

**Differences in the risk factors of illicit drug use among young females and males aged 15-19  
years**

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## **Abstract**

**Purpose:** To describe the behaviours and characteristics of students aged 15-19 years and investigate the risk factors for illicit drug use, highlighting the differences between males and females.

**Methods:** A two-stage probabilistic sampling method was implemented, with stratification of the first stage units: the first stage units are represented by the high schools and the second stage units by the classes of students (all ages). The data collection instrument used was based on the international protocol adopted in the ESPAD study, by completing the questionnaire through an on-line procedure. The estimate of the risk factors of consumption of psychotropic substances was assessed by a logistic regression model.

**Results:** The survey involved 35,980 students, 50.0% females. In the past year, 20.2% of the students surveyed had used drugs at least once (24.2% males and 16.2% females). Substances most frequently taken include cannabis (19.1%), cocaine (1.5%) and sedatives and tranquilizers (1.8%). The risk factors determining the use of illicit drugs by young female students seem to be the presence of friends/siblings who use drugs (OR=12.0), and having been drunk at least once in their lifetime (OR=5.7). Compared to males, the greatest risk of females in the use of illicit drugs regards the presence of friends/siblings who use drugs, drunkenness, the lack of attention by parents regarding the knowledge of the places frequented by the daughters on Saturday night and the alcohol consumption in the past 30 days.

**Conclusions:** The results highlight the need to increase knowledge and understanding of risk behaviours, focusing on the socio-relational aspects of the respondents to identify and implement best practices and specific models of prevention for gender.

**Keywords:** drug addiction, gender differences, risk factors, student population survey



## **Introduction**

The consumption of psychotropic substances, legal or illegal, is a wide social-health problem, which can considerably affect people lives. As reported in the literature, the use of these substances may affect many aspects of the health, for example the growth of children and adolescent, the general health status and the quality of life, and may also have important socio-economic consequences [1].

The consumption of illegal drugs is a widespread phenomenon especially in the youth age group and it is often associated with other risk behaviours (alcohol consumption, cigarettes smoke, dangerous driving, antisocial behaviours, etc.), with a consequent increasing of the likelihood to cause harm to the health [2].

In Europe, the monitoring of the consumption of psychotropic substances constitutes the basis for the planning of further intervention studies and the completion of the cognitive profile on young population, which are necessary for the definition and orientation of new and effective counteractions [3].

In Italy, the population-based study on the students drugs consumption started in 2000, with annual periodicity, realized in all the classes of the secondary schools. The Italian study presents some peculiarities largely attributable to two aspects: the annual repetition of the study, able to meet the information needs of the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) [4], and the extent of the study to the entire student population of the secondary school degree (15-19 years), unlike the European survey [5], which is limited to the age group 15-16 years.

The overall purpose of the drug consumption survey in the student population of 15-19 years, is to monitor the phenomenon over time, both in quantitative terms (prevalence of drugs consumption) and in qualitative terms (characteristics of psychotropic substances users). The adoption of standard

protocols allowed the pursuit of a second goal, no less important than the first, which concerns the comparison of the data of the consumption of tobacco, alcohol and other illicit substances in the school population, at national level, with the results obtained in the other European countries that adopt standard protocols [6].

The high sample size of the students interviewed, for each age, allowed in-depth analyses according also to the gender. Several studies have shown, in fact, that there are a lot of differences between males and females according the drugs consumption [2, 6-18]. As reported in the literature, this phenomenon involves mainly males, probably because of the greater susceptibility to get involved and to experiment new experiences, highlighting a drug consumption by adolescents, both boys and girls, that increases with the age [6, 11-12, 14, 18-20]. A lot of studies in the literature show that young people have a comprehensible preference for the cannabis consumption, which is the most widely substance used at all, especially among males [6, 11, 13, 16, 18]. On the other hand, the young female students prefer the consumption of tranquillizers or sedatives, without a medical prescription, with an estimated mean prevalence of consumption at EU level, at least once in their lifetime, equal to 8%, in 2011 [6, 11]. In general, the people with whom students take drugs for the first time seem to be friends for the male gender and the partner for females [7-9].

A study conducted among Spanish and Portuguese adolescents showed that a satisfactory relationship with family members, friends, classmates and teachers may have protective effects on the substances consumption by adolescents [14]; result also confirmed by a study conducted on a sample of 1,090 students in Milan [18]. The main risk factors for drug abuse seem to be, on the contrary, friends who take illicit drugs [14,15], and alcohol abuse [17].

