

## PERCEIVED PARENTING STYLES AND TOBACCO, ALCOHOL AND CANNABIS USE AMONG FRENCH ADOLESCENTS: GENDER AND FAMILY STRUCTURE DIFFERENTIALS

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**Abstract — Aims:** To assess associations between parental control or parental emotional support and current tobacco, alcohol or cannabis use among 12–18-year-old students, according to gender and family structure (intact family, reconstituted family, single-parent family). **Methods:** A cross-sectional survey was conducted in a national representative sample in France (2003) of 6–12th grade students ( $N = 16\,532$ ), as a part of the ESPAD study (European Study Project on Alcohol and Other Drugs). The self-administered questionnaire included questions on last 30 days' consumption of alcohol, tobacco and cannabis as well as on socio-demographic characteristics, school characteristics, and some simple questions on parental control and parental emotional support. Logistic modelling was carried out and (adjusted Odds Ratio) ORa calculated, adjusted for age, parental educational and characteristics of the school. **Results:** A negative relationship exists between parental control and substance use, but this relationship is more marked for tobacco (ORa between 1.8 and 5.6 according to level of control, family status and gender) and cannabis (OR between 1.5 and 6.4) than for alcohol (ORa between 1.0 and 2.7). Parental control is more markedly related to substance use in girls than in boys. These tendencies were observed for intact families as well as for single-parent families or reconstituted families. Parental control has a greater impact than emotional support. Among girls, emotional support has a greater impact than among boys. **Conclusions:** There is a gradient relationship between parental control and current consumption, especially among girls. Thus, there may be a need for parental control, whatever the family structure.

### INTRODUCTION

Alcohol, tobacco and cannabis are the most common drugs among adolescents, and their use is increasing dramatically between age 11 and 15 in all Western countries (Currie *et al.*, 2004). Youth is thus an important life period for intervention measures.

Among potential risk factors, parental factors seem important, especially parental substance abuse (Donato *et al.*, 1994), parental mental disorders (von Sydow *et al.*, 2002), parental physical or sexual maltreatment (Lau *et al.*, 2005), and dysfunctional parenting (Andersson and Eisemann, 2003; Parker and Benson, 2004; Galea *et al.*, 2004; Best *et al.*, 2005; Barrett and Turner, 2006), and behavioural control and emotional support (Foxcroft and Lowe, 1995; Barnes *et al.*, 2000; Van Zundert *et al.*, 2006).

During the last decade, the family structure has been profoundly modified. In France, between 1990 and 1999, the divorce rate increased from 32 to 38%, the percentage of children living in single-parent families rose from 11 to 15%, and those living in reconstituted families from 7 to 9% (Barre, 2003). The divorce rate is also high in most European countries (e.g. 42% in Germany, 45% in Denmark, 45% in the United Kingdom, etc.; Eurostat, 2007). This change in family structure could influence parenting styles and substance use (Ledoux *et al.*, 2002; Miller and Plant, 2003), and the issues of whether parental style differs according

to family structure and whether dysfunctional parenting is a risk factor for drug consumption within all types of families (intact, reconstituted or single-parent) are of potential interest.

Most research on parental practices have focused on alcohol, often available at home, or on tobacco, often consumed by parents (Andersson and Eisemann, 2003; Wood *et al.*, 2004; Ramirez *et al.*, 2004; Engels *et al.*, 2005). On the other side, little research has been conducted on illicit drugs, especially the most common: cannabis (Hibell *et al.*, 2004). It would therefore be of interest to examine the role of parental practices in the use of tobacco, alcohol and cannabis respectively. Because most substances are not equally acceptable to boys and girls (Guilbert and Gautier, 2006), the impact of parenting may also differ between boys and girls.

Parental control and parental emotional support are only liable to provide the expected effects if they are actually perceived by the adolescents. Consequently, individual reports gathered using a self-administered questionnaire is appropriate for exploration of the perception of an adolescent's family 'style'. In addition, it has been noted that most studies on substance use have been based on self-reported data, considered as valid data (Wills *et al.*, 2001).

This paper examines the associations linking perceived parental control and perceived parental emotional support with current alcohol, tobacco and cannabis use, according to family structure, among boys and girls aged 13–18 years, in a traditionally alcohol-producing country: France. The data are derived from the French part of the European School Project on Alcohol and other Drugs (ESPAD, 2003) (Hibell *et al.*, 2004).

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## MATERIALS AND METHODS

### Subjects

The present school-based population survey was carried out in France in 2003 (March–April). The sample was designed to be representative of secondary school pupils (6–12th grade students of private and public schools) across the nation. The schools were randomly selected according to type of schools (junior high school, high school or vocational school) and size (<400 pupils, 400–600 pupils, 600–900 pupils, >900 pupils). In total, 450 schools were randomly selected: 400 of the 450 schools approached accepted the survey (89.0%). In each school, 2 classes were randomly selected: 773 out of 800 classes (96.6%) agreed to participate. The questionnaire was proposed to all pupils of selected classes. Among the 18 500 students selected, 9% were absent the day of the survey, 1% of parents refused the participation of their children, 1% of the students refused to participate, 89% participated. In total, 16 532 questionnaires were filled out.

