

Alcohol, tobacco and cannabis during the « collège years »

Results of the Health Behaviour in School-aged Children (HBSC) 2010 survey

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In France, the levels of legal and illegal drug use in adolescence, as well as recent trends in such use, have been assessed over the last fifteen years or so through a group of representative surveys of the general population. This system for observing psychoactive substance use relies mainly on the ESPAD (European School Survey Project on Alcohol and Other Drugs) and ESCAPAD (Survey on Health and Use on Call-up and Preparation for Defence Day¹) surveys that, since 1999-2000, have been regularly interviewing 16- and 17-year-olds. By focusing on adolescents aged 11 to 15, the HBSC (Health Behaviour in School-aged Children) survey reveals specific information about key trends in early drug use and provides an image of the spread of use throughout the early adolescent years. Conducted at the age when use begins, this survey examines the context of initiation and provides perspective on the circumstances under which drug use becomes “established” in the life of certain young people.

What is different about the 2010 version of the HBSC survey is that, in addition to interviewing adolescents aged 11, 13 and 15, as in previous survey years, it also questioned a representative sample of all French children in collège (i.e., the first four years of secondary school in France, starting with “6ème” and running up to “3ème”). This wider scope enabled use to be described according to the school class of the adolescents questioned at the time of the survey, and not just by age. This change in framework, which was expanded to include all “collège” years, provided a continuous observation of drug use in the youngest adolescents² and a look at the temporal spread of use in a school context, which should provide a better understanding of the role these school years play in the life of adolescents. Moreover, these results may soon be supported by a study of use during “the lycée years”, which correspond to the last three years of secondary school, since the approach developed in the HBSC was adopted

by the ESPAD 2011 survey. These surveys are the result of a long-standing partnership between the OFDT, the INPES (French National Institute for Prevention and Health Education), the French national education system and the Association for the development of the HBSC.

These methodological choices should support decision-makers by answering certain questions, thereby helping them devise prevention strategies. Such questions include, for example, in which school years is cannabis first use observed? Is the spread of the use of different substances homogeneous and linear throughout the collège years? Is it possible to identify time periods during collège in which substance initiation or use accelerates?

This issue of *Tendances* presents the main results of the French section of the 2010³ version of the HBSC survey. It provides an overview of tobacco, alcohol and cannabis use during different school years by examining changes in the use of these substances from 2006 to 2010 for students aged 11, 13 and 15 years. Finally, these results are examined within the context of the recent measures adopted to reduce drug use in minors and suggest areas for consideration in future prevention strategies.

Spread of use among collège students

Lifetime use

During collège, by far the most frequently psychoactive substance tried is alcohol,

1. The National Defence and Preparation Day (JAPD in French), established by the law of 28 October 1997, became the National Defence and Citizenship Day (JDC in French) in 2011.

2. While this issue of *Tendances* focuses only on adolescents in collège, the survey also includes children in the last year of primary school (CM2) and in the first year of lycée (seconde) (see methodology box). Likewise, the HBSC survey asks questions on rare illegal substances (cocaine, heroin, LSD...). The main results on these substances are mentioned in a box.

3. An analysis of the data on drug use is available in the complete HBSC 2010 survey report: see bibliography.

followed far behind by tobacco lifetime use, drunken episodes and cannabis lifetime use (Figure 1).

Lifetime use⁴ with alcohol, which, at 59.3%, is relatively high in 6ème students, increases progressively throughout the collège years, reaching 80% of 3ème students.

Although the increase in the level of lifetime use with alcoholic beverages from year to year is statistically significant, the amplitude in alcohol lifetime use is proportionally lower than for other substances, given the high number of 6ème students who have already tried alcohol when they start 6ème. As such, and in contrast with tobacco (see below), the collège years do not constitute an initiation phase, but rather, a phase in which the spread of alcohol use becomes generalised. In contrast, there is a marked increase in drunken episodes during this period: approximately one out of six of these students states having experienced drunkenness, with levels that increase fivefold between 6ème and 3ème (increasing from 6.8% to 34.0%). Boys prove to be more precocious than girls (the sex ratio⁵ is 2.1 in 6ème), even though the differences diminish starting in 4ème.