In this sense, become, therefore, essential for the effectiveness of prevention and intervention strategies, which currently tend to ignore gender differences, learn more about the different motivations that drive the adolescents, boys and girl, to the consumption of psychotropic substances and understand what are the different risk factors.

According to this aim, on the basis of the data collected through the 2012 Italian survey on drug abuse in the student population [3], the behaviours and the characteristics of students aged 15-19 years have been investigated, identifying all the possible risk factors for the consumption of illicit substances, separately for males and females.

## **Methods**

### *Study design*

A two-stage probabilistic sampling method was implemented, according to which the first stage units are represented by the high schools and the second stage units by the classes of students (all ages); for each class the students were selected according to a cluster sampling. The adopted sampling design allows prevalence estimates for single age, gender and single geographical area (north-western, north-eastern, central, southern/islands). The selection of the first stage units was carried out in a proportionate way according to the region and the type of institute (secondary school or high school formerly specializing in education, polytechnic institute, vocational institute, arts institute), assuming that the morphological characteristics of the different geographical areas and the different types of school may affect the prevalence of substance use [3].

This sampling procedure allows, on the one hand, to obtain a sample structure that faithfully reproduces the real student population under study, and on the other hand, to substantially improve the efficiency of the sampling method [21]. In this case, in fact, since the groupings identified in the population are characterized by a variability lower than the variability of the total population, the precision of the estimates will be higher. The calculation of the estimates precision for each single stratum was obtained similarly to the total sample, using the sample size of the considered stratum [3].

### ***Data collection***

The instrument applied in this study is based on the international protocol adopted in the ESPAD study (European School Survey Project on Alcohol and Other Drugs), which in 2011 involved 35 European countries [5]. The questionnaire, administered in the first half of 2012, is divided into several sections, each of which aims to collect information on different aspects, such as habits, behaviours, use of psychotropic substances and family characteristics of the respondents. The questionnaire's completion was made online through a dedicated web site, after the delivery of anonymous username and password to each student. Within this web site are also available more detailed information on the organization and the implementation of the survey.

### ***Data analysis***

In order to investigate the characteristics of the young people aged between 15 and 19 years, some descriptive statistical analyses have been conducted regarding the habits and the behaviours, the interpersonal relationships with their family and friends, the self-esteem and the psychotropic substances consumption (cigarette smoking, alcohol and illicit drugs use). In order to assess the presence of statistically significant differences between gender, the Student T tests were used to analyze continuous variables and the Pearson Chi-Square test ( $\chi^2$ ) was used to analyze categorical variables. If they were not applicable, analogous non-parametric tests were used (Wilcoxon's rank-sum test or Fisher's exact test).

The estimation of the risk factors of psychotropic substances consumption, in males and females, was assessed using a logistic regression model. The covariates included in this model, were selected using a univariate analysis using the Pearson Chi-Square test ( $\chi^2$ ). Through the logistic regression model the estimate of the Odds Ratio (OR) was possible, which expresses how many times the presence of the risk factor examined increases the likelihood, for a subject, to be a drug user.

All the statistical analyses were implemented using the SPSS statistical software [22], release 18.0. A p-value<0.05 was used to establish statistical significance.

## **Results**

### ***Characteristics of the sample***

The survey involved 35,980 students attending 490 schools distributed throughout the national territory, evenly distributed by age (about 20% for each age investigated) and gender (50.0% females and 50.0% males). The 39.2% of the students interviewed attend schools of the southern and insular part of Italy, the 27.4% go to schools in the Northwest of Italy, the 16.5% in the schools of the Northeast of Italy, while the 16.8% are students of the schools of the central Italy (Table 1). There have been no significant differences between the distributions by geographical area and gender.

[Insert Table 1 here]

Regarding to the habits and the behaviours of the adolescents interviewed, on weekly basis, it was found that girls between 15 and 19 years read more than boys (9.8% vs. 20.4%, p-value<0.001), play with the computer for fun less than boys (68.0% vs. 38.1%, p-value<0.001), play with the slot machines or video poker less than boys (5.1% vs. 1.7%, p-value<0.001), practice sport less than boys (64.0% vs. 41.0%, p-value<0.001) and go out in the evening during the week less frequently than boys (39.2% vs. 30.0%, p-value<0.001) (Table 2). Moreover, a percentage of girls lower than boys asserted to have lost two or more days of school due to lack of will (22.0% vs. 19.9%, p-value<0.001).