### Methods

Participants completed at school an anonymous self-administered multi-choice questionnaire in the course of a class period (45 min), under the supervision of a school doctor or a school nurse.

The questionnaire, targeted at alcohol, tobacco and cannabis use, included simple questions on the demographic situation of the adolescent (age; gender), the school attended (type of school: junior high school, high school or vocational school; status of school: public or private), parental education (educational level of father and mother: university, high school, middle school, primary school, or other) and family structure (intact, reconstituted or single-parent family, or other). Parental control was addressed in the single question ‘My parents know where I am on Saturday evenings (always, often, sometimes, seldom, or never)’ (response rate: 95.2%). Parental emotional support was addressed in the single question ‘I can easily get emotional support from my mother and/or my father (always, often, sometimes, seldom, or never)’ (response rate: 97.2%). With regard to substance use, the following questions are included in the present analysis (a): ‘During the last 30 days, on how many occasions have you had any alcoholic beverage (0, 1–2, 3–5, 6–9, 10–19, 20–39, 40 or more)’ (response rate: 94.9%); (b) ‘During the last 30 days, how frequently did you smoke (never, occasionally, every day)’ (responses rate: 99.3%); (c) ‘During the last 30 days, on how many occasions (if any) have you used marijuana or hashish (0, 1–2, 3–5, 6–9, 10–19, 20–39, 40 or more)’ (response rate: 96.7%). The investigation was approved by an ethics committee (*Commission Nationale Informatique et Liberté*) and written informed consent was obtained from respondents.

### Statistical analysis

The characteristics of the subjects were studied according to gender, family structure, parental control and parental emotional support, using the  $\chi^2$  independence test. The three outcome variables were the current use (at least once during

the last 30 days) of alcohol, tobacco or cannabis. The relationships of consumption with parental control and parental emotional support were assessed by odds ratios (OR) computed via the logistic models, adjusted for age, parental educational level, type of school, and school status (adjusted Odds Ratio (ORa), and 95% confidence interval). This analysis was carried out for each family structure (intact, reconstituted, single-parent). All statistical analyses were performed using Stata program (Texas: Stata Corporation, 1997).

## RESULTS

Characteristics of the respondents are shown in Table 1. Males represented 48.9% of the sample and females 51.1%. The mean age was 15.4 (SD 2.3) years. There is no difference between boys and girls in relation to family structure, type of school and school status (public/private). Gender differences were marked for perceived parental control (more systematic among girls than among boys), current alcohol consumption or cannabis consumption (more prevalent among boys than among girls), while differences were less marked for parental emotional support (less systematic among girls than among boys) and current tobacco consumption (more prevalent among girls than among boys). It should be noted that 11% of the boys and 6% of the girls reported seldom/never parental control, while 12% of boys and 16% of girls reported seldom/never parental emotional support.

Table 2 shows that in reconstituted families, adolescents reported less parental control and less parental emotional support than in intact families. In single-parent families, adolescents reported similar parental control to those in intact families and similar parental emotional support to those in reconstituted families. Current use was higher in reconstituted or single-parent families than in intact families for tobacco (in boys and girls), cannabis (in boys and girls) and for alcohol (in girls only). For boys, alcohol consumption was not related to family structure.

Table 3 reveals that parental control and parental emotional support decrease in relation to age of adolescent and are less systematic among parents with lower educational level than among parents with higher educational level. This tendency is observed among both boys and girls. There is an inverse U-curve relationship between parental control and substance use. Compared to adolescents reporting parental control as ‘always’ occurring, substance use increases for those reporting parental control occurring ‘sometimes or often’ and ‘seldom’, while it decreases for those reporting parental control ‘never’ occurring. This tendency is observed among both boys and girls. There is also an inverse U-curve relationship between parental emotional support and alcohol consumption among boys, while there is a linear relationship between parental emotional support and cannabis use among boys and all substance use among girls.

For alcohol consumption (Table 4), adjusted Odds Ratio (ORa) are higher for lack of parental control than for lack of parental emotional support, whatever the family structure, for boys and for girls. For example, in intact families, ORa for parental control ‘seldom’ (vs ‘always’) are 2.72 among boys and 2.61 among girls while the ORa for parental emotional