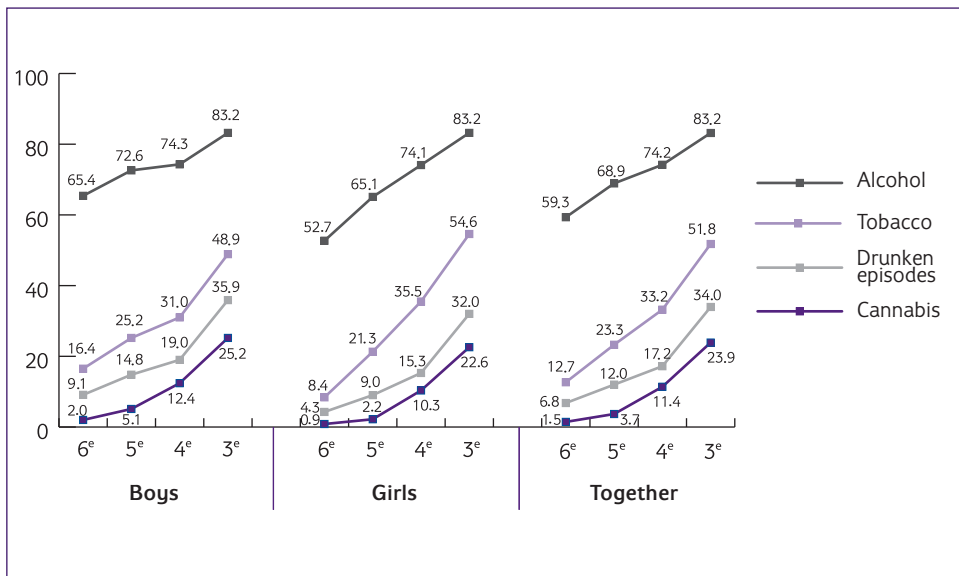
Less than one third of collège students experiment with tobacco, but this proportion increases sharply between 6ème and 3ème, from 12.7% to 51.8%. Like for alcohol consumption, this progression in tobacco use initiation during the collège years varies with sex. Boys experiment with tobacco earlier than girls (16.5% vs. 8.4% in 6ème), but girls catch up in 4ème, the school year in which the sex ratio reverses.

In 2010, one out of every ten collège students stated that they had already used cannabis. Although there seems to be limited lifetime use with cannabis in 6ème (1.5%), there is much more in 3ème, when nearly one out of every four adolescents states having experimented with this substance. There are two distinct phases in the spread of cannabis use during this period: the first phase, during the first two collège years, is characterised by limited use and slow progression. The second phase, which starts in 4ème, demonstrates a marked hike in lifetime use. Despite the lower prevalence in the use of this drug compared with alcohol, tobacco and drunken episodes, the spread of cannabis use during the collège years is one of the most pronounced (1.5% in 6ème vs. 23.9% in 3ème).