[Insert Table 2 here]

Concerning the interpersonal relationships, it was found that girls are more dissatisfied with the relationship with their parents than boys, both with their mother (5.1% vs. 7.1%,  $p$ -value $<0.001$ ) and with their father (7.3% vs. 11.3%,  $p$ -value $<0.001$ ); moreover girls are more dissatisfied than boys with their relationships with classmates (6.2% vs. 8.6%,  $p$ -value $<0.001$ ) (Table 2). Confirmation of this result could be found in a study of 1,589 Portuguese adolescents and 4,191 Spanish students: girls have more conflicts in relationships with peers, are more vulnerable to rejection, and may be more sensitive to the influences of their peers than boys [14]. An almost equivalent level of dissatisfaction, however, is perceived in the relationships with friends, even if not statistically significant (3.7% for boys and 4.0% for girls,  $p$ -value=0.237).

Moreover, regarding the feelings that students perceive about themselves (Table 2), girls are characterized by a less positive idea about themselves than boys: the 17.8% of the females, in fact, assert to be not satisfied with themselves against the 8.4% of males ( $p$ -value $<0.001$ ). The majority of females (51.1%) believe to be useless, unlike the 39.7% of males ( $p$ -value $<0.001$ ); furthermore the 21.1% of the girls, stated to have a negative attitude towards themselves against the 10.7% of the boys ( $p$ -value $<0.001$ ). In addition, with reference to the last 7 days, females affirm to feel more depressed and sad compared to males (9.0% males vs. 19.5% females and 15.8% males vs. 33.7% females, respectively -  $p$ -values $<0.001$ ).

On the contrary, males adolescents seem to be more involved in dangerous behaviours than female peers: the 10.1% of boys are involved in fights at school or at home against the 2.9% of girls ( $p$ -value $<0.001$ ), and males caused purposely damage at school or at public places (parks, roads, etc.) more than the females (6.2% vs. 1.5%,  $p$ -value $<0.001$ ).

### ***Characteristics of legal and illegal psychotropic substances users***

The 37.9% of the students interviewed stated they have smoked in the last 30 days, this phenomenon involves more males than females (38.8% vs. 37.0%,  $p\text{-value}<0.001$ ); moreover, girls smoke quantitatively fewer cigarettes than males (Table 3). In fact, over the past 30 days, the 41.1% of the boys claims to have smoked more than six cigarettes per day, while this quantitative is consumed by the 34.1% of girls ( $p\text{-value}<0.001$ ).

Comparing the cigarettes consumption by age, it can be noticed that the girls 16 year olds smoke more than peers boys (32.4% vs. 35.1%,  $p\text{-value}=0.015$ ), while, among students aged 18 and 19 years, the males smoke the highest amount of cigarettes (47.0% males vs. 42.9% female,  $p\text{-value}<0.001$  and 49.1% males vs. 42.7% females,  $p\text{-value}<0.001$ , respectively).

[Insert Table 3 here]

Concerning the consumption of alcoholic beverages, a greater number of boys asserts to have been drunk and to drinking frequently than girls; this behaviour is highlighted with statistically significant differences ( $p\text{-value}<0.001$ ), also for age. The same trend was observed in a study conducted on a sample of 1,090 students in Milan (Italy), in which there were statistically significant differences between gender and between the different age groups, with respect to the alcohol consumption ( $p\text{-value}=0.003$  and  $p\text{-value}<0.0001$ , respectively) [18].

Looking at the alcohol consumption in the last month, the difference between males and females is elevated: the 17.7% of males stated to have drunk more than 10 times compared to the 8.5% of females ( $p\text{-value}<0.001$ ) (Table 3) .

The consumption of at least one illegal substance in the last 12 months is reported by approximately the 20% of all students interviewed, higher prevalence of boys than girls (24.2% vs. 16.2%,  $p\text{-value}<0.001$ ). The same trend is observed within each age ( $p\text{-value}\leq 0.005$ ), where it can be noticed

that the drug consumption is higher for males than females. In general, for all the analysed illicit drugs, prevalence of consumption greater in males than in females are observed (Table 4).

[Insert Table 4 here]

The illicit drug mostly taken by the students interviewed is cannabis (marijuana or hashish): the 23.1% of boys asserted they have tried it at least once in the last 12 months against the 15.2% of girls (p-value<0.001). At the same time, girls between 15 and 19 years seem less interested in the use of cocaine than boys: the 2.1% of the males shows to have taken cocaine at least once in the last year compared with 1.0% of female students (p-value<0001).

The consumption of tranquilizers or sedatives characterizes especially the younger female students (Table 4): the use of this drug without a medical prescription, over the last 12 months, is stated by the 2.4% of girl compared to 1.1% of boys (p-value<0.001).