Table 1. Characteristics of subjects, according to gender (%)

|  | Boys<br>( <i>N</i> = 7229) | Girls<br>( <i>N</i> = 7771) | $\chi^2$ independence<br>test ( <i>P</i> -value) |
|--|----------------------------|-----------------------------|--|
| Age  |                            |                             | 0.91   |
| 12 or less                                     | 11.0                       | 11.1                        |  |
| 13–14  | 25.9                       | 25.8                        |  |
| 15–16  | 27.4                       | 28.0                        |  |
| 17–18  | 26.5                       | 25.9                        |  |
| 19 or more                                     | 9.2                        | 9.2                         |  |
| Family structure                               |                            |                             | 0.26   |
| Intact family                                  | 73.0                       | 72.8                        |  |
| Reconstituted family                           | 11.4                       | 11.0                        |  |
| Single parent                                  | 12.8                       | 13.7                        |  |
| Others   | 2.8                        | 2.5                         |  |
| Educational level of parent                    |                            |                             | <0.001   |
| University                                     | 34.1                       | 28.6                        |  |
| High school                                    | 35.5                       | 36.2                        |  |
| Middle school                                  | 11.8                       | 14.2                        |  |
| Primary school                                 | 3.8                        | 4.7                         |  |
| Others   | 14.9                       | 16.3                        |  |
| Parental control                               |                            |                             | <0.001   |
| Always   | 59.3                       | 74.1                        |  |
| Sometimes or often                             | 29.3                       | 19.5                        |  |
| Seldom   | 5.5                        | 3.1                         |  |
| Never  | 5.9                        | 3.3                         |  |
| Parental emotional support                     |                            |                             | <0.001   |
| Always   | 49.0                       | 46.2                        |  |
| Sometimes or often                             | 38.9                       | 38.2                        |  |
| Seldom   | 7.1                        | 9.7                         |  |
| Never  | 5.0                        | 5.9                         |  |
| School status <sup>a</sup>                     |                            |                             | 0.19   |
| Public   | 82.3                       | 81.5                        |  |
| Private  | 17.7                       | 18.5                        |  |
| Type of school                                 |                            |                             | 0.18   |
| Junior high school                             | 56.9                       | 55.4                        |  |
| High school                                    | 33.6                       | 34.9                        |  |
| Vocational school                              | 9.6                        | 9.6                         |  |
| Last 30 days' substance<br>use (at least once) |                            |                             |  |
| Alcohol use                                    | 53.6                       | 44.6                        | <0.001   |
| Tobacco use                                    | 26.8                       | 28.8                        | <0.01  |
| Cannabis use                                   | 20.2                       | 12.5                        | <0.001   |

<sup>a</sup> In France, a fairly large sector of education is provided by private (concessional) schools under contract with the ministry of education. Enrolment does not, however, entail high fees, and a wide social representation is usual. Thus this type of school was included to improve representativeness.

support 'seldom' (vs 'always') are 1.43 among boys and 1.59 among girls. In girls, lack of parental control had higher ORa in reconstituted families than in single parent families in contrast with boys. Parental control 'never' occurring is associated with the highest risk of alcohol consumption in reconstituted families only.

For tobacco consumption (Table 5), ORa are notably higher in relation to lack of parental control than in relation to lack of parental emotional support, whatever the family structure, for boys and for girls. For example, in intact families, ORa for parental control 'seldom' (vs 'always') are 5.33 among boys and 5.63 among girls, while the ORa for parental emotional support 'seldom' (vs 'always') are 1.69 among boys and 1.73

among girls. Parental emotional support reported as 'never' is associated with the highest risk of tobacco consumption among girls only.

For cannabis use (Table 6) ORa are notably higher in relation to lack of parental control than in relation to lack of parental emotional support, whatever the family structure, for boys and for girls. For example, in intact families, ORa for parental control reported as 'seldom' (vs 'always') are 5.35 among boys and 6.36 among girls, while the ORa for parental emotional support 'seldom' (vs 'always') are 1.61 among boys and 1.65 among girls. Parental control 'never' (vs 'always') is associated with higher risk in reconstituted families than in the other types of families, especially for girls. In intact families and single-parent families parental control 'never' had a lower ORa than parental control 'seldom', in boys and girls.

Unexpectedly, parental control 'never' occurring is overall associated with a lower risk than parental control 'seldom'. Therefore the 'never' and 'seldom' groups were compared for behavioural factors (frequent school absence, offence, running away and suicide attempts) and peer integration ('seldom' or 'never' having support from friends). It was expected that the 'never' group would present more behavioural problems (other than substance use) than the 'seldom' group, but this was observed in boys only. Thus the boys reporting parental control 'never' occurring had a higher risk for suicide attempt (ORa 3.23, 95% CI 1.42–7.34) in reconstituted and single-parent families, and in all types of families for school absenteeism (ORa 2.0, 1.47–3.60) and lack of emotional support from friends (ORa 1.76, 1.29–2.41).

## DISCUSSION

The most striking result of the present study is the negative relationship between perceived parental control and alcohol, tobacco and cannabis use in French adolescents, controlling for age, family structure, parents' educational level, and type and status of school. Thus the greater is the perceived parental control, the lower is the adolescent's substance use (Biglan *et al.*, 1995; Baker *et al.*, 1999; Wills *et al.*, 2004; Galea *et al.*, 2004; Best *et al.*, 2005; Barrett and Turner, 2006). This relationship between parental control and substance use exists in intact families as well as in single-parent families or reconstructed families. For parental control we used here the parental monitoring question ('whether the parents know where the adolescent goes on Saturday evenings', Kokkevi *et al.*, 2007).