Recent use⁶

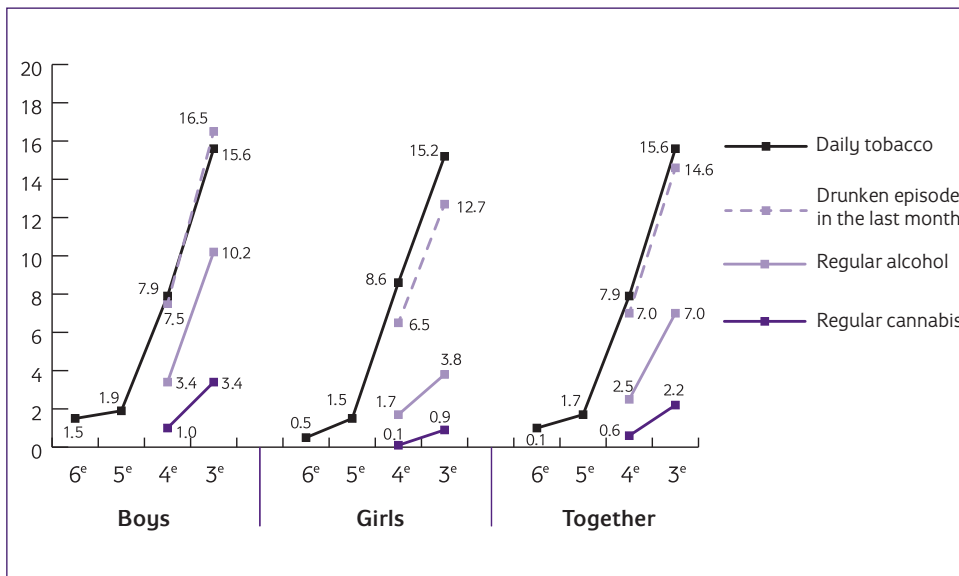
The level of regular alcohol and cannabis use (at least 10 times in the last month), the daily use of tobacco and recent drunken episodes (at least one drunken episode in the last month) (Figure 2 and Table 2) progress similarly to lifetime use, except for the marked acceleration in use between 4ème and 3ème. Subsequently, although daily tobacco use remains low (2% of 6ème and 5ème students) before 4ème, its spread thereafter becomes marked with a doubling between 4ème and 3ème of the proportion of students stating that they smoke on a daily basis

Figure 1 - Lifetime use with tobacco, alcoholic beverages, and cannabis as well as first drunken episodes among collège students by sex and year (%)



Source: HBSC 2010 survey, processed by the OFDT.

Figure 2 - Recent use of tobacco, alcohol, cannabis, and drunken episodes, by sex and class (%)



Source: HBSC 2010 survey, processed by the OFDT.

(7.9 % in 4ème, 15.6% in 3ème). In young girls, despite “later” lifetime use, daily tobacco smoking increases and becomes comparable to the levels seen among boys by the end of collège.

Although, like for tobacco, it is not possible to talk about a massive spread in alcohol use during the collège years, increasingly frequent alcohol use does clearly develop starting in 3ème, where more than one out of every two students states having consumed alcohol in a given month. Regular consumption of alcoholic beverages (at least 10 times in the last month), which is still rare (2.5%) among 4ème students, rises sharply thereafter to 7.0% of 3ème students. The sex ratios, which are upwards of 2, demonstrate a predominance of regular alcohol use among boys.

The observation is the same for recent drunken episodes, whose levels doubled between 4ème and 3ème, with a marked difference between girls and boys, especially starting in 3ème (12.7% and 16.5% respectively, p=0.05).

4. To see a definition of indicators used, refer to the methodology box.

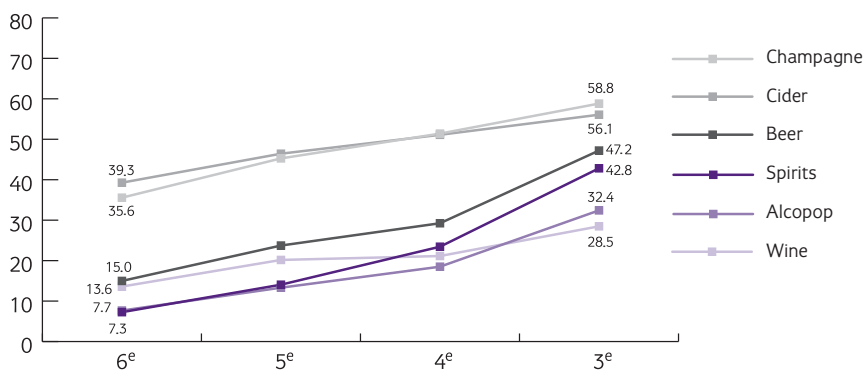
5. For a given indicator, the sex ratio is the relationship between the percentage of boys and the percentage of girls: when over 1, it indicates a higher prevalence among boys, and under 1, vice-versa.