With regard to the people with whom occur the first use of illegal substances, friends are of primary importance, both for males and females (81.3% vs. 77.2%, p-value<0.001). Unlike the boys, girls stated that the partner plays a crucial role in relation to the first use of psychotropic drugs (1.9% vs. 7.9%, p-value<0.001). For boys, on the contrary, there is the greater tendency to experiment an illegal substance for the first time alone (5.7% vs. 4.5%, p-value=0.021) (Table 4).

The poly-drug use of psychoactive substances, legal and illegal, is becoming the most popular and prevalent style of consumption among students and young people. In the case of adolescents, some studies have shown that throughout around this way of drugs consumption has been developed an out-and-out “culture”, in which substances are taken in a special order, quantity and context, depending to the effects sought by the drug users [20]. Referring to students who asserted to have

taken more than one substance in the last 30 days (of which at least one illegal), it can be noticed that the most common combination of substances is alcohol, tobacco and cannabis: the 64.0% of boys stated to have use these substances, while this percentage drops to 62.6% for girls, without a statistically significant difference (p-value=0.315) (Table 5). The combination of more than three substances was the second most frequent modality of poly-drug users: the 15.4% of males and the 13.9% of females claimed to have consumed three or more drugs in the 30 days preceding the interview, also in this case without a statistically significant difference (p-value=0.146). Moreover, analyzing the phenomenon of the poly-drug concerning the age of the students, it can be observed that, for each age, this phenomenon involves mainly males than females (p-value<0.001 for young people aged 16 and over), with an increasing trend (Table 5).

[Insert Table 5 here]

### ***Risk factors analysis***

For both genders, in order to estimate the risk factors of drug abuse, statistically associated with the consumption of illegal substances, the covariates selected for the logistic regression model were the following:

- the frequency of days in which young people go out in the night (disco, bars, parties, etc.) ;
- the frequency of days in which adolescents play with the slot machines or the video poker and similar;
- school days lost due to lack of will;
- the number of times, considering the lifetime period, in which the students are drunk;
- the presence of friends/siblings who use substances;
- the satisfaction in the relationship with parents;
- the lack of precise rules regarding the behaviour outside the own home;

- the parents knowledge about the places where their children spent the Saturday night;
- the amount of money spent without parental supervision;
- the alcohol consumption during the 30 days before the interview.

On the basis of the covariates selected for the multivariate analysis, two logistic regression models were implemented, separately by gender, and the results are described in Table 6.

[Insert Table 6 here]

The most important risk factor of drug abuse seems the presence of friends/siblings who use illicit drugs: males drug consumers have a 10.7-fold increase in the risk of psychotropic drugs consumption than those who did not know people who take drugs. Also for the females this risk is high and it is equal to 12.0 (Odds Ratio). In addition, the experience of drunkenness at least once in the students lifetime is a significant risk factor, more for females than males (OR=5.7 vs. OR=4.6, respectively), as well as the consumption of alcoholic beverages during the 30 days before the interview (OR=2.0 for females vs. OR=1.8 for males).

Concerning the interpersonal relationships with parents, the dissatisfaction is a risk factor for both genders: the OR is approximately 1.5 both for males and for females. The analysis shows also that the Odds Ratio for girls whose parents have little knowledge about the places where they spent the Saturday night is slightly higher than males (1.7 for females vs. 1.5 for males).

The goodness of fit of the estimated logistic regression model was assessed using the Hosmer-Lemeshow test [23]: the value of this test for the females' model is equal to 4.410 and the p-value equal to 0.818, while for the males' model the test is 3.699 and its p-value is equal to 0.883. These values lead to accept, or at least not reject the null hypothesis ( $H_0$ ), for which there are no

differences between the observed and the expected values. So, it can be concluded that the estimated models fit satisfactorily the data.

Finally, in order to complete the evaluation of these multivariate analyses, other validity measures, expressed in terms of probability, have been considered [24]. Sensitivity and specificity are statistical measures that evaluate the proportion of positive cases which are correctly identified as such (the true positive rate) and the proportion of negative cases which are correctly identified as such (the true negative rate), respectively.

The analysis of the classification tables obtained from the estimated logistic regression models, lead to quite high specificity values (84.8% for the females' model and 80.4% for males) and satisfactory sensitivity values (73.3% for females and 75.4% for males). Moreover, the percentage of cases correctly classified is quite high and equal to 82.5% for the logistic regression model estimated for female students and to 79.0% for the males' model.