But there are clear differences between the three substances studied. Parental control is more closely related to tobacco (ORa between 1.8 and 5.6, according to level of parental control, family status and gender) and cannabis (ORa between 1.5 and 6.4, according to level of control, family status and gender) than to alcohol (ORa between 1.0 and 2.7). These differences were observed in boys as well as in girls, though alcohol and cannabis consumption rates are higher in boys than in girls. These findings suggest that the legal status and the consumption rates of the substances are less important than their cultural status. Indeed, alcohol is strongly related to social habits in France for everybody, while tobacco and

Table 2. Characteristics of the subjects according to family structure, and according to gender (%)

|                             | Boys            |                        |               |                 | Girls           |                        |               |                 |
|-----------------------------|-----------------|------------------------|---------------|-----------------|-----------------|------------------------|---------------|-----------------|
|                             | Intact families | Reconstructed families | Single parent | <i>P</i> -value | Intact families | Reconstructed families | Single parent | <i>P</i> -value |
| Number of subjects          | 5276            | 822                    | 928           |                 | 5658            | 858                    | 1063          |                 |
| Age                         |                 |                        |               | 0.001           |                 |                        |               | <0.001          |
| 12 or less                  | 11.9            | 10.0                   | 7.8           |                 | 11.9            | 9.2                    | 9.2           |                 |
| 13–14                       | 26.0            | 27.5                   | 24.1          |                 | 27.0            | 25.2                   | 20.7          |                 |
| 15–16                       | 27.1            | 28.0                   | 28.1          |                 | 27.4            | 28.9                   | 31.0          |                 |
| 17–18                       | 26.3            | 24.4                   | 29.0          |                 | 25.4            | 26.0                   | 28.9          |                 |
| 19 or more                  | 8.6             | 10.1                   | 11.0          |                 | 8.3             | 10.7                   | 10.2          |                 |
| Educational level of parent |                 |                        |               | 0.004           |                 |                        |               | 0.57            |
| University                  | 35.1            | 30.2                   | 32.3          |                 | 28.7            | 28.0                   | 29.6          |                 |
| High school                 | 35.1            | 39.7                   | 36.4          |                 | 36.2            | 37.3                   | 35.6          |                 |
| Middle school               | 11.6            | 13.5                   | 11.6          |                 | 14.0            | 14.8                   | 15.1          |                 |
| Primary school              | 3.9             | 2.9                    | 2.6           |                 | 4.9             | 3.3                    | 4.3           |                 |
| Others                      | 14.3            | 13.7                   | 17.0          |                 | 16.2            | 16.7                   | 15.4          |                 |
| Parental control            |                 |                        |               | <0.001          |                 |                        |               | <0.001          |
| Always                      | 61.1            | 55.0                   | 54.7          |                 | 76.2            | 68.1                   | 70.2          |                 |
| Sometimes or often          | 28.4            | 29.4                   | 34.4          |                 | 18.3            | 23.1                   | 22.8          |                 |
| Seldom                      | 5.1             | 7.5                    | 4.7           |                 | 2.6             | 4.5                    | 3.8           |                 |
| Never                       | 5.3             | 8.0                    | 6.1           |                 | 2.9             | 4.3                    | 3.3           |                 |
| Parental emotional support  |                 |                        |               | <0.001          |                 |                        |               | 0.004           |
| Always                      | 50.2            | 45.9                   | 46.2          |                 | 46.5            | 42.9                   | 48.6          |                 |
| Sometimes or often          | 39.1            | 38.2                   | 39.0          |                 | 39.0            | 37.3                   | 35.9          |                 |
| Seldom                      | 6.3             | 10.0                   | 9.0           |                 | 9.0             | 12.1                   | 10.1          |                 |
| Never                       | 4.5             | 6.0                    | 5.7           |                 | 5.4             | 7.5                    | 5.4           |                 |
| School status               |                 |                        |               | 0.003           |                 |                        |               | 0.09            |
| Public                      | 81.6            | 83.7                   | 86.0          |                 | 81.1            | 84.3                   | 81.7          |                 |
| Private                     | 18.4            | 16.3                   | 14.0          |                 | 18.9            | 15.7                   | 18.3          |                 |
| Type of school              |                 |                        |               | <0.001          |                 |                        |               | 0.001           |
| Junior high school          | 57.0            | 59.9                   | 53.8          |                 | 56.3            | 56.1                   | 52.5          |                 |
| High school                 | 34.4            | 27.0                   | 35.2          |                 | 35.1            | 32.0                   | 36.1          |                 |
| Vocational school           | 8.6             | 13.1                   | 11.0          |                 | 8.6             | 11.9                   | 11.4          |                 |
| Substance use               |                 |                        |               |                 |                 |                        |               |                 |
| Current alcohol use         | 53.5            | 55.7                   | 53.4          | 0.49            | 43.5            | 50.0                   | 46.2          | 0.001           |
| Current tobacco use         | 24.8            | 36.1                   | 29.6          | <0.001          | 25.6            | 37.2                   | 37.2          | <0.001          |
| Current cannabis use        | 18.7            | 24.6                   | 23.7          | <0.001          | 10.4            | 19.0                   | 17.0          | <0.001          |

cannabis are less so, especially since the recent mass media campaigns.

