearson's Chi-square , within the UK it was logistic regression corrected for clustering.

+Due to small numbers students living in 'other' families are omitted

Table 11. Cigarette, alcohol and illicit drug use and the maternal relationship within France and the United Kingdom (%)

		Boys				Girls			
		Satisfied	Neutral	Not satisfied	Within Country P	Satisfied	Neutral	Not satisfied	Within Country P
	France	N=938	N=132	N=73		N=815	N=164	N=118	
	UK	*N=1088*	*N=132*	*N=69*		*N=1032*	*N=111*	*N=130*	
1+ cigarettes /day in the past 30 days	**France**	**28.8**	**31.3**	**39.7**	**NS**	**29.8**	**39.5**	**39.3**	**<.05**
	UK	***18.0***	***29.5***	***37.7***	***<.01***	***23.4***	***33.6***	***39.7***	***<.01***
Alcohol 6+ times in the past 30 days	**France**	**20.3**	**16.0**	**35.6**	**<.01**	**11.1**	**14.2**	**13.1**	**NS**
	UK	***30.3***	***35.9***	***50.0***	***NS***	***28.0***	***29.1***	***41.0***	***NS***
Alcohol 20+ times in the past year	**France**	**16.1**	**12.3**	**27.8**	**<.05**	**6.4**	**7.4**	**11.6**	**NS**
	UK	***38.4***	***51.6***	***56.1***	***NS***	***27.9***	***42.1***	***40.9***	***NS***
Binge drinking 3+ times past 30 days	**France**	**14.3**	**15.3**	**31.5**	**<.001**	**7.0**	**4.3**	**9.3**	**NS**
	UK	***28.8***	***45.8***	***52.2***	***<.01***	***25.1***	***35.1***	***34.6***	***NS***
Drunk 3+ times in the past year	**France**	**17.7**	**12.7**	**26.4**	**<.05**	**8.9**	**13.0**	**8.9**	**NS**
	UK	***48.4***	***67.2***	***72.7***	***<.001***	***45.4***	***69.2***	***64.3***	***<.001***
Cannabis 3+ times ever	**France**	**26.5**	**37.4**	**36.1**	**<.05**	**20.9**	**25.8**	**29.3**	**NS**
	UK	***26.1***	***40.3***	***44.4***	***<.001***	***18.7***	***36.4***	***33.8***	***<.001***
Cannabis 3+ times in the past year	**France**	**22.4**	**31.0**	**27.1**	**NS**	**17.2**	**21.0**	**26.6**	**<.05**
	UK	***19.1***	***35.1***	***31.8***	***<.01***	***14.0***	***27.3***	***25.2***	***<.05***
Cannabis in the past 30 days	**France**	**22.9**	**35.2**	**28.2**	**<.01**	**17.6**	**20.5**	**23.9**	**NS**
	UK	***15.8***	***27.3***	***25.8***	***<.05***	***13.0***	***13.6***	***23.1***	***NS***
Volatile substance use ever	**France**	**10.9**	**15.2**	**24.7**	**<.01**	**8.4**	**6.7**	**13.6**	**NS**
	UK	***12.5***	***18.9***	***31.9***	***<.05***	***14.6***	***12.7***	***36.2***	***<.01***
Any illicit drug except cannabis ever	**France**	**5.2**	**9.1**	**15.1**	**<.001**	**3.9**	**3.7**	**9.3**	**<.05**
	UK	***10.7***	***14.4***	***29.4***	***<.05***	***9.2***	***24.5***	***17.6***	***<.01***

In both countries the significance levels are arrived at using logistic regression corrected for clustering. In France PROC GENMOD reports chi-square values in the UK PcCarp reports F values.

Table 12. Cigarette, alcohol and illicit drug use and the paternal relationship within France and the United Kingdom (%)