6. Not including tobacco, on which students in all collège classes where questioned, the questionnaire issued to students in 4ème and 3ème was more complete, and had questions on the use of other substances in the last month.

The main alcoholic beverages drunk during the year

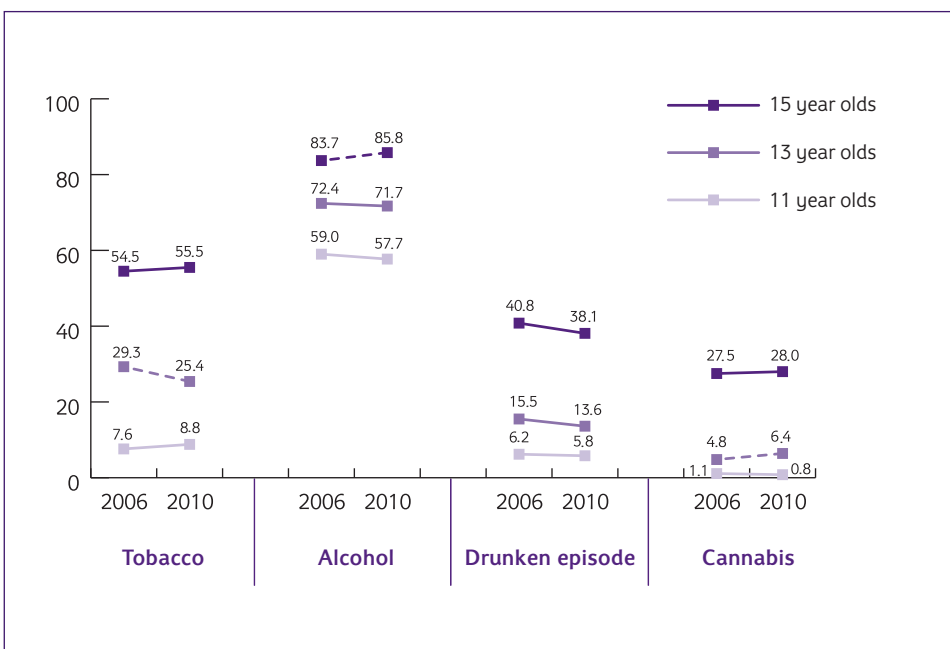
All levels of use increase when adolescence begins, regardless of the type of alcoholic beverage (Figure 3). However, there are certain specificities per class. Nearly half of 6ème and 5ème students (39.3% and 46.4% respectively) state, for example, that they have drunk cider at least once in the last year. These students also state having drunk champagne in the last year (35.6% and 45.3%) respectively. Other alcoholic beverages (beer, alcopops, wine, spirits) are mentioned much less often by young people. Students in 4ème and 3ème mention the same classification in the types of alcoholic beverages drunk as their younger fellow students. However, starting in 4ème, the consumption of beer, spirits and alcopops increases sharply. At the end of collège, the most frequently mentioned alcoholic beverages are as follows: champagne (58.8%), cider (56.1%), beer (47.2%), spirits (42.8%), alcopops (32.4%) and wine (28.5%). The consumption of wine, the spread of which is the most moderate throughout collège, remains among the lowest throughout collège, until students enter lycée. This 2010 breakdown in alcoholic beverage type drunk by collège students is very similar to what was observed in 2006..

Figure 3 - Types of alcoholic beverages drunk at least once in the last year, by class (%)



Source: HBSC 2010 survey, processed by the OFDT.

Figure 4 - Changes in psychoactive substance lifetime use from 2006 to 2010 by age (%)



Interpretation: the dotted lines indicate statistically significant level changes from 2006 to 2010 at the 0.05 threshold.

Source: HBSC 2006, 2010, processed by the OFDT.