Our study reveals that parental control is more strongly related to substance use in girls than in boys, unlike results in some published data (Foxcroft and Lowe, 1995; Brook *et al.*, 1998; Mc Ardle *et al.*, 2002). This gender difference is observed not only for alcohol and cannabis, which are substances with higher consumption rates in boys than in girls, but also for tobacco, a substance with comparable consumption rates in both boys and girls. These results suggest that national consumption practices, as well as gender education (Baker *et al.*, 1999), have a potential impact not only on prevalence rates for consumption, but also on the relationship between consumption and parenting style.

In reconstituted families, adolescents reporting parental control as ‘never’ occurring were at higher risk for alcohol, tobacco and cannabis use compared to their counterparts in intact and single-parent families. In reconstituted families,

reporting parental control as ‘never’ occurring is more frequent than in the other types of family (6.1% vs 4.0% in intact families and 4.6% in single-parent families,  $P < 0.001$ ). In addition, the percentage of adolescents living in reconstituted families increased from 7% in 1990 to 9% in 1999 (Barre, 2003), then to 14% in 2003 (in our sample). Thus family reconstitution is nowadays a social issue.

The inverse U-curve relationship between parental control and substance use is a quite puzzling result. Actually, boys who never received parental control had overall a lower consumption rate (whatever the substance) than boys who received seldom parental control but a higher consumption rate than those who received regular control. But in our survey these adolescents are at risk of suicide attempt (ORa 3.2), regular school absenteeism (ORa 2.0) and lack of emotional support from friends (OR = 1.8). So we hypothesize that young people without parental control are at high risk for social and scholar inability, in addition to their risk of substance use. This issue needs further research.

Table 3. Characteristics of the subjects according to perceived parenting styles, and according to gender (en %)