		Boys				Girls			
		Satisfied	Neutral	Not satisfied	Within Country P	Satisfied	Neutral	Not satisfied	Within Country P
	France	N=825	N=151	N=129		N=695	N=192	N=188	
	UK	*N=1088*	*N=132*	*N=69*		*N=1032*	*N=111*	*N=130*	
1+ cigarettes /day in the past 30 days	**France**	**25.9**	**37.6**	**42.6**	***<.001***	**27.3**	**37.6**	**45.2**	***<.001***
	UK	***17.4***	***25.5***	**31.5**	***<.01***	***23.1***	***20.0***	***35.5***	***<.05***
Alcohol 6+ times in the past 30 days	**France**	**19.2**	**24.0**	**25.2**	***NS***	**10.1**	**14.6**	**15.4**	***NS***
	UK	***30.8***	***36.4***	***40.1***	***NS***	***26.7***	***25.0***	***40.3***	***<.05***
Alcohol 20+ times in the past year	**France**	**15.6**	**15.5**	**19.7**	***NS***	**6.7**	**8.0**	**7.7**	***NS***
	UK	***39.8***	***43.5***	***48.1***	***NS***	***27.8***	***29.3***	***37.4***	***NS***
Binge drinking 3+ times past 30 days	**France**	**13.3**	**20.5**	**20.2**	***<.05***	**6.3**	**7.3**	**8.5**	***NS***
	UK	***28.3***	***41.4***	***47.0***	***<.001***	***23.5***	***31.2***	***35.9***	***NS***
Drunk 3+ times in the past year	**France**	**15.3**	**20.8**	**25.4**	***<.01***	**7.7**	**13.9**	**1.34**	***<.01***
	UK	***50.6***	***57.4***	***55.3***	***NS***	***45.3***	***47.8***	***63.2***	***<.05***
Cannabis 3+ times ever	**France**	**24.3**	**34.9**	**40.5**	***<.001***	**18.2**	**29.2**	**32.4**	***<.001***
	UK	***27.0***	***29.3***	***37.7***	***NS***	***16.7***	***22.1***	***36.6***	***<.001***
Cannabis 3+ times in the past year	**France**	**19.8**	**29.7**	**33.3**	***<.001***	**14.8**	**23.5**	**28.7**	***<.001***
	UK	***20.8***	***19.3***	***30.4***	***NS***	***11.7***	***19.3***	***29.0***	***<.001***
Cannabis in the past 30 days	**France**	**19.9**	**32.4**	**38.6**	***<.001***	**15.2**	**25.1**	**26.0**	***<.001***
	UK	***16.3***	***17.0***	***29.3***	***<.05***	***10.0***	***20.1***	***22.7***	***<.01***
Volatile substance use ever	**France**	**10.1**	**16.6**	**17.8**	***<.01***	**7.2**	**9.9**	**12.8**	***<.05***
	UK	***12.8***	***18.4***	***18.3***	***NS***	***13.9***	***12.1***	***26.1***	***<.001***
Any illicit drug except cannabis ever	**France**	**4.7**	**9.3**	**11.6**	***<.01***	**3.0**	**2.6**	**11.7**	***<.001***
	UK	***10.1***	***12.8***	***24.2***	***<.01***	***9.9***	***8.6***	***14.8***	***NS***

In both countries the significance levels are arrived at using logistic regression corrected for clustering. In France PROC GENMOD reports chi-square values in the UK PcCarp reports F values.

Table 13. Cigarette, alcohol and illicit drug use within France and the United Kingdom according to parental awareness of the whereabouts of the subject on Saturday evenings (%).