Changes in consumption patterns from 2006 to 2010⁷

Until 2006, the French section of the HBSC survey only pertained to schooled adolescents aged 11, 13 and 15, as required by international protocol. Therefore, a review of changes from 2006 to 2010 can only pertain to these age groups since the changes to the survey enabling all collège students to be analysed were not introduced until 2010 (see methodology box). Subsequently, the levels compared vary slightly from those suggested previously in this issue, which are provided by student school year⁸.

Tobacco

Changes in tobacco smoking among students aged 11, 13 and 15 years is not uniform for each age group (Figure 4 and Table 1). Although lifetime use with tobacco smoking in students aged 11 and 15 appeared to remain steady from 2006 to 2010, lifetime use among students aged 13 declined significantly over the same period (from 29.3% to 25.4%, $p=0.004$). This decline was mainly due to a decrease in use among boys (30.1% vs. 25.8%). In parallel to this decrease in lifetime use among these young students, there was a difference of 3 months in mean age at first use (from 13 years and 1 month in 2006 to 13 years and 4 months in 2010) according to the ages of initiation reported by 15-year-old students⁹. These two observations indicate that the lower level of lifetime use observed among 13-year-old adolescents is probably due to a slight delay in the initiation of tobacco use. Although relatively rare among the youngest students, daily tobacco smoking is on the rise, even though among 15-year-old students, the one point increase between the two periods proves to be insignificant.

Alcohol and drunken episodes

Changes in alcoholic beverage use also appears contrasted. Although students aged 15 declared increased lifetime use with alcohol from 2006 to 2010 (83.7% and 85.8% res-

7. In 2006, the section of the questionnaire pertaining to the use of psychoactive substances was thoroughly reworked so that the questions would be closer to those used in other French surveys. Although this effort at harmonisation improved the comparability of the consumption reported in the HBSC 2006 survey with other surveys and the 2010 survey, comparing data with the 2002 survey remains difficult.

8. Students aged 15, for example, can be found in three different school years (4ème, 3ème and 2nde) at proportions of 3%, 33% and 63% respectively.

9. The mean age is calculated among 15-year-old experimenters, with the understanding that the initiation process is not over.

Table 1 - Changes in regular use from 2006 to 2010 by age (%)

		2006	2010
Tobacco	11 y.o.	0.2	0.6 *
	13 y.o.	2.2	3.8 ***
	15 y.o.	17.9	18.9 ns
Alcohol	15 y.o.	8.5	8.5 ns
Cannabis	15 y.o.	3.3	2.9 ns

*, **, *** and ns: Chi² test significant respectively at 0.05, 0.01, 0.001 and "non significant".

Source: HBSC 2006, 2010, processed by the OFDT.

pectively), lifetime use among the younger students remained stable over the period. Furthermore, it is appropriate to emphasise the stable level of regular use among 15-year-olds (8.5% in 2010 as in 2006). For drunken episodes, the levels remained stable overall for the period, regardless of the age of the students. The downward trend in drunken episodes among students aged 13 and 15, although statistically insignificant, may indicate a change in behaviour.

Cannabis

For cannabis, only lifetime use among 13-year-olds rose from 2006 to 2010 (from 4.8% to 6.4%), while it remained stable among 15- and 11-year-olds (Figure 4). Today, the proportion of students in their last year of college who have used cannabis once in their life is 28.0%. Regular use at the age of 15 remained rare (2.9%) and stable compared to 2006.