## **Discussion**

The results obtained from this study suggest to give a greater consideration to the degree of satisfaction of young people, especially of the girls, with regards of themselves and their life [25]. A good level of satisfaction and reliance in life, constitute, in fact, a protective element to unhealthy behaviours such as the consumption of alcohol, tobacco and illicit drugs.

Equally important seems to be the family context and the relationships with parents, not so much in relation to the presence and severity of the rules, but according to the quality of the relationships with adults with reference to their role. The lack of interest by the parents about the places frequented by their children and the friendships can be a signal for a possible use of drugs. It is well known that, in general, males undergo to a minor control and supervision by parents compared to females, and this can lead to a greater probability of being involved from disreputable friends, and to a possible use of illicit substances [19]. Also other studies show that adolescents who have

unsatisfactory relationships with their parents are most encouraged in the substances abuse, increasing the risk of developing problem behaviours [18].

One more consideration should be made with respect to the presence of psychological/psychiatric problems in the family context, also in relation to the inappropriate use of tranquilizers and sedatives. Use and abuse of tranquilizers and sedatives, both regularly prescribed by a doctor and used without a medical prescription, in fact, characterizes to a greater extent the Italian young girls. Confirmation of these results can also be achieved at European level: the 2011 ESPAD report on the use of psychoactive substances in the 36 European countries participating, states that, on average, the tranquillizers and the sedatives without a medical prescription are mainly abused girls (8% for females vs. 5% for males, 15-16 year olds) [6]. Also the report of the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), published in 2005, which compares the consumption of substances by gender, states that among the secondary schools students (15-16 years) the consumption of tranquilizers and sedatives is higher among the female students in all the European Union countries, with the exception of 4 Member States (Cyprus, Ireland, Norway and the UK). [11]

The inability of some girls to solve their personal or family problems could be the gateway to the use of illicit substances. Specifically for girls, more attention should be paid to the meaning and the value of their relationship with their partner, especially for the central role that the boyfriend has in the first contact with the psychotropic substances. The scientific literature confirms the results obtained in our study; in particular, the study by Giusti et al on 105 adolescents treated between 10 and 17 years of age [7], shows that, for both genders, the first contact with the illicit drugs is carried out with peers (friends or classmates) for males, while for the girls the partner plays a crucial role according to the first use of psychotropic substances.

Our study shows, furthermore, that for all the analysed illicit substances, prevalence of consumption higher for males than females are observed, result also confirmed by the international literature [6, 11-12, 14, 18-20]. In addition, the most taken drug by the students interviewed is cannabis (hashish or marijuana), with an increasing prevalence among males in relation to the time periods considered (at least once in the life, at least once in the last year, at least one once in the last month). In Europe, it was found on average, that the 21% of males between 15 and 16 years has experienced at least one illicit drug in their lifetime, compared with 15% of females [6]. Moreover, the majority of the young people who have experienced a drug have used cannabis, and this is more likely to happen among males than females [11].

On the other hand, this study has some limitations. The main is related to the self reported characteristic of the survey: since the main objective concerns the use of drugs, there may be an underestimation of some behaviours, for which the percentages of consumption may be affected by some bias. These aspects have been widely discussed in the literature [26], other studies have reported that the "underreporting report are relatively minor" [27-28].

Finally, even if the study involves both public and private schools, representing therefore the entire scholastic population, it does not catch those leaving school, who are subjects that could potentially be at greater risk of drug consumption [29]. This limit is however obstructed from the investigation of all the age groups (15-19 years), considering that the early school leaving is more common after the first two-year period [30].

## **Conclusions**

The female gender seems to be less vulnerable to the illicit drug consumption. Nevertheless, within this there is a group at risk: in our study we have identified some risk factors for drug consumption in the female gender that are mainly the presence of friends/siblings who use illicit drugs, the

experience of drunkenness at least once in the students lifetime, the consumption of alcoholic beverages during the 30 days prior to the interview.

For this reason it is important to continue with research and studies in order to increase and improve the knowledge and the understanding of the dangerous behaviours, focusing on the socio-relational aspects of the respondents, in order to better identify and implement best practices and models of prevention, providing some selective interventions aimed at those who, more than others, run the risk of becoming regular drugs users.

Some examples of actions to be taken by parents, may be the intensification of the family support, offering selected interpretations and tools in order to help the parent-child relationship, and in the cases of dangerous behaviour intervene with actions of early detection. At the bottom of all the possible interventions which aim to prevent the use of psychotropic substances, emerges a moderate but consistent discipline of the children and the presence of well-defined family rules, that in the case of absence must be developed and supported in the family context.