		Boys					Girls				
		Always know	Quite often know	Some-times know	Do not usually know	Within Country P	Always know	Quite often know	Some-times know	Do not usually know	Within Country P
	France	N=698	N=207	N=101	N=48		N=760	N=151	N=70	N=27	
	UK	*N=576*	*N=409*	*N=190*	*N=130*		*N=693*	*N=299*	*N=195*	*N=95*	
1+ cigarettes /day in the past 30 days	**France**	**25.5**	**34.3**	**42.6**	**68.8**	***<.001***	**28.0**	**46.0**	**50.7**	**66.7**	***<.001***
	UK	***11.3***	***19.0***	***34.7***	***46.9***	***<.001***	***13.9***	***30.9***	***41.5***	***66.3***	***<.001***
Alcohol 6+ times in the past 30 days	**France**	**17.7**	**26.6**	**27.8**	**43.5**	***<.001***	**9.2**	**22.1**	**20.3**	**12.0**	***<.001***
	UK	***26.3***	***34.3***	***42.9***	***36.8***	***<.001***	***23.4***	***35.2***	***32.5***	***49.4***	***<.001***
Alcohol 20+ times in the past year	**France**	**13.3**	**22.9**	**22.3**	**30.4**	***<.001***	**5.0**	**15.0**	**13.0**	**23.1**	***<.001***
	UK	***31.7***	***45.4***	***49.4***	***55.0***	***<.001***	***23.2***	***36.5***	***32.4***	***61.7***	***<.001***
Binge drinking 3+ times past 30 days	**France**	**11.7**	**20.8**	**20.8**	**38.3**	***<.001***	**4.6**	**13.3**	**17.1**	**11.1**	***<.001***
	UK	***22.2***	***33.7***	***40.5***	***61.2***	***<.001***	***15.0***	***32.8***	***43.6***	***61.1***	***<.001***
Drunk 3+ times in the past year	**France**	**12.6**	**25.3**	**28.0**	**46.7**	***<.001***	**5.8**	**19.1**	**27.5**	**34.6**	***<.001***
	UK	***35.2***	***55.0***	***73.5***	***83.6***	***<.001***	***35.4***	***58.0***	***68.8***	***87.5***	***<.001***
Cannabis 3+ times ever	**France**	**21.8**	**35.5**	**51.5**	**69.6**	***<.001***	**15.7**	**45.7**	**49.3**	**50.0**	***<.001***
	UK	***16.8***	***32.3***	***41.4***	***52.3***	***<.001***	***9.4***	***30.1***	***34.7***	***62.8***	***<.001***
Cannabis 3+ times in the past year	**France**	**16.4**	**31.2**	**45.5**	**60.9**	***<.001***	**13.1**	**34.7**	**42.9**	**42.3**	***<.001***
	UK	***12.0***	***23.7***	***27.0***	***50.4***	***<.001***	***5.9***	***20.5***	***29.4***	***53.7***	***<.001***
Cannabis in the past 30 days	**France**	**16.7**	**34.2**	**44.9**	**66.0**	***<.001***	**13.0**	**37.3**	**42.0**	**40.7**	***<.001***
	UK	***11.3***	***19.2***	***20.2***	***41.5***	***<.001***	***3.8***	***15.8***	***26.9***	***56.8***	***<.001***
Volatile substance use ever	**France**	**9.2**	**15.9**	**19.8**	**29.8**	***<.001***	**7.1**	**15.4**	**10.0**	**26.9**	***<.001***
	UK	***8.6***	***16.9***	***17.9***	***24.0***	***<.001***	***9.8***	***17.8***	***26.3***	***44.2***	***<.001***
Any illicit drug except cannabis ever	**France**	**3.7**	**7.3**	**12.9**	**22.9**	***<.001***	**2.2**	**9.3**	**8.6**	**33.3**	***<.001***
	UK	***7.1***	***13.7***	***13.7***	***32.3***	***<.001***	***4.9***	***14.4***	***17.0***	***36.8***	***<.001***

In both countries the significance levels are arrived at using logistic regression corrected for clustering.

Table 14 sets out the significant findings when logistic regressions were run on the dependent variables entering all the predictor variables together. Because of very small numbers, those living in 'other' families are omitted from the calculations. Only significant findings are shown.

Table14. Odds ratios obtained when family structure gender, maternal relationships, paternal relationships and parental awareness of the whereabouts of the subject on Saturday nights are used together to predict substance use.