Table 2 - Levels of use among college students by class and sex

		Boys	Girls	Sex ratio / test	All	Ratio lower level	All college students
Tobacco use in the lifetime	6ème	16.5	8.4	2.0***	12.7		30.2
	5ème	25.2	21.3	1.2*	23.3	1.8***	
	4ème	31.0	35.5	0.9*	33.2	1.4***	
	3ème	48.9	54.6	0.9*	51.8	1.6***	
Daily tobacco smoking	6ème	1.5	0.5	3.1*	1.0		6.6
	5ème	1.9	1.5	1.2 ns	1.7	1.8*	
	4ème	7.3	8.6	0.8 ns	7.9	4.6***	
	3ème	16.0	15.2	1.1 ns	15.6	2.0***	
Alcoholic beverages use in the lifetime	6ème	65.4	52.7	1.2***	59.3		71.4
	5ème	72.6	65.1	1.1***	68.9	1.2***	
	4ème	74.3	74.1	1.0 ns	74.2	1.1***	
	3ème	83.2	83.2	1.0 ns	83.2	1.1***	
Drunken episode in the lifetime	6ème	9.1	4.3	2.1***	6.8		17.5
	5ème	14.8	9.0	1.6***	12.0	1.8***	
	4ème	19.0	15.3	1.2*	17.2	1.4***	
	3ème	35.9	32.0	1.1 ns	34.0	2.0***	
Cannabis use in the lifetime	6ème	2.0	0.9	2.4*	1.5		10.2
	5ème	5.1	2.2	2.3***	3.7	2.5***	
	4ème	12.4	10.3	1.2	11.4	3.1***	
	3ème	25.2	22.6	1.1	23.9	2.1***	
Alcohol use in the last 30 days	4ème	40.9	36.3	1.1*	38.6		
	3ème	56.8	49.7	1.1**	53.2	1.4***	
Regular alcohol use	4ème	3.4	1.7	2.0*	2.5		
	3ème	10.2	3.8	2.7***	7.0	2.7***	
Drunken episode in the last 30 days	4ème	7.5	6.5	1.2	7.0		
	3ème	16.5	12.7	1.3*	14.6	2.1***	
Repeated drunken episodes	4ème	1.4	0.8	1.7	1.1		
	3ème	4.6	2.1	2.2**	3.4	3.0***	
Cannabis use in the last month	4ème	5.5	4.0	1.4	4.8		
	3ème	12.2	10.0	1.2	11.1	2.3***	
Regular cannabis use	4ème	<1%	<1%		<1%		
	3ème	3.4	0.9	3.8***	2.2	3.9***	

*, **, *** and ns: Chi² test significant respectively at 0.05, 0.01, 0.001 and "non significant".

Ratio lower level: compare levels of use between two successive school years 6ème/5ème; 4ème/5ème, and so on.

Interpretation: In 6ème, 16.5% of boys and 8.4% of girls stated already having smoked cigarettes in their life, and the difference was significant $p < 0.001$ (sex ratio of 2 with ***). The difference in level between 6ème and 5ème is statistically significant $p < 0.001$ (before the last column ***).

Source: HBSC 2006, 2010, processed by the OFDT.

The other illicit substances

Adolescents in 4^{ème} and 3^{ème} state starting to use other illegal or abused substances (Table 3). Hence, 2.3% of students in these classes claimed using cocaine at least once in the last 12 months. The use of inhaled substances or medicines "for getting high", i.e., products that are abused with respect to their primary use, also appears to be limited (3.5% and 2.0% respectively). Nevertheless, it is appropriate to reiterate that, for rare illegal drugs, like LSD, ecstasy, amphetamines, cocaine and heroin, questioning the youngest adolescents and interpreting data requires special attention because these adolescents do not know these substances very well or may confuse them. Moreover, although we are speaking about reported use in the last year, it is reasonable to consider such use as lifetime use given, on the one hand, the age of the respondents, and on the other hand, the mean age of lifetime use with these substances. This age was observed to be 17 in the ESCAPAD survey (e.g., for cocaine, the mean age for lifetime use in 17-year-olds was 16,0 years).

Table 3 - Use in the last year of illegal substances other than cannabis by all 4^{ème} and 3^{ème} students (%)

Inhaled substances (glue or solvents)	3.5
Cocaine	2.3
Medicines "for getting high"	2.0
Hallucinogenic mushrooms	1.3
Ecstasy	1.2
Heroin	1.2
Amphetamines	1.0
LSD	0.7

Source: HBSC 2010 survey, processed by the OFDT.