|                             | Parental control |                       |        |       |         | Parental control support |                       |        |       |         |
|-----------------------------|------------------|-----------------------|--------|-------|---------|--------------------------|-----------------------|--------|-------|---------|
|                             | Always           | Sometimes<br>or often | Seldom | Never | P-value | Always                   | Sometimes<br>or often | Seldom | Never | P-value |
| Boys (7229 subjects)        |                  |                       |        |       |         |                          |                       |        |       |         |
| Number of subjects          | 4287             | 2119                  | 394    | 429   |         | 3543                     | 2813                  | 510    | 363   |         |
| Age                         |                  |                       |        |       | <0.001  |                          |                       |        |       | <0.001  |
| 12 or less                  | 15.2             | 3.8                   | 5.1    | 9.1   |         | 15.1                     | 7.8                   | 4.5    | 5.0   |         |
| 13–14                       | 31.3             | 16.6                  | 16.0   | 27.0  |         | 30.2                     | 22.4                  | 18.8   | 21.2  |         |
| 15–16                       | 27.0             | 28.6                  | 26.9   | 25.2  |         | 26.1                     | 28.7                  | 28.4   | 28.1  |         |
| 17–18                       | 21.3             | 35.6                  | 34.8   | 26.1  |         | 21.7                     | 30.5                  | 33.5   | 32.8  |         |
| 19 or more                  | 5.1              | 15.4                  | 17.3   | 12.6  |         | 6.9                      | 10.7                  | 14.7   | 12.9  |         |
| Educational level of parent |                  |                       |        |       | <0.001  |                          |                       |        |       | <0.001  |
| University                  | 33.1             | 38.6                  | 32.2   | 23.5  |         | 33.2                     | 36.3                  | 32.5   | 27.3  |         |
| High schools                | 35.9             | 36.4                  | 34.5   | 27.5  |         | 35.9                     | 35.8                  | 35.7   | 28.6  |         |
| Middle schools              | 10.9             | 12.0                  | 16.0   | 15.4  |         | 10.8                     | 11.5                  | 14.7   | 19.3  |         |
| Primary schools             | 3.0              | 3.7                   | 6.8    | 9.8   |         | 3.0                      | 3.7                   | 4.9    | 11.6  |         |
| Others                      | 17.1             | 9.3                   | 10.4   | 23.8  |         | 17.1                     | 12.7                  | 12.2   | 13.2  |         |
| School status               |                  |                       |        |       | <0.001  |                          |                       |        |       | 0.89    |
| Public                      | 83.7             | 79.1                  | 82.7   | 84.8  |         | 82.5                     | 82.0                  | 82.0   | 83.5  |         |
| Private                     | 16.3             | 20.9                  | 17.3   | 15.2  |         | 17.5                     | 18.0                  | 18.0   | 16.5  |         |
| Type of school              |                  |                       |        |       | <0.001  |                          |                       |        |       | <0.001  |
| Junior high school          | 65.9             | 39.9                  | 45.9   | 60.4  |         | 64.4                     | 50.4                  | 45.9   | 48.8  |         |
| High school                 | 27.3             | 47.7                  | 36.3   | 23.8  |         | 27.0                     | 39.7                  | 42.3   | 37.2  |         |
| Vocational school           | 6.8              | 12.4                  | 17.8   | 15.8  |         | 8.5                      | 9.9                   | 11.8   | 14.0  |         |
| Current alcohol use         | 45.4             | 67.2                  | 72.1   | 50.1  | <0.001  | 47.8                     | 58.7                  | 63.1   | 55.9  | <0.001  |
| Current tobacco use         | 17.1             | 38.1                  | 55.1   | 42.2  | <0.001  | 21.0                     | 30.2                  | 40.2   | 38.8  | <0.001  |
| Current cannabis use        | 11.4             | 30.2                  | 45.9   | 34.0  | <0.001  | 15.3                     | 22.6                  | 31.6   | 33.3  | <0.001  |
| Girls (7771 subjects)       |                  |                       |        |       |         |                          |                       |        |       |         |
| Number of subjects          | 5756             | 1517                  | 238    | 260   |         | 3594                     | 2963                  | 753    | 461   |         |
| Age                         |                  |                       |        |       | 0.001   |                          |                       |        |       | <0.001  |
| 12 or less                  | 13.0             | 4.6                   | 5.9    | 10.4  |         | 15.4                     | 8.3                   | 5.0    | 5.0   |         |
| 13–14                       | 28.2             | 17.9                  | 15.5   | 27.7  |         | 29.5                     | 23.6                  | 21.4   | 18.0  |         |
| 15–16                       | 27.4             | 30.1                  | 24.8   | 31.5  |         | 24.8                     | 29.9                  | 32.8   | 31.9  |         |
| 17–18                       | 24.2             | 32.4                  | 36.5   | 17.3  |         | 22.5                     | 28.3                  | 27.5   | 34.9  |         |
| 19 or more                  | 7.2              | 15.0                  | 17.2   | 13.1  |         | 7.8                      | 9.9                   | 13.3   | 10.2  |         |
| Educational level of parent |                  |                       |        |       | <0.001  |                          |                       |        |       | <0.001  |
| University                  | 27.9             | 33.7                  | 22.7   | 20.0  |         | 28.7                     | 30.4                  | 24.4   | 23.4  |         |
| High schools                | 36.0             | 38.3                  | 39.9   | 23.8  |         | 36.4                     | 36.8                  | 37.5   | 28.0  |         |
| Middle schools              | 14.1             | 13.9                  | 16.8   | 16.2  |         | 12.5                     | 14.3                  | 18.3   | 20.2  |         |
| Primary schools             | 4.5              | 4.2                   | 6.7    | 11.5  |         | 4.2                      | 4.2                   | 5.4    | 10.8  |         |
| Others                      | 17.6             | 9.9                   | 13.9   | 28.5  |         | 18.1                     | 14.4                  | 14.3   | 17.6  |         |
| School status               |                  |                       |        |       | 0.004   |                          |                       |        |       | 0.64    |
| Public                      | 17.8             | 21.4                  | 19.7   | 14.6  |         | 18.1                     | 19.0                  | 19.3   | 17.1  |         |
| Private                     | 82.2             | 78.6                  | 80.3   | 85.4  |         | 81.9                     | 81.0                  | 80.7   | 82.9  |         |
| Type of school              |                  |                       |        |       | <0.001  |                          |                       |        |       | <0.001  |
| Junior high school          | 59.4             | 41.1                  | 39.9   | 64.2  |         | 62.0                     | 50.1                  | 50.6   | 46.8  |         |
| High school                 | 32.2             | 46.7                  | 39.1   | 23.9  |         | 29.3                     | 40.8                  | 36.2   | 39.5  |         |
| Vocational school           | 8.4              | 12.2                  | 21.0   | 11.9  |         | 8.8                      | 9.1                   | 13.2   | 13.7  |         |
| Current alcohol use         | 38.6             | 64.1                  | 64.7   | 43.1  | <0.001  | 36.2                     | 50.7                  | 53.9   | 55.1  | <0.001  |
| Current tobacco use         | 21.7             | 48.1                  | 62.6   | 42.7  | <0.001  | 22.1                     | 30.7                  | 41.0   | 49.0  | <0.001  |
| Current cannabis use        | 7.5              | 25.4                  | 39.5   | 23.1  | <0.001  | 8.2                      | 13.8                  | 19.8   | 25.8  | <0.001  |

In univariate analysis, parental control as well as parental emotional support are related to substance use, but in the multivariate model, parental control has a greater impact than parental emotional support, whatever the substance. This finding has also been observed by certain authors (Baker *et al.*, 1999; King and Chassin, 2004).