		Family structure		Gender	Maternal relationships		Paternal relationships		Parental awareness		
		Single parent	Restructured	Girls	Neutral	Not satisfied	Neutral	Not satisfied	Quite often	Some-times	Usually not
1+ cigarettes /day in the past 30 days	FRANCE	**1.10**	**1.74*** **	-	-	-	**1.60****	**1.82*** **	**1.67*** **	**2.38*** **	**6.02*** **
	UK	***1.34***	***1.47****	***1.53****	-	-	-	-	***2.47*** **	***4.53*** **	***7.93*** **
Alcohol 6+ times past 30 days	FRANCE	-	-	**0.51*** **	-	-	-	-	**1.98*** **	**1.79****	**2.48****
	UK	-	-	-	-	-	-	-	***1.62****	***1.82****	***1.67***
Alcohol 20+ times past year	FRANCE	-	-	**0.40*** **	**0.93**	**2.04****	-	-	**2.44*** **	**1.88****	**2.61****
	UK	***1.87****	***1.27***	***0.63****	-	-	-	-	***1.88*** **	***1.81****	***2.94*** **
Binge 3+ times past 30 days	FRANCE	-	-	**0.41*** **	**0.78**	**1.71***	-	-	**2.44*** **	**2.45*** **	**3.76*** **
	UK	***1.65****	***1.70****	-	-	-	-	-	***2.31*** **	***3.28*** **	***6.32*** **
Drunk 3+ times in the past year	FRANCE	-	-	**0.53*** **	-	-	**1.65***	**1.66****	**2.71*** **	**3.69*** **	**7.04*** **
	UK	***1.81****	***1.21***	-	***1.93****	***1.59***	-	-	***2.40*** **	***4.39*** **	***8.65*** **
Cannabis 3+ times ever	FRANCE	**1.14**	**1.53***	-	-	-	**1.47***	**1.77*** **	**2.66*** **	**4.07*** **	**7.08*** **
	UK	***1.64****	***1.16***	***0.71****	-	-	-	-	***3.14*** **	***3.89*** **	***7.44*** **
Cannabis 3+ times in the past year	FRANCE	-	-	-	-	-	**1.47***	**1.89*** **	**2.64*** **	**4.11*** **	**6.27*** **
	UK	***2.02*** **	***1.68****	-	-	-	-	-	***3.07*** **	***4.08*** **	***10.44*** **
Cannabis in the past 30 days	FRANCE	-	-	-	-	-	**1.62****	**1.94*** **	**2.95*** **	**4.12*** **	**6.83*** **
	UK	-	-	-	-	-	-	-	***2.82*** **	***4.15*** **	***11.75*** **
Volatile substance use ever	FRANCE	-	-	**0.67***	-	-	-	-	**2.04*** **	**1.86***	**3.34*** **
	UK	-	-	-	***0.85***	***2.11****	-	-	***1.99*** **	***2.49****	***4.08*** **
Any drug except cannabis ever	FRANCE	-	-	-	-	-	**1.13**	**2.17****	**3.28*** **	**4.46*** **	**8.36*** **
	UK	-	-	-	-	-	-	-	***2.52*** **	***2.64*** **	***6.89*** **

* P<.05 ** P<.01 ***P<.001

For family structure the reference group is 'intact family'
For gender the reference group is 'boys'
For maternal and paternal relationships the reference group is 'satisfied'
For parental awareness the reference group is 'always'

The main findings were:

- In the presence of the other variables parental monitoring still had highly significant effects in both countries for all substances. This was not always so for the other four variables.

- Significant gender effects were much less common in the UK than in France. In particular the French boys were much heavier consumers of alcohol than the French girls while there was no significant difference between boys and girls in the UK.

- Family structure was frequently still significant in the UK where students from non-intact families were more likely to be alcohol and cannabis users. Family structure had less impact among French teenagers.

- There were few significant effects for maternal relationships in either country.

- Paternal relationships were highly significant among French students for illicit drug use, tobacco and drunkenness but there were no such effects among UK teenagers.

In summary, in the UK alcohol and cannabis use were related to family structure and to parental awareness or monitoring. Alcohol use among French teenagers was associated with gender and parental awareness/monitoring and cannabis was related to paternal (but not maternal) relationships and parental awareness.

DISCUSSION

The findings have shown that the UK and France had different patterns of substance use: more French students smoked tobacco, very many more UK students drank alcohol and about equal proportions in both countries had used cannabis even if the two countries differed on the frequency of cannabis use during the last 12 months or the last 30 days. Finally, the UK teenagers had a slightly greater tendency to have used illicit drugs other than cannabis.

Regarding alcohol use, the UK teenagers of both sexes were far more likely than their French counterparts to have consumed alcohol six or more times in the last 30 days, to have had alcohol more than 20 times in the past year, to have had five or more drinks in a row more than twice in the past 30 days and to have been intoxicated three or more times in the past year.

Clearly there are important differences in the drinking cultures of the two countries. A distinction has often been drawn between the northern regions of Europe ('*dry*' areas) and the southern regions ('*wet*' areas) (Plant and Cameron 2000, Plant and Miller 2001b). In summary, compared to dry areas, wet areas are perceived to have a greater overall alcohol consumption, with more integration of alcohol into daily life, fewer government restrictions and fewer perceived alcohol-related problems (Allamani et al., 1999, p59). 'In the wine cultures around the Mediterranean, men often drink together without drunkenness, whereas in the beer- or spirits- drinking cultures to the north, they drink to get drunk. Associated with this difference…..in the south men are responsible for social order ….by contrast in the north it is women who are expected to assure moderation and propriety' (Heath, 1995, p337). While

these distinctions may have lessened in recent years, the UK drinking culture is clearly inclined towards northern Europe and that of France towards southern Europe. However, wine consumption has decreased in France among adolescents during the last decades, and beer and spirit consumption has increased; even though alcohol use remains lower in France than in UK. Moreover, gender differences were still pronounced in France with drinking behaviours much more frequent among males than among females when there were slight differences between boys and girls in UK. However, given that, to some extent, differences in cultural context may still prevail, the findings of the present study might not be unexpected. In particular, these cultural considerations might help cause the differences in alcohol consumption but would probably have little effect on other illicit drug use where the differences were small or non-existent.