In addition to these primary actions, there are the information and education on the psychotropic substances, in order to reinforce the knowledge about the effects and damages of these drugs and give to the family the opportunity to discuss about the abuse of the legal and illegal substances.

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## Tables

**Table 1.** Distribution of the socio-demographic characteristics of the students, by gender

Variables	Total	Male	Female
	N (%)	N (%)	N (%)
<i>Respondents</i>	35,980 (100.0%)	18,001 (50.0%)	17,979 (50.0%)
<i>Age</i>			
15 years	6,703 (18.6%)	3,230 (48.2%)	3,473 (51.8%)
16 years	7,412 (20.6%)	3,687 (49.7%)	3,725 (50.3%)
17 years	7,713 (21.4%)	3,924 (50.9%)	3,789 (49.1%)
18 years	7,321 (20.3%)	3,691 (50.4%)	3,630 (49.6%)
19 years	6,831 (19.0%)	3,469 (50.8%)	3,362 (49.2%)
<i>Type of institute</i>			
Secondary school or high school formerly specializing in education	12,852 (35.7%)	5,152 (40.1%)	7,700 (59.9%)
Polytechnic institute	12,013 (33.4%)	7,581 (63.1%)	4,432 (36.9%)
Vocational institute	7,789 (21.6%)	4,121 (52.9%)	3,668 (47.1%)
Arts institute	3,326 (9.2%)	1,147 (34.5%)	2,179 (65.5%)
<i>Geographical area</i>			
North-Western Italy	9,860 (27.4%)	4,954 (50.2%)	4,906 (49.8%)
North-Eastern Italy	5,954 (16.5%)	3,013 (50.6%)	2,941 (49.4%)
Central Italy	6,048 (16.8%)	3,032 (50.1%)	3,016 (49.9%)
Southern Italy/Islands	14,118 (39.2%)	7,002 (49.6%)	7,116 (50.4%)

**Table 2.** Distribution of the habits, the behaviours and the interpersonal relationships of the students, by gender

Variables	Total	Male	Female	P-value
	N (%)	N (%)	N (%)	
<u>Activities carried out every day or several times a week (% on the total respondents)</u>				
Reading books for pleasure (not scholastic)	5,436 (15.1 %)	1,770 (9.8%)	3,666 (20.4%)	<0.001
Going out in the night (disco, bar, parties, etc.)	12,440 (34.6%)	7,049 (39.2%)	5,391 (30.0%)	<0.001
Playing with the computer and with videogames	19,083 (53.0%)	12,240 (68.0%)	6,843 (38.1%)	<0.001
Practice sport or attending the swimming pool, the gym, etc.	18,900 (52.5%)	11,522 (64.0%)	7,378 (41.0%)	<0.001
Playing with the slot machines (video poker, etc.)	1,222 (3.4%)	919 (5.1%)	303 (1.7%)	<0.001
<u>Unsatisfactory interpersonal relationships (% on the total respondents)</u>				
With mother	2,125 (6.0%)	888 (5.1%)	1,237 (7.1%)	<0.001
With father	3,168 (9.0%)	1,245 (7.3%)	1,923 (11.3%)	<0.001
With brothers/sisters	1,702 (4.8%)	784 (5.4%)	918 (6.2%)	0.002
With classmates	2,593 (7.3%)	1,085 (6.2%)	1,508 (8.6%)	<0.001
With friends	1,348 (3.8%)	651 (3.7%)	697 (4.0%)	0.237
<u>Losing two or more days of school for lack of will</u>	7,539 (21.0%)	3,957 (22.0%)	3,582 (19.9%)	<0.001
<u>Feelings</u>				
Dissatisfaction with themselves	4,608 (13.1%)	1,479 (8.4%)	3,129 (17.8%)	<0.001
Believe to be useless	15,931 (45.4%)	6,950 (39.7%)	8,981 (51.1%)	<0.001
Negative attitude towards themselves	5,575 (15.9%)	1,870 (10.7%)	3,705 (21.1%)	<0.001
Feel depressed in the last 7 days	5,003 (14.3%)	1,574 (9.0%)	3,429 (19.5%)	<0.001
Feel sad in the last 7 days	8,700 (24.8%)	2,771 (15.8%)	5,929 (33.7%)	<0.001
<u>Dangerous behaviours</u>				
Be involved in fights (at school, at home, etc.)	2,256 (6.5%)	1,747 (10.1%)	509 (2.9%)	<0.001
Caused damage purposely at school or at public spaces (parks, roads, etc.)	1,331 (3.8%)	1,075 (6.2%)	256 (1.5%)	<0.001