The role of parental emotional support has been reported in most studies in various countries (Parker and Benson, 2004; Ramirez *et al.*, 2004). In our study, parental emotional support showed a marked contribution in girls but only a small contribution in boys. In particular, parental emotional support ‘never’ occurring was associated with a high risk for the use of

Table 4. Risk of current alcohol consumption according to family structure, parental control and parental emotional support, and according to gender (ORa, or adjusted Odds Ratio<sup>a</sup> and 95% confidence intervals)

|                            | Intact families | Reconstituted families | Single parent |
|----------------------------|-----------------|------------------------|---------------|
| Boys (number of subjects)  |                 |                        |               |
| Parental control           | 5276            | 822                    | 928           |
| Always                     | 1.00            | 1.00                   | 1.00          |
| Sometimes or often         | 1.70***         | 1.59**                 | 2.21***       |
| Seldom                     | 2.72***         | 1.88*                  | 2.87**        |
| Never                      | 1.07            | 1.89*                  | 1.80          |
| Parental emotional support |                 |                        |               |
| Always                     | 1.00            | 1.00                   | 1.00          |
| Sometimes or often         | 1.16*           | 1.22                   | 1.45*         |
| Seldom                     | 1.43**          | 0.85                   | 1.53          |
| Never                      | 1.05            | 1.59                   | 1.05          |
| Girls (number of subjects) |                 |                        |               |
| Parental control           | 5658            | 858                    | 1063          |
| Always                     | 1.00            | 1.00                   | 1.00          |
| Sometimes or often         | 2.19***         | 2.41***                | 2.41***       |
| Seldom                     | 2.61***         | 2.06*                  | 1.71          |
| Never                      | 0.96            | 2.96**                 | 1.59          |
| Parental emotional support |                 |                        |               |
| Always                     | 1.00            | 1.00                   | 1.00          |
| Sometimes or often         | 1.49***         | 1.51*                  | 1.35*         |
| Seldom                     | 1.59***         | 1.42                   | 1.84**        |
| Never                      | 1.76***         | 1.18                   | 2.16*         |

\*  $P < 0.05$ , \*\*  $P < 0.01$ , \*\*\*  $P < 0.001$ .

<sup>a</sup> For each family structure the logistic model included the same factors: parental control, parental emotional support, age, educational level of parents, type of school (junior high school/high school/vocational school) and sector (public/private).

Table 5. Risk of current tobacco consumption according to family structure, parental control and parental emotional support, and according to gender (ORa, or adjusted Odds Ratio<sup>a</sup> and 95% confidence intervals)

|                            | Intact families | Reconstituted families | Single parent |
|----------------------------|-----------------|------------------------|---------------|
| Boys (number of subjects)  |                 |                        |               |
| Parental control           | 5276            | 822                    | 928           |
| Always                     | 1.00            | 1.00                   | 1.00          |
| Sometimes or often         | 2.07***         | 1.78**                 | 1.92***       |
| Seldom                     | 5.33***         | 3.44***                | 2.42**        |
| Never                      | 2.85***         | 4.91***                | 3.11***       |
| Parental emotional support |                 |                        |               |
| Always                     | 1.00            | 1.00                   | 1.00          |
| Sometimes or often         | 1.27**          | 1.06                   | 1.10          |
| Seldom                     | 1.69***         | 0.86                   | 1.41          |
| Never                      | 1.34            | 1.49                   | 1.10          |
| Girls (number of subjects) |                 |                        |               |
| Parental control           | 5658            | 858                    | 1063          |
| Always                     | 1.00            | 1.00                   | 1.00          |
| Sometimes or often         | 2.67***         | 2.21***                | 2.50***       |
| Seldom                     | 5.63***         | 2.39*                  | 3.00**        |
| Never                      | 2.08***         | 3.90***                | 3.27**        |
| Parental emotional support |                 |                        |               |
| Always                     | 1.00            | 1.00                   | 1.00          |
| Sometimes or often         | 1.30***         | 1.07                   | 1.01          |
| Seldom                     | 1.73***         | 1.53                   | 1.28          |
| Never                      | 2.04***         | 2.02*                  | 3.02***       |

\*  $P < 0.05$ , \*\*  $P < 0.01$ , \*\*\*  $P < 0.001$ .

<sup>a</sup> For each family structure the logistic model included the same factors: parental control, parental emotional support, age, educational level of parents, type of school (junior high school/high school/vocational school) and sector (public/private).