The survey therefore reveals stability in use, which may seem surprising with respect to the declines observed in 2001 among slightly older adolescents. The ESCAPAD survey demonstrated that, since 2003, the majority of indicators of cannabis use in 17-year-olds have declined. The 2011 version of the survey recently confirmed this downward trend. This apparent contrast between cannabis use that remains stable at the age of 15 but declines at 17 may be re-examined in light of the results of the ESPAD survey that was conducted in 2011 on a representative sample of lycée students.

Discussion

The results of the HBSC survey conducted in 2010 can be considered against a background of strengthened public policies against tobacco smoking and alcohol use in minors, with the enactment of various laws since the early 2000s. The students surveyed in HBSC 2010 are among the first generations for which the sale of cigarettes was banned for minors. The oldest members of this generation were 9 years of age when the first law¹⁰ to restrict tobacco use among young people was enacted. This law prohibited the retail sale of packs of fewer than 20 cigarettes and any tobacco-related sale to minors under the age of 16, similar to the alcohol law enacted in the early 1990s¹¹. Furthermore, in 2006, a decree¹² reinforced the provisions of the *loi*

Evin and, more specifically, those pertaining to the ban on smoking in public places and educational establishments. Despite these restrictive provisions, it is appropriate to emphasise the absence of any major changes between 2006 and 2010 among the generations surveyed in the HBSC survey, with the exception of the decrease in lifetime use with tobacco among adolescents 13 years of age. This decrease is even more remarkable considering that it occurs against a background of stability in the use of other substances. Moreover, this decrease is shored up by the latest ESCAPAD 2011 data, which demonstrates a clear delay in the age of lifetime use with tobacco from 2008 to 2011, despite an increase in daily tobacco smoking in 17-year-olds. These converging elements reinforce the idea that bans on tobacco use are particularly effective in young people at a time when tobacco use is on the rise in other age groups. The main bonus of this legislation might well be a strengthening of the prohibitive feelings related to tobacco.

Regarding school-based prevention, the results of the survey can be used to guide or support certain choices in terms of schedule. Indeed, collège years coincide with the period of initiation of drug or the establishment of more regular use with sometimes sharp increase from one class to the next.

Subsequently, for example, the regular and steep progression in tobacco lifetime use throughout collège illustrates the benefits of early intervention. Regarding the already-high proportions of 6^{ème} students who have al-

ready tried alcohol, it is appropriate to question whether or not alcohol use prevention initiatives should not begin in primary school. The observation of an increase in lifetime use with drunkenness and regular use in 4^{ème} also highlights the benefit of a new wave of preventive interventions at this educational phase. This seems even more relevant given that 4^{ème} is also the age at which cannabis lifetime use soars.

Conclusion

■ These results confirm the predominance of alcohol use among adolescents with lifetime use among a large majority of collège students. Moreover, regular consumption beginning in 4^{ème} and 3^{ème} is particularly high among boys.

■ Later on, the first drunken episodes begin to occur regularly among the collège student population, with one out of every three 3^{ème} students stating having experienced drunkenness. Like for alcohol consumption, intoxication is more frequent among boys, but starting in 4^{ème}, girls and boys start to experience drunken episodes with similar frequency.

■ Tobacco lifetime use remains fairly comparable among boys and girls. Like in 2006, daily smoking concerned one out of every five 15-year-olds in 2010.

■ The increase in tobacco smoking among adolescent girls, already reported in the previous survey, is confirmed in this survey. Tobacco smoking among girls starts later than in boys, but occurs at a similar frequency.

■ Cannabis remains the illegal drug most frequently tried in early adolescence. Cannabis lifetime use remains very rare among the youngest adolescents (11-13), but increases sharply to nearly one out of every four students in 3^{ème}.

10. The law 2003-715 of 31 July 2003 (which was enacted in September 2004) aiming to restrict tobacco use in young people was the first to have banned the sale and free distribution of tobacco products to minors under the age of 16 in all tobacco shops, retail outlets or public places. Thereafter, the government stepped up the ban on sales of tobacco products and alcoholic beverages to all minors in 2009, when the "Hospital, Patients, Health and Territories" (HPST) law was adopted. It should be noted that, although this last measure reinforced the prohibitive aura, it did not directly affect minors under the age of 16, who had already been affected by the previous ban.