Turning to cannabis use, the results failed to show differences between the two countries. In fact, the prevalence rates of cannabis use have dramatically increased in France for several years while in the UK there has been a slight decrease (Plant and Miller 2000). In 1993, about 16% of the French students aged 16 had experimented with cannabis use (Choquet and Ledoux, 1994). In the UK in 1995 the figure was 40.6%. In a few years, the French level has risen to that of the top European countries such as the UK, and in 1999, 35% of the students in both countries used cannabis at least once (Hibell et al., 2001).

In the two countries three of the distributions of the family variables described above were similar. Most of the boys and girls sampled in both countries lived in intact families and there were very few in families with neither natural parent present. Similar proportions of students in both countries were satisfied with their relationships to their parents, with the girls tending to be less satisfied than the boys. However, French parents were significantly more likely than UK ones to know where their children were on Saturday nights**.** In turn this could perhaps be due to the rather different levels of urbanisation between the two countries. Although the total population levels are similar (approximately 58 million in both countries in 1995), the population density in 1995 in France was 105 persons per square kilometre as against 239 persons per square kilometre in the UK. France had fewer cities of more than 200,000 inhabitants and was 27.2% rural compared to 10.5% for the UK (UNESCO, 1995). Perhaps, in a more rural environment it might be easier for parents to know their children's whereabouts.

Overall, the analyses confirmed that adolescents who lived in non-intact families were more likely to use alcohol, tobacco or illicit drugs, although this effect was quite weak (Amato and Keith, 1991; Neher and Short, 1998). The associations seemed strongest amongst girls in the UK. These findings also highlight the effects of the family relationships (Anderson and Henry, 1994) but obviously, as ESPAD was a cross-sectional survey, it was not possible to determine the direction of causation. Bad relationships with the parents could cause or contribute to the adolescent drug use, but the reverse is also true; adolescent drug use could reinforce conflicts and worsen the family climate. On the other hand, the family structure could affect attachment to parents and relationships with parents (particularly with the father) could change after parental separation.

Finally, after logistic regressions, only parental awareness, i.e. parental knowledge of children's whereabouts on Saturday nights, remained strongly associated with alcohol, tobacco, and illicit drug use for both genders. In other words, once it is taken into account, the other family variables showed greatly reduced significance. These findings are consistent with those of previous studies in that perceived authoritative parenting by students was associated with lower substance use (Richardson et al., 1993; Steinberg et al., 1994; Cohen and Rice, 1997; Reifman et al., 1998). This implies that children from non-intact families do not have a higher risk of experimenting with psychoactive substances, if the separated parents continue to exercise loving care and control over them. Cohen et al. (1994), suggest that "a lack of warm and positive relations with parents, poor parental discipline and monitoring are correlated with an adolescent's association with peers who use substance", which in turn leads adolescents to experiment with licit or illicit drugs. In summary, parental divorce has little impact on adolescent drug use when relationships with parents can be maintained. However, in a longitudinal study, Hope et al. (1998) have shown that the effect of parental divorce appears to strengthen in adulthood.

However, there are some slight differences between the two countries. In France, students who have poor relationships with their parents are more likely to be engaged in substance use –paternal relationship is particularly related to illicit drug use– while in the UK, family structure seems to be more important. Perhaps the impact of parental separation or divorce may be attenuated in France by the maintenance of good relationships with parents. In the UK, where the majority of separations occur in families of lower socio-economic status, the social consequences may be more pronounced, and relationships with the absent parent (father in particular) may be almost non-existent. However, this is a hypothesis that would need to be tested in a further study.

GENERAL CONCLUSIONS

ESPAD has generated a massive and unique fund of information about the self-reported drinking, smoking and illicit drug using habits of teenagers in widely varied national and social settings. ESPAD 1995 and 1999 permit for the first time a detailed means of surveillance and monitoring of such behaviours in Europe by the use of a common methodology. Both ESPAD 1995 and ESPAD 1999 make it clear that the UK has what is by international standards, a very serious problem of youthful heavy drinking and illicit drug use. The findings produced so far have attracted considerable interest. It remains to be seen whether or not ESPAD will serve to influence public policy, either within the UK or elsewhere.

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