**Table 3.** Tobacco and alcohol consumption, by gender

Variables	Total	Male	Female	p-value
	N (%)	N (%)	N (%)	
<u>Tobacco consumption in the last 30 days (prevalence % - LMP)</u>	13,625 (37.9%)	6,977 (38.8%)	6,648 (37.0%)	<0.001
15 years	1,576 (23.5%)	728 (22.5%)	848 (24.4%)	0.070
16 years	2,502 (33.8%)	1,195 (32.4%)	1,307 (35.1%)	0.015
17 years	3,118 (40.4%)	1,615 (41.2%)	1,503 (39.7%)	0.183
18 years	3,292 (45.0%)	1,736 (47.0%)	1,556 (42.9%)	<0.001
19 years	3,137 (45.9%)	1,703 (49.1%)	1,434 (42.7%)	<0.001
<u>Frequency of tobacco consumption in the last 30 days (% on the total tobacco users - LMP)</u>				
Less than 1 cigarette per day	4,861 (35.7%)	2,376 (34.0%)	2,485 (37.4%)	<0.001
1-5 cigarettes per day	3,631 (26.6%)	1,736 (24.9%)	1,895 (28.5%)	<0.001
More than 6 cigarettes per day	5,133 (37.7%)	2,865 (41.1%)	2,268 (34.1%)	<0.001
<u>Alcohol consumption in the last 30 days (prevalence % - LMP)</u>	21,262 (59.1%)	11,727 (65.1%)	9,535 (53.0%)	<0.001
15 years	2,568 (38.3%)	1,419 (43.9%)	1,149 (33.1%)	<0.001
16 years	3,907 (52.7%)	2,121 (57.5%)	1,786 (47.9%)	<0.001
17 years	4,948 (64.2%)	2,739 (69.8%)	2,209 (58.3%)	<0.001
18 years	5,075 (69.3%)	2,799 (75.8%)	2,276 (62.7%)	<0.001
19 years	4,764 (69.7%)	2,649 (76.4%)	2,115 (62.9%)	<0.001
<u>Frequency of alcohol consumption in the last 30 days (% on the total alcohol users - LMP)</u>				
Up to 9 times	18,376 (86.4%)	9,652 (82.3%)	8,724 (91.5%)	<0.001
More than 10 times	2,886 (13.6%)	2,075 (17.7%)	811 (8.5%)	<0.001

**Table 4.** Illegal substances consumption in the last 12 months and people with whom is the first use of substances, by gender

Variables	Total	Male	Female	P-value
	N (%)	N (%)	N (%)	
<u>At least one illegal substance users in the last 12 months (prevalence %)</u>	7,273 (20.2%)	4,357 (24.2%)	2,916 (16.2%)	<0.001
<i>Age</i>				
15 years	551 (8.2%)	297 (9.2%)	254 (7.3%)	0.005
16 years	1,189 (16.0%)	703 (19.1%)	486 (13.0%)	<0.001
17 years	1,684 (21.8%)	1,007 (25.7%)	677 (17.9%)	<0.001
18 years	1,940 (26.5%)	1,180 (32.0%)	760 (20.9%)	<0.001
19 years	1,909 (27.9%)	1,170 (33.7%)	739 (22.0%)	<0.001
<i>Substances</i>				
Tranquilizers or sedatives (without medical prescription)	630 (1.8%)	201 (1.1%)	429 (2.4%)	<0.001
Amphetamines	209 (0.6%)	133 (0.7%)	76 (0.4%)	<0.001
Ecstasy	296 (0.8%)	189 (1.0%)	107 (0.6%)	<0.001
Inhalants	444 (1.2%)	240 (1.3%)	204 (1.1%)	0.088
Cannabis (Marijuana or Hashish)	6,888 (19.1%)	4,158 (23.1%)	2,730 (15.2%)	<0.001
LSD/hallucinogen	289 (0.8%)	198 (1.1%)	91 (0.5%)	<0.001
Crack	235 (0.7%)	154 (0.9%)	81 (0.5%)	<0.001
Cocaine	553 (1.5%)	372 (2.1%)	181 (1.0%)	<0.001
Other hallucinogens (hallucinogenic mushrooms, ketamine, mescaline, synthetic)	471 (1.3%)	308 (1.7%)	163 (0.9%)	<0.001
Heroin	114 (0.3%)	72 (0.4%)	42 (0.2%)	0.005
GHB (liquid ecstasy)	67 (0.2%)	44 (0.2%)	23 (0.1%)	0,010
Anabolic steroids	96 (0.3%)	82 (0.5%)	14 (0.1%)	<0.001
Alcohol with pills	354 (1.0%)	170 (0.9%)	184 (1.0%)	0.448
Others	231 (0.6%)	148 (0.8%)	83 (0.5%)	<0.001
<u>People with whom is the first use of substances</u>				
Alone	454 (5.2%)	291 (5.7%)	163 (4.5%)	0.021
Friends	6,939 (79.6%)	4,174 (81.3%)	2,765 (77.2%)	<0.001
Classmates	855 (9.8%)	510 (9.9%)	345 (9.6%)	0.636
Partner	383 (4.4%)	99 (1.9%)	284 (7.9%)	<0.001
Acquaintances	307 (3.5%)	197 (3.8%)	110 (3.1%)	0.056