11. Loi n°91-32 du 10 janvier 1991 relative à la lutte contre le tabagisme et l'alcoolisme (loi Evin).

12. Décret n°2006-1386 du 15 novembre 2006 fixant les conditions d'application de l'interdiction de fumer dans les lieux affectés à un usage collectif.

The HBSC is an international survey conducted every four years since 1982 under the auspices of the European office of the World Health Organisation (WHO). At present, 41 countries or regions, mainly in Europe, take part in the survey and collect data on the health, school experience and negative or positive health behaviours of students aged 11, 13 and 15 using standardised methodology. In terms of psychoactive substance initiation and use, the questions were purposely limited and focused mainly on tobacco, alcohol and cannabis use. Although the module also included a question on the use of other illegal substances, we reiterate that asking the youngest adolescents questions on rare psychoactive substances (cocaine, LSD, heroin...) can be troublesome from a methodological and ethical point of view. More specifically, measurements can be riddled with imprecision due to a lack of knowledge about the substances among those surveyed. Furthermore, 11-to-13-year-olds were not asked these questions. A very short description of the levels observed for these drugs is provided in the global survey report.

The HBSC survey is self-administered, strictly anonymous and conducted in class under the supervision of a specially trained investigator. France has been taking part in the survey since 1994: the sample, which was initially limited to the Midi-Pyrénées and Lorraine regions, has covered all of Metropolitan France since 2002.

In 2010 in Mainland France, 11,754 students from CM2 (last year of primary school) to seconde (the first year of high school) were surveyed in public and private establishments under contract with the French national education authority.

The final sample, after data screening, included 11,638 students (49.8 % were girls). Until now, France "sampled" collège students to obtain three representative subgroups of students aged 11, 13 and 15. It was only in 2010 that the sampling methods were modified to obtain a representative sample of young students aged 11, 13 and 15 (to comply with international practices) as well as a sample of all collège students in different classes.

The medical department of the Toulouse school district (Dr Félix Navarro) coordinated this project France-wide. Dr Emmanuelle Godeau is the primary investigator working in cooperation with INSERM (French National Institute for Health and Medical Research) unit U1027, the French Ministry of National Education (DGESCO or the National directorate on school teaching, DEPP or the Performance and prospective studies department), the Association for the development of the HBSC and the INPES (French National Institute for Prevention and Health Education). The latter organisation also publishes the French report, which, in addition to exploring psychoactive substance use, examines health, health behaviours, the educational experience and life experience (family, school, friends) among collège students to provide a true view of the life of collège students in France. This view has even more meaning given the international nature of the survey, which enables comparisons to be drawn between countries. Finally, the fact that the survey is conducted every four years means that trends can be followed over time. Since the 2002 survey, the OFDT has been one of the major sources of funding for the survey and has been working to help develop the section of the questionnaire pertaining to drug use as well as the analyse of the results and their transmission.

Definitions

Use is illustrated by the following indicators. These indicators describe use during adolescence in a simple way. The concept of use during a lifetime encompasses users as well as adolescents who have just tried or abandoned their use; therefore, it does more to describe the spread of a substance in a population than the use of the substance.

Lifetime use: use at least once in a lifetime

Current use or use in the last year: use in the 12 months preceding the survey

Recent use or use in the last month: use at least once in the last month

Regular use: use at least 10 times in the 30 days prior to the survey

Weekly use: use at least once a week

Daily use: use at least once daily in the last 30 days

Credits

French National Education Authority, all personnel who enabled this survey to take place under the best possible conditions at each of the selected establishments. Catherine Arnaud, Epidemiological Physician at INSERM UMR 1027 – Université Paul Sabatier, Toulouse and Félix Navarro, Advisory Physician of the Toulouse school district. Ivana Obradovic and Marie-Line Tovar (OFDT), Romain Guignard (INPES).

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