Table 6. Risk of current cannabis consumption according to family structure, parental control and parental emotional support, and according to gender (ORa, or adjusted Odds Ratio<sup>a</sup> and 95% confidence intervals)

|                            | Intact families |           | Reconstituted families |           | Single parent |           |
|----------------------------|-----------------|-----------|------------------------|-----------|---------------|-----------|
| Boys (number of subjects)  |                 |           |                        |           |               |           |
| Parental control           | 5276            |           | 822                    |           | 928           |           |
| Always                     | 1.00            |           | 1.00                   |           | 1.00          |           |
| Sometimes or often         | 2.28***         | 1.92–2.71 | 1.50                   | 0.99–2.27 | 2.44***       | 1.67–3.58 |
| Seldom                     | 5.35***         | 3.98–7.20 | 2.87***                | 1.53–5.39 | 5.96***       | 2.95–12.1 |
| Never                      | 3.53***         | 2.55–4.88 | 4.69***                | 2.41–9.13 | 4.01***       | 2.04–7.87 |
| Parental emotional support |                 |           |                        |           |               |           |
| Always                     | 1.00            |           | 1.00                   |           | 1.00          |           |
| Sometimes or often         | 1.16            | 0.98–1.37 | 1.13                   | 0.75–1.68 | 0.86          | 0.59–1.27 |
| Seldom                     | 1.61***         | 1.21–2.15 | 0.84                   | 0.45–1.56 | 1.34          | 0.75–2.38 |
| Never                      | 1.58**          | 1.12–2.22 | 1.22                   | 0.57–2.64 | 0.96          | 0.46–1.98 |
| Girls (number of subjects) |                 |           |                        |           |               |           |
| Parental control           | 5658            |           | 858                    |           | 1063          |           |
| Always                     | 1.00            |           | 1.00                   |           | 1.00          |           |
| Sometimes or often         | 3.01***         | 2.46–3.68 | 3.05***                | 2.01–4.64 | 3.27***       | 2.24–4.78 |
| Seldom                     | 6.36***         | 4.32–9.39 | 6.12***                | 2.93–12.8 | 4.14***       | 1.92–8.91 |
| Never                      | 3.80***         | 2.42–5.99 | 4.92***                | 2.13–11.4 | 2.04          | 0.86–4.87 |
| Parental emotional support |                 |           |                        |           |               |           |
| Always                     | 1.00            |           | 1.00                   |           | 1.00          |           |
| Sometimes or often         | 1.34**          | 1.08–1.66 | 1.04                   | 0.67–1.62 | 1.32          | 0.88–1.97 |
| Seldom                     | 1.65***         | 1.22–2.24 | 1.63                   | 0.92–2.88 | 1.45          | 0.82–2.58 |
| Never                      | 2.01***         | 1.42–2.85 | 1.48                   | 0.74–2.95 | 4.56***       | 2.36–8.82 |

\*  $P < 0.05$ , \*\*  $P < 0.01$ , \*\*\*  $P < 0.001$ .

<sup>a</sup> For each family structure the logistic model included the same factors: parental control, parental emotional support, age, educational level of parents, type of school (junior high school/high school/vocational school) and sector (public/private).

the three substances among girls (not among boys) with single parents, and for tobacco use among girls (not among boys) in reconstituted families. These gender differences found could be explained by the fact that females are more 'family-oriented' while boys are more 'peer-oriented' (Choquet and Ledoux, 1994).

This study had some limitations. First, for practical reasons (the average time to complete the questionnaire could not exceed one class period), we only included some proxy measures concerning parental control and parental emotional support. But the relation between these simple measures and current substance uses are very significant. So these results overwhelmingly support the present conclusions of the survey. Second, we looked only at young people attending school (those not attending school were <10% among the 16–18-year-olds in 2003, according to official statistics) and in the school attendant population there were also non-respondents (11% did not participate in the survey—absent or refusals), and between 1 and 5% did not respond to the relevant questions for this study and were excluded. At the same time, because substance use as well as parental dysfunctioning are more frequent among high-risk youth (street and homeless youth, absentees), it is reasonable to hypothesize that their inclusion would in fact have reinforced the results obtained. Third, the study was based on self-reported data. The results should therefore be interpreted with caution, particularly given a possible selection bias. However a self-administered anonymous questionnaire is arguably a good tool to study the perceptions that adolescents have of living conditions in their families and of their consumption of various substances. Wills *et al.* (2001), in a study on family

risk factors and substance use in adolescents, showed that results from self-report data were corroborated by independent teacher reports. Although perceived parental control and perceived parental emotional support considered may differ from actual levels of control or support. They could be appropriate, since parental practices are liable to provide the expected effects insofar as they are perceived by the adolescents themselves.

In conclusion, there is an inverse relationship between parental control and the consumption of tobacco, alcohol, and cannabis. The impact of parental control was greater among girls than among boys. It can be concluded that there is a need for parental control to be systematic, whatever the family structure. Although parental emotional support appeared to predict substance use less well, it had an important role especially among girls. The role of parenting was found to be important in all types of families, though parental control and parental emotional support were less systematic among boys in reconstituted and single-parent families than among intact families. These results stress the importance of working together with parents, especially in the framework of general practice or with other general health professionals (school doctors, school nurses, hot-line professionals, school social workers, etc.).

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