**Table 5.** Poly-drugs users, legal and illegal substances, in the last 30 days, by gender

Variables	Total	Male	Female	p-value
	N (%)	N (%)	N (%)	
<i>Poly-drugs users in the last 30 days (prevalence %)</i>	5,010 (13.9%)	3,019 (16.8%)	1,991 (11.1%)	<0.001
<i>Age</i>				
15 years	383 (5.7%)	195 (6.0%)	188 (5.4%)	0.271
16 years	840 (11.3%)	505 (13.7%)	335 (9.0%)	<0.001
17 years	1,183 (15.3%)	705 (18.0%)	478 (12.6%)	<0.001
18 years	1,297 (17.7%)	798 (21.6%)	499 (13.7%)	<0.001
19 years	1,307 (19.1%)	816 (23.5%)	491 (14.6%)	<0.001
<i>Mixture of substances</i>				
Alcohol plus Cannabis	359 (7.2%)	259 (8.6%)	100 (5.0%)	<0.001
Tobacco plus Cannabis	321 (6.4%)	176 (5.8%)	145 (7.3%)	0.040
Consumption of 2 substances – other	152 (3.0%)	69 (2.3%)	83 (4.2%)	<0.001
Alcohol plus Tobacco plus Cannabis	3,180 (63.5%)	1,933 (64.0%)	1,247 (62.6%)	0.315
Consumption of 3 substances – other	256 (5.1%)	117 (3.9%)	139 (7.0%)	<0.001
More than 3 substances	742 (14.8%)	465 (15.4%)	277 (13.9%)	0.146

**Table 6.** Parameter estimates of the logistic regression model, by gender

Covariates	$\beta$	S.E.	Wald	Df	P-value	Exp( $\beta$ )	95% CI Exp( $\beta$ )	
							Lower	Upper
<b>FEMALE</b>								
Going out a lot in the night	0.30	0.060	25.358	1	0.000	1.353	1.203	1.522
More than one day lost at school	0.52	0.047	123.253	1	0.000	1.678	1.532	1.839
Drunkenness	1.75	0.055	1,003.084	1	0.000	5.741	5.153	6.397
Friends/siblings who use drugs	2.48	0.089	773.179	1	0.000	11.998	10.070	14.295
Unsatisfactory relationship with the parents	0.41	0.047	74.875	1	0.000	1.504	1.371	1.649
Parents with little knowledge about the places where their children spent the Saturday night	0.55	0.065	71.887	1	0.000	1.732	1.525	1.966
Alcohol consumption	0.69	0.058	141.217	1	0.000	2.001	1.784	2.243
Constant	-5.57	0.106	2,750.647	1	0.000	0.004		
<b>MALE</b>								
Going out a lot in the night	0.56	0.055	104.500	1	0.000	1.759	1.578	1.960
More than one day lost at school	0.55	0.041	177.631	1	0.000	1.737	1.602	1.884
Drunkenness	1.52	0.048	1,019.476	1	0.000	4.574	4.166	5.021
Friends/siblings who use drugs	2.37	0.071	1,104.763	1	0.000	10.670	9.280	12.268
Unsatisfactory relationship with the parents	0.45	0.046	93.207	1	0.000	1.566	1.430	1.715
Parents with little knowledge about the places where their children spent the Saturday night	0.38	0.051	57.371	1	0.000	1.469	1.330	1.623
Alcohol consumption	0.61	0.056	120.233	1	0.000	1.850	1.657	2.064
Constant	-5.09	0.092	3,083.658	1	0.000	0